



# Rural Environment. Education. Personality. (REEP)

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# **Rural Environment. Education. Personality. (REEP)**

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## Foreword

The Institute of Education and Home Economics of the Faculty of Engineering, Latvia University of Agriculture organizes annual international scientific conferences **Rural Environment. Education. Personality (REEP-2017)**. One hundred and thirty-eight authors and co-authors of the articles are from 9 countries - Czech Republic, Estonia, Kazakhstan, Latvia, Lithuania, Poland, Russia, Turkey, UK. Totally 38 educational establishments are represented in the Proceedings.

**Aim of the Conference:** to find out the solutions, exchange the ideas and highlight topical problems on the 21st century tendencies and trends in education in the context of problems and solutions for nowadays school, university and adult education, competence, life quality in home environment, development of professional education and career.

Thematic groups of the articles:

- problems and solutions for nowadays school, university and adult education;
- education for getting competence;
- life quality in the context of home environment, home economics, household, consumer science, visual art;
- development of professional education and career.

The Conference focuses on perspectives of education and training systems considering changes in rural social environment imposed by changes in a society both in global and local scope.

The first section **Problems and solutions for nowadays school, university and adult education** includes a variety of articles about children and adult education, philology, psychology, sociology, engineering and mathematics, revealing problems that are essential to solve in order to improve the education system.

Articles dealing with problems concerning school education, covered the following topics: the learning environment in today's school in the context of the curricular content reform; learning theories in the modern scholar learning aspect: different problems and solution in practice; analysis of barriers and opportunities for expanding creative school culture in Baltic States; teacher Leaders as Agents of Innovation Diffusion; pre-service teachers' opinion about the content of modern basic education in the science context; olympic Education for Mathematics in the Primary School, Simulation modelling for school development in Ādaži; respecting learner's cognitive interests in the process of choosing a theme for the Latvian language learning in primary school.

Articles, dealing with problems concerning higher education and life-long learning, covered the following topics: 1st year students' perceptions of higher studies: the case of University of Latvia; formative assessment as three-sided process in higher education; the opinion of Latvian and Norway students about education for sustainable development; academic discourse and its implications for higher education: students' cognitive flexibility development and its backward input in academic discourse development; the influence of assessments of courses to the assessments of defence of qualification work at RCMC of RSU.

It is also essential to reflect problems in regard to mathematics, engineering and information technology, which also includes computerized programs created to improve the process of education. The topics of the articles researching the mentioned phenomena are: the role of the survey of students of RTU in provision of the quality of studies of mathematics; information and communication technology in education of prospective teachers of non-ICT fields of studies; using critical incident analysis to develop grade 11 EFL Students' self-reflection skills and conditional phrase usage; causes of failures in mathematics by engineering students at Latvia University of Agriculture; computerized error analysis for researching Baltic interlanguage.

Problems concerning language learning and speech are also researched by authors of this section, for example, articles like: team-based learning in business english; pedagogical conditions of grammatically accurate speech-making for the children at the age from 3 to 5 years.

Other aspects in different scientific fields have been covered. In the field of agriculture an article researching readiness for applying innovation in rural areas has been presented; in the field of human resources an article analyzing human resources and optimization of evaluation processes as the basis of the quality management system has been presented. In the field of psychology attitudes towards violence and their measurement methods have been researched, also the topic learning to learn scenarios at a residential home was presented in the field of psychology.

In conclusion, the section "Problems and solutions for nowadays school, university and adult education" covers a very wide range of scientific fields and gives a very important input in modern education, its problems, solutions and methods.

The second section **Education for getting competence** focuses on education of sustainable development competence in higher education institutions, usage of the goals for sustainable development in formation of learning outcomes in higher education and the need for teachers' educational competences in the strategic documents of Lithuanian higher education. The articles reflect the mission of higher education institutions in promotion of sustainable development ideas and capacity of students to communicate on them and discuss about a sustaining world view. The studies are also devoted to the implementation of the goals for sustainable development ideas in learning outcomes, and analysis of students' and educators' attitude towards the learning outcomes. The analysis of the educational competences of Lithuanian higher education teachers and possibilities for their improvement reviewing strategic documents was carried out as well. The analysis outlined the education in Europe and highlighted higher education teachers' activities under the prevailing paradigm of life-long learning which concentrates on continuous development of educational competences.

Importance of mathematical competence of adolescents as one of the key competences for personal fulfilment, social and economic inclusion in the knowledge society of the 21st century was outlined. The factors of the formation process of the pupils' mathematical competence were analysed. The most popular approaches on defining mathematical competence were compared. As regards mathematical competence a case of Kazakhstan was studied in relation to interactive methods as the way of forming the research competence of future math teachers. The article presents the usage of the interactive methods for forming research competence for the math students in the "Math Teaching Methods" training course. The method of usage of videos to support teaching and learning in the study process was assessed in the case of Latvia University of Agriculture.

The development of competence was also revealed by analysis of cooperation skills improving the sense of rhythm during music lessons in primary school in Latvia. The study also helped to identify different disturbing factors that can affect pupils' cooperation in a learning group while they trying to perform the rhythm exercise together. The Lithuanian case was devoted to self-development of foreign master's degree students' intercultural competence through music activity. The most important strategies of the development of intercultural competence based on musical activities were highlighted and verified by an educational (music performance) project. It was determined that (self-) development of intercultural competence was largely affected by the internal factors, such as musical abilities, value-based orientations, artistic experiences and experience of cultural activity.

The problems of adult education were reflected in the Poland's case on farmers' educational background, and the implementation of agricultural innovations illustrated with an example of land consolidations. The article highlighted the fact that both domestic and foreign investigations confirmed that farmers with a higher level of education managed their farms more effectively. The study at the level of both the country and the municipalities of Lubelskie Voivodship confirmed the fact that consolidations are more frequently implemented in the areas where agricultural farm managers have a lower educational level.

Another study on adult education was devoted to the development of labour protection competence for specialists in Latvia. The author evaluated the dynamics of the development of the specialists' labour protection competence in the learning/studies process and work environment, and evaluated the

improvement of competence in learning/studies and in the work environment of enterprises and organizations.

The studies of competence also comprised the Latvian pedagogue Atis Kronvald's (1837-1875) pedagogical heritage. The pedagogical legacy of A. Kronvalds was rich and influential in the following fields: the development of pedagogical terminology and his thoughts about languages; working out the regularities between the subject of pedagogy science and upbringing; the link between school and society; the importance of parents in upbringing; working out the content and methods of a folk school; origins of adult education; pedagogy science as the theoretical foundation of teacher's profession.

Articles of the third section **Life quality in the context of home environment, home economics, household, consumer science, visual art** describe the topics on the studies of competences in Home Economics education, information and communication technologies as part of our everyday life and teaching tool, art environment, human well-being and educational problems. In recent years, reforms which are related to the notions "competences" and "the learning outcome" in curricula are implemented in many countries. Starting with the year 2018, the implementation of Competence-based Curriculum has to be started also in Latvia. The research confirmed that the most developed competences in Home Economics and Technologies are: technology and digital competences, social, cultural awareness and creativity expression competences.

In various countries different traditions of training teachers of Technologies/Home Economics/Design and Technologies have been established according the traditions and needs of every country. The aims and learning outcomes of the study programmes implemented in Lithuania, Finland and Great Britain are analysed, the volumes of the study subjects of Nutrition, Textile, Constructive Materials, Electronics, Design; the study subjects of Pedagogy and Psychology; Research Activities and Graduation Paper Preparation; Sustainable Development and Consumption Culture are compared.

Estonian lifelong learning strategy 2020 foresees the modernization and renewal of teaching materials through increasing their digitalization. The mapping covered all the subjects including technology education. The study made it possible to get a nationwide overview of the existing teaching materials and its quality that support the curriculum. Research showed that instructional materials for practical tasks created using today's digital possibilities are most needed by teachers.

One of the schools' educational targets is to give students the best possible readiness for coping in their independent life in contemporary society. Therefore, the content of different school subjects needs to be in continuous changes simultaneously with the developments in society. The content of home economics education in Estonia has widened within last decades with the focus moving from obtaining practical skills to becoming a responsible citizen.

Handicraft and Home-economics teachers' understandings of the possibilities of ICT usage in their practice were investigated. The results of the study showed that Home-economics teachers' readiness to use ICT tools depends of their subject specific views. Even if Home-economics teachers see digital technology as a part of their daily life that can be integrated in their work, they do not use the full potential of new possibilities.

One of the educational problems is related to developing pupils' thinking during the lessons of Home Economics and Technologies. All kind of thinking - creative, critical and logical – are a fundamental human activity, and it is very important in problem-solving and decision-making processes. According the results of research, the pupils had sufficiently developed their creative and critical thinking skills, while their logical thinking ability was lower during the lessons of Home Economics and Technologies.

Arts education is one point of view that reveals the environmental, cultural and human unity. Life becoming dependent on industry, it removes people from nature. For that reason, it is a significant element that man and nature live together and become in harmony. Knowledge of the form work, which is one of the first steps of sculpture education, is possible through the formation of the material in a general sense. Each material, which has its own specific features, offers various formation possibilities. It transformed into a form constitutes an important determinant factor for the development creativity during the art education process.

Agent-based simulation of the influence of customers' behaviour on the bank's failure were investigated in Lithuania. The aim of the research was to investigate influence of canard on banks customers'

behavior and effects of various bank decisions regarding of giving back to depositors their money. Simulation and its results showed that the possibility for bank customers to get back their money suppresses rumours, but limitations intensify the panic. Authors suppose that the significance of the model and its results' lies in demonstration of possibility of agent-based models to investigate the banks and its customers' behavior without real-life experiments. The agent-based modeling can be used in university in consumer behavior courses as well.

Research articles of forth section **Development of professional education and career** cover discussions on wide range of topics: manifestation of stakeholders' roles in the context of students' preparation for the labour market, academic performance of students and difficulty of university education, integration of transferable skills into the curriculum, purposeful development of career management skills in the podologists' study process, importance of generic competences in adult education, importance of career services in job searching process for long term unemployed social benefits receivers and importance of goal-setting tasks in career counselling were investigated, modern teacher's career were described and challenges and success factors of an international career, and students' career guidance in secondary vocational education were evaluated.

The preparation of professionals for future labour market calls for the active involvement of both educational institutions and other stakeholders who represent the norms and values of society. Researchers conclude that the boundaries of responsibility and commitment have not been clearly defined between stakeholders.

Researchers also analyse generic competences in active voluntary activity. The quantitative research revealed that most adults seek to develop generic competences in voluntary activity; especially for older respondents it is very important to help others and enhance self-confidence.

In order to explore the formation of career management skills in a purposefully organized study process the aims, methods and learning outcomes of the three European podologists' study programmes have been compared. Research shows that the study process, which is directed to practice, promotes development of career management skills.

Universities should provide their graduates with a wide range of skills necessary for launching and managing their professional career. Based on the analysis of theoretical literature and official EU documents on higher education and a survey conducted in two higher education institutions researchers conclude that the formation of students' transferable skills should be integrated in study programmes and promoted over the whole period of studies.

Academic performance of students and the difficulty of university studies are two important factors of university education. The results showed that subjectively the students evaluate the difficulty of their studies rather more critically than their achieved academic performance is.

Globalisation has opened new opportunities for both enterprises and their employees, therefore researchers focus on the analysis of challenges and success factors of an international career. Scientists find out that the success of expatriation and international career of employees is mostly determined by personal individual and organisational factors.

Setting high goals by youth influences their achievements in studies and success in their lives. The aim of the research carried out in the vocational school is to analyse the results of completing goal-setting tasks by students (aged 17-29) in career counselling classes. The study revealed that the respondents most often set the following goals: starting a family, starting up a business and becoming a good specialist in the chosen profession.

Teaching always has been a calling. Nowadays the teacher's activities are influenced by the changes in society and education. The authors of the report "The Modern Teacher's Career" have evaluated theoretical conclusions and research results on the advantages and disadvantages of a teacher's career and the successfulness of a teacher's career.

Career Services should have serious impact on the job searching process. Researchers investigate how long-term unemployed social benefits receivers use and evaluate career services. Results show that career services that are available at State Employment Agency are not designed for marginalized and unmotivated people and that job searchers are not enough informed about such services.



The necessity of dialogue in career counselling interventions is verified during theoretical analysis and semi-structured interviews in secondary vocational schools.

Teachers, lecturers, professors, masters and doctoral students have covered a wide range of themes providing diversity and topicality of the conference.

Many thanks to the chiefs of all conference sections. During the conference the first section is divided in three parts and I would like to say thanks to the chiefs of all three subsections L. Šīmane-Vīgante (1<sup>st</sup> section), I. Katane (1<sup>st</sup> section) and H. Lukáš (1<sup>st</sup> section), and to the chiefs of other sections B. Briede (2<sup>nd</sup> section), I. Līce (3<sup>rd</sup> section) and J. Pāvulēns (4<sup>th</sup> section) for organization and management of section effective work and for given contribution for preparation the descriptions for the foreword. I would like to say many thanks to all authors, reviewers and organizers for their contribution in international scientific level.

On behalf of the Conference Organizing Committee  
Associate professor Vija Dislere  
Institute of Education and Home Economics  
of the Faculty of Engineering,  
Latvia University of Agriculture

# **Problems and solutions for nowadays school, university and adult education**



## The Learning Environment in Today's School in the Context of Content Reform of Curriculum

Rudite Andersone Dr. paed.  
University of Latvia, Latvia  
[rudite.andersone@lu.lv](mailto:rudite.andersone@lu.lv)

**Abstract:** The learning environment nowadays has changed dramatically. Thanks to the rapid digitalization and globalization, it has enlarged and reaches out beyond the classroom. Children already with their first steps find themselves in the environment filled with different digital toys. The adults have to ensure that they are applied usefully in the acquisition and construction of new knowledge. The reform of the teaching/learning content envisages the implementation of the competence approach. This means that the focus on self-regulated learning, construction of knowledge and its application in diverse situations increases. Possibilities should be ensured for learners in the learning environment to apply their knowledge in diverse situations. Many researchers have studied the learning habits of the young generation and perception peculiarities that are characteristic to the pupils of modern digital age. This has influenced the changes in the teaching/learning environment. However, the teaching/learning environment in school has preserved also such elements that have been known for several generations – desks and blackboards, although their design and application have changed. The aim of the article is reflect on some of the theoretical aspects of the learning environment and the findings of the empirical study on the experience of forming the learning environment in the practice of today's schools.

**Key words:** learning environment, curricular content reform, school education.

### Introduction

Education development guidelines 2014 – 2020 (Izglītības attīstības..., 2013) states that the quality of education is significantly influenced by modern educational environment and educational process that promotes the perception and acquisition of the content. The content of education, its reform has experienced intrinsic changes having started the elaboration of the competence-based learning content which envisages developing such competences as learning to learn, mathematical, science competences, communication in different languages, social and civic competence, self-actualization, self-initiative and entrepreneurial competence as well as digital and cultural competence. It is planned to introduce the competence-based learning content till 2022 (Āboltiņa, 2016). A significant role will be given to the use of modern technologies in the teaching/learning process that allows flexibility and more individual performance of tasks for the concrete learner. The implementation of the teaching/learning reform is ensured by a modern educational environment.

The basis for such a content reform is found in the idea that the modern teaching/learning process is still rooted in the model of the industrial era which envisages the transfer of knowledge to learners from some external source- the teacher, book, school. However, today the experts on education all over the world discuss the necessity to transform the learning environment making it more adequate to today's learners who learn and gain experience continuously - on-line, in the classroom, concert, library, and every life situation. The research shows that the learning environment that is arranged in accordance with modern requirements can improve students' achievement even by 25 % (Gribusts, 2016).

The learning environment is characterized by three essential components: human resources (pupils and teachers), mental circumstances (mutual relations) and the surrounding environment (premises of the educational institution, their arrangement and the methodological provision for learning and teaching).

Besides, it should be taken into consideration that there is no just one correct answer in today's learning situations. There is only a continuous process of cognition developing the skills, acquiring the experience and improving the knowledge. The same refers to a modern learning environment which reflects the formation of today's knowledge society. There is no longer one correct way of how and what to teach. The learning environment should be formed so that it would support different ways of learning – discussions, empirical inquiry, and reflection. Active learning through cooperation is very important for the implementation of the competence approach and the space should support authentic lessons embedded in the project method and inquiry (Gribusts, 2016).

**The aim of the article** is to reflect on some of the theoretical aspects of the learning environment and the findings of the empirical study on the experience of forming the learning environment in the practice of today's schools.

## Methodology

The learning environment has different explanations. The learning environment is a purposefully organized set of physical, social and informative conditions in which the pupil forms and implements his/her experience: knowledge, skills and attitudes to oneself and the surrounding world (Šūmane, 2012).

The learning environment includes the buildings for learning, sports halls, relaxation rooms and everything that ensured the teaching/learning activities (Radhakrishnan, 2009).

According to Wilson the learning environment contains the learner and a setting or "space" in which the learner acts using tools and devices, collecting and interpreting information, perhaps interacting with others (Wilson, 1995).

A learning environment consists of the physical, mental, and learning material framework and prerequisites for goal-oriented learning. These can be provided by the organizer of education or selected by the learner him/herself (Pantzar, 1995).

A new learning environment is a holistic and integrated environment with the goal of promoting opportunities for life-long learning and individual study. Its characteristics include openness and flexibility in terms of time, place, method and the right to study. It is an environment which is not yet fully established and contains many new elements which are still being experimented with. Typical features also include new forms of action and student group, made possible by novel approaches and educational policy, together with the possibilities offered by new technology (Pohjonen, 1997).

The learning environment is also defined as the interaction of three factors (Learning Environment, 2013; Bates, 2015):

- diversified physical space (not only the classroom),
- context for what the pupil is learning,
- culture of what and how the pupil is learning (cooperation, relations, attitude).

**The physical space** in which education takes place in today's school in the context of the content reform forming and implementing the competence-based curricula is really being diversified. This is not only the classroom itself, the learning takes place in the school library, school yard, the nearby business company, the city park and forest, the arrangement of the classroom allows changing quickly the pupils' working forms: in groups, individual work, the whole class work using diverse learning materials, including the digital, internet, mobile phones.

**The context** in the learning environment is largely connected with the teaching/learning content which at present is being reformed. Here are several aspects of importance (Bates, 2015).

- Aims of the learning content (Is the teaching/learning content and aim or means for achieving other aims? Is it important to know facts in order to understand the phenomena or is it important to know where to find them in case of need?).
- The scope and depth of the learning content (It is not possible to acquire all knowledge. Therefore, one should concentrate on the acquisition of skills how to manage the knowledge (to know where to find it), to solve problems and make decisions).
- Sources for the acquisition of the learning content (To what extent the sources for the acquisition of the content are defined by the teacher and to what extent by the pupil him/herself? How are sources used for the acquisition of the content in today's school – libraries, internet, social networks, mass media, and teacher's "performance"?).
- Structure of the learning content (Selection and sequence of the content, focusing on particular content areas, content integration is important. Besides, the new information technologies allow the pupil him/herself structure the content).
- Assessment according to the aim (if the aim is memorising then automatized tests/tasks are used; if the aim is applying the content for the formation of arguments then practical activities are used; if the aim is knowledge management then such tasks are selected that require assessing, comparing, analysing).



**Culture** is the dominant values and views that influence the decision making. It is based on (Bates, 2015):

- mutual respect,
- openness to different views and opinions,
- evidence-based arguments and judgements,
- learning is made attractive, interesting, even fun,
- each school subject emphasizes core values,
- clear assessment criteria,
- cooperation and mutual support.

The culture of an effective and modern learning environment that promotes the introduction of the learning content reforms is characterized by several features (Heick, 2014):

- pupils in the teaching/learning process ask questions that developing their curiosity and forming meaningful interaction with texts, media and classmates;
- pupils' questions are assessed more than the answers because questions lead to deeper understanding of the content;
- teaching/Learning resources are being diversified: not only textbooks, media are used but also the professional environment of different fields, content experts outside education, culture mentors, people popular in the society;
- diversification of learning models: inquiry-based learning, project-based learning, direct instructions, e-learning, mobile learning;
- learning should not be polluted with the "real world" concept but learning starts and ends exactly there;
- learning is personalized with different criteria, not only in assessment but also in facilitating the interest, perception of the content;
- assessment is clear, adequate and transparent. It is followed by the support system (scaffolding);
- achievement criteria are balanced and known; then a pupil will involve meaningfully in the common learning of the class;
- learning habits are developed continuously. Learning habits are connected with inquisitiveness, perseverance, flexibility, priorities, creativity, cooperation, reflection;
- there is continuous support for the practice, pupil's learning activity because each term can be explained differently and they can be contradictory. This way a deeper understanding of the content is formed.

A vital context of the 21<sup>st</sup> century learning environment is that learning should promote each pupil's sense of community and interaction in which there are several important conditions: technologies, space, time, culture and politics. Their impact is cumulative (21st Century..., 2009). Besides, each pupil's needs have to be observed. Therefore, learning should be viewed as a complex activity in which several ways of learning can be implemented simultaneously (Osborne, 2013):

- personalized learning (a way how we learn is as unique as our fingerprints);
- socially constructed learning (deeper understanding of the learning content is developed as a result of cooperation);
- differentiated learning (pupils need different level challenges, speed, content);
- learning initiated by pupils themselves (the pupil forms his/her own learning experience and finds out more);
- learning that is connected with the physical world and authentic context (e.g., the ecosystem of the pond is better understood if it is seen in nature).

Changes of the learning environment in the curriculum reform context were analyzed in the empirical studies. The experience in eight schools and three municipalities, and the result in the one European Social Fund project and one international study has been analysed in the present empirical study.

## Results and discussion

The obtained findings were grouped in three groups – **physical environment**, **the context** in which the pupil is learning and **culture** which is characterized by cooperation, relations and attitudes.

***Physical environment***

- European Union (EU) funds during this planning period have intended for the modernization of general education schools 162 million euros. It is envisaged to achieve that in the year 2023 every fourth pupil in Latvia will study in a fully modernized environment (Klūga, 2015).
- The City property development committee of Riga Municipality has included in the Investment plan of the Property department for 2016 – 2018 activities – the infrastructure improvement of the learning environment - to make the environment in 31 educational institutions better. Thus, e.g., Riga Zolitude gymnasium will equip the science study rooms, Riga French lyceum will arrange ergonomic learning environment, Riga English Grammar school will have a sports field (Plāno uzlabot..., 2016).
- The Action plan of the education development programme 2016 – 2020 of Alūksne region has stated that the quality of the education environment will be increased carrying out the improvement of the content and developing a respective infrastructure. As a result, education institutions will have taken the necessary measures for establishing an ergonomic environment (change of furniture, lighting, rearrangement and rebuilding of rooms) as well as the learning process will be organized in the environment suitable for pupils' needs using modern teaching/learning means and equipment. The proportion of digital learning means in general education in 2017 will be 15 per cent and in 2020 – 30 per cent of the total number of the teaching/learning means (Alūksnes novada..., 2016).
- The development priorities of Salaspils Secondary school Nr. 2 for 2013-2015 include ensuring the accessibility of the modern, contemporary learning technology environment in study rooms, providing the study rooms with interactive boards, multimedia centres (Bogdāne, 2014).
- One of the action aims of Riga Secondary school Nr. 93 is to ensure qualitative and aesthetically favourable learning environment as it is mentioned in the school's homepage (Mūsu darbības..., 2016).

***Context***

- Elementary classes of Ventpils Secondary school Nr. 4 participate in the pilot project of education innovations "Ready for tomorrow!" in order to gain the understanding and insight into how the learning process is taking place when using tablet PCs in lessons (Kārkla, 2015).
- V. Pludonis Kuldīga gymnasium in 2016 participates in Erasmus+ project "Increasing the information technology competence of the teachers of Vilis Pludonis gymnasium for promoting a modern learning environment" (Bebriša, 2016).
- The working plan of Riga Hanza Secondary school which is presented in the school's homepage states that it is intended to seek possibilities for introducing WiFi in the school library (Attīstības plāns..., 2015).
- Cēsis City Pastarins primary school is reconstructing the school yard in 2016/2017 school year in order to create a motivating learning environment in which to use research and practical methods in the learning process (Skolas attīstības..., 2015).

***Culture***

- It has been stated in the TALIS study performed in 2013 that more than 90 % of teachers in Estonia, Finland, Latvia and Poland consider that teachers and pupils get on well with each other, that pupils' feeling of comfort is important and that teachers are interested in what pupils are saying. At least 94 % of teachers in all the countries participating in the study, work at schools the principals of which agree that relations between pupils and teachers are good (in Latvia –99 %) (Ozola, 2015).
- The programme "Support to positive behaviour" has been developed and implemented in the frame of the European Social Fund project "Development and implementation of support programs for establishing a support system for young people under social exclusion risk" in the period from 2011 till 2013 under the supervision of the academic staff of Faculty of Education, Psychology and Art, University of Latvia. The project participants were 15 municipalities and 25 schools (Balcere, 2012).
- Cēsis New elementary school since September 1, 2016 has started introducing the cooperation model "Opportunity Culture" which envisages regular mutual cooperation of teachers, their team teaching, sharing of the experience in order to improve pupils' learning environment (Narvaiša, 2016).

- Ventspils 6th Secondary School is paying special attention to the cooperation with teachers and classmates, specifying each school employee's responsibilities and rights. Positive relationship between students increases the learning motivation and as a result the pupil is happy to go to school (Segliņa–Glušková, 2014).

## Conclusions

The learning content reform envisages the transition to competence-based learning content which brings along not only changes in the learning content itself but also in the way how learning and teaching take place. New technologies that have already entered pupils' everyday life affect the transformations of the learning environment and form new learning habits. Socially constructive learning takes place under the teacher's guidance as well as is initiated by the pupil him/herself. It is also connected with increasingly more active use of e-learning and mobile learning.

Different projects at the municipality and school level are addressed exactly to the improvement of the learning environment. However, more attention is devoted to the improvement of the physical environment. Fewer activities in school practice are devoted to the development of such components of the learning environment as context which is connected with how the pupil learns and culture that is described by cooperation, relations and attitudes.

What the pupil learns is largely defined by the national education standards. However, they do not provide answers to the questions - Is the teaching/learning content and aim or means for achieving other aims? To what extent the sources for the acquisition of the content are defined by the teacher and to what extent by the pupil him/herself? Which are the aims of assessment in each particular case? But the answers to these questions characterize the learning environment.

The effectiveness of the learning content reform is also significantly influenced by such a component of the learning environment as culture which is characterized by cooperation, relations and attitudes in the learning process. Although the learning style, activity of each pupil is very individual, special it, however, does not take place separately but in continuous cooperation, both in face-to-face meetings, on-line and being removed from other people. Pupils' learning habits are more increasingly connected with the use of modern "digital toys" (tablet PCs, mobile phones) in the learning process, in the communication with peers and other people. There exists the risk of narrowing the learning environment perceiving it more on the "on-line regime" which has to be taken into the consideration. Therefore, the diversified physical learning environment, which leaves the concrete classroom and moves to the city park, library, business company or public institution where pupils observe processes, where situations unusual in the pupil's everyday life are modelled, helps to develop true competences that will help the pupil to continue his/her lifelong and knowledge-wide education.

## Bibliography

1. *21st Century Learning Environments*. Partnership for 21st Century Skills (2009). [online] [04.11.2016] Available at [http://www.p21.org/storage/documents/le\\_white\\_paper-1.pdf](http://www.p21.org/storage/documents/le_white_paper-1.pdf)
2. *Alūksnes novada izglītības attīstības programmas 2016 – 2020 (Alūksne District Education Development Programme 2016 – 2020)*. (2016). Alūksne: Alūksnes novada domes sēdes 2016.gada 24.martā lēmums, protokols Nr.5, 37.punkts, 57. lpp. [online] [09.11.2016] Available at [http://www.aluksne.lv/zpp\\_dlemumi/2016/30.03/Prot\\_5\\_24\\_03.pdf](http://www.aluksne.lv/zpp_dlemumi/2016/30.03/Prot_5_24_03.pdf) (in Latvian)
3. *Attīstības plāns 2015.- 2018.gadam (Development Plan for 2015- 2018)*. (2015). Rīga: Rīgas Hanzas vidusskola. [online] [10.11.2016] Available at [http://www.rhv.edu.lv/sites/rhv/files/media/faili/rhv\\_att\\_plans.pdf](http://www.rhv.edu.lv/sites/rhv/files/media/faili/rhv_att_plans.pdf) (in Latvian)
4. Āboltiņa D. (2016). Sākas vērienīgs projekts mācīšanas pieejas maiņas atbalstam skolās (The Ambitious Project began to Support the Exchange of Teaching Approaches in Schools). [online] [10.11.2016]. Available at <http://visc.gov.lv/vispizglitiba/saturs/info.shtml> (in Latvian)
5. Balcere K. (2012). Ekspertes: Skolēnu mācību sasniegumi un viņu sociālā uzvedība ir saistīti (Expert: Student Learning Achievements and their Social Behavior is Related). [online] [02.11.2016]. Available at <http://www.atbalsts.lv/uploads/f/20130104094406607.pdf> (in Latvian)
6. Bates A.W. (2015). *Teaching in a Digital Age. Guidelines for Designing Teaching and Learning*. BC Open Textbooks. [online] [01.11.2016] <https://opentextbc.ca/teachinginadigitalage/>
7. Bebrīša L. (2016). Starptautiskie projekti (International Projects). Kuldīga, Latvija: V.Plūdoņa Kuldīgas ģimnāzija. [online] [06.11.2016] Available at [http://vpg.kuldiga.lv/skola/?page\\_id=3418](http://vpg.kuldiga.lv/skola/?page_id=3418) (in Latvian)

8. Bogdāne V. (2014). *Salaspils 2.vidusskolas pašnovērtējuma ziņojums (Salaspils 2nd Secondary School Self-Assessment Report)*. [online] [02.11.2016]. Available at <https://drive.google.com/file/d/0ByjTZHyDzaTKSndrSDVtbzExUTg/view> (in Latvian)
9. *Learning Environment*. (2013). The Glossary of Education Reform. [online] [06.11.2016] Available at <http://edglossary.org/learning-environment/>
10. Gribusts A. (2016). Kā uzlabot izglītības vidi, nenonākot pie "tā paša vecā"? (How to Improve the Educational Environment, without being at the "Same Old") In the *Journal „IR”*. 2016.03.14., 4. lpp. (in Latvian)
11. Heick T. (2014). *The Characteristics of a Highly Effective Learning Environment*. [online] [04.11.2016] Available at <http://teachthought.com/learning/10-characteristics-of-a-highly-effective-learning-environment/>
12. Izglītības attīstības pamatnostādnes 2014. – 2020.gadam (*Education Development Guidelines for 2014 – 2020*). (2013). Rīga: Izglītības un zinātnes ministrija. [online] [04.11.2016] Available at <http://www.lsa.lv/wp-content/uploads/2013/03/Izglitibasattistibaspamatnostadnes.pdf> (in Latvian)
13. Kārklā Z. (2015). Mācību vide paaugstina skolēnu ieinteresētību mācīties (Learning Environment Raises the Interest of Students to Learn). In *Neatkarīgā rīta avīze*. 2015.02.24. [online] [09.11.2016] Available at <http://nra.lv/latvija/izglitiba-karjera/135086-macibu-vide-paaugstina-skolenu-ieinteresetibu-macities.htm> (in Latvian)
14. Klūga M. (2015). Skolu modernizācija: iekārtos dienesta viesnīcas, sporta telpas un uzlabos mācību vidi (School Modernization: Equipment Dormitories, Sports Facilities and Improvement of the Learning Environment). [online] [06.11.2016] Available at <http://www.lsm.lv/lv/raksts/latvija/zinas/skolu-modernizacija-iekartos-dienesta-viesnicas-sporta-telpas-un-uzlabos-macibu-vidi.a123191/> (in Latvian)
15. Narvaiša D. (2016). *Cēsu Jaunās sākumskolas pašnovērtējuma ziņojums (Cesis New Elementary School Self-Evaluation Report)*. [online] [06.11.2016] Available at [http://cesis.jaunaskola.lv/wp-content/uploads/2013/05/Pasnovertejuma\\_zinojums\\_CJS-final-copy.pdf](http://cesis.jaunaskola.lv/wp-content/uploads/2013/05/Pasnovertejuma_zinojums_CJS-final-copy.pdf) (in Latvian)
16. Osborne M. (2013). *Modern Learning Environments*. Core Education. [online] [04.11.2016] Available at <http://www.core-ed.org/legacy/sites/core-ed.org/files/Modern-Learning-Environments-v.1.pdf?url=/sites/core-ed.org/files/Modern-Learning-Environments-v.1.pdf>
17. Ozola A. (2015). Students form Teachers' Perspective. In Geske A. (Ed.) *Teachers in Latvia and Around the World*. Riga: University of Latvia, 2015. pp. 209 – 228.
18. Pantzar E. (1995). Theoretical Views on Changing Learning Environments. In Pantzar E., Pohjolainen S., Ruokamo-Saari H., Viteli J. (Eds.) *Theoretical Foundations and Applications of Modern Learning Environments*. Tampere, Finland: University of Tampere, Computer Centre, pp.85 – 101.
19. *Plāno uzlabot mācību vidi 31 Rīgas skolā (There is a Plan to Improve the Learning Environment in 31 Schools of Riga)*. (2016). [online] [04.11.2016] Available at <http://www.tvnet.lv/zinas/latvija/622880-plano-uzlabot-macibu-vidi-31-rigas-skola> (in Latvian)
20. Pohjonen J. (1997). New Learning Environments as a Strategic Choice. In *European Journal of Education*, Vol. 32 (4), pp. 369 – 377.
21. Radhakrishnan C. (2009). *Managing and Maintaining Learning Culture and Environment among Teachers at Schools and Colleges*. [online] [09.11.2016] Available at <http://chettourhorizonsforteaching.blogspot.com/2009/03/managing-and-maintaining-learning.html>
22. *Mūsu darbības pamatmērķi (The Basic Goals of Our Operation)*. (2016). Rīga: Rīgas 93. vidusskola. [online] [11.11.2016] Available at <http://www.r93vs.lv/> (in Latvian)
23. Segliņa–Gluškova J. (2014). *Skolas psihologs (School Psychologist)*. [online] [12.11.2016] Available at [http://6vsk.ventspils.lv/?Audzin%C4%81%C5%A1anas\\_centrs:Psihologs](http://6vsk.ventspils.lv/?Audzin%C4%81%C5%A1anas_centrs:Psihologs) (in Latvian)
24. *Skolas attīstības prioritātes 2015 – 2018 (School Development Priorities 2015 – 2018)*. (2015). Cēsis: Cēsu pilsētas Pastariņa sākumskola. [online] [12.11.2016] Available at <http://pastarinaskola.lv/admin/dokumenti/4352d076dde87b74f0ad4778c8b9127c.pdf> (in Latvian)
25. Šūmane I. (2012). *Pusaudžu mācību sasniegumus veicinoša mācību vide (Learning Environment Facilitating Educational Achievements of Teenagers)*. Promocijas darbs. Rīga: LU. [online] [09.11.2016] Available at [https://dspace.lu.lv/dspace/bitstream/handle/7/4671/20543-Ilze\\_Sumane\\_2012.pdf?sequence=1](https://dspace.lu.lv/dspace/bitstream/handle/7/4671/20543-Ilze_Sumane_2012.pdf?sequence=1) (in Latvian)
26. Wilson B. G. (1995). Metaphors for Instruction: Why We Talk about Learning Environments. In *Educational Technology*. Vol. 35 (5), pp. 25 – 30.

## Learning Theories in Modern Scholar Learning Aspect: Different Problems and Solution in Practice

**Zenta Anspoka**<sup>1</sup> PhD; **Dace Kazaka**<sup>2</sup> PhD student

Riga Teacher Training and Education Management Academy, Latvia<sup>1,2</sup>

[zenta.anspoka@rpiva.lv](mailto:zenta.anspoka@rpiva.lv)<sup>1</sup>; [dace.kazaka@rpiva.lv](mailto:dace.kazaka@rpiva.lv)<sup>2</sup>

**Abstract:** The topicality of the research is connected with understanding that nowadays pedagogical process from different internal and external conditions has become more diverse, more variable and more open. It is necessary to evaluate historical heritage and look for new approaches, so that a scholar would perceive learning as a meaningful and personality important process. The aim of the research is to analyse learning theories and their correlation with scholar learning experience creation in practice. The methodology includes analyses of different pedagogical and psychological theories and empirical research results about how scholars are learning, what problems arise from the learning process, what are the causes and consequences. Empirical research data are obtained from pedagogical observation, during teachers' surveys. The research results show that, there exist such problems as uncritical historical experience denial or usage in new situations, the scholar learning results correlate with scholar learning experience. But teacher professional competence is closely related to the scholar learning experience developing process. Learning and teaching culture and its improvement are also a topical question.

**Keywords:** behaviourism, constructivism, school education, learning skill, scholar learning process and result.

### Introduction

Different kinds of changes have taken place in the education system recently. They are connected with public economic and social development changes, education policy of every country and the individual's understanding about the role of education in promotion of their quality of life, national economic development and welfare.

On the basis of the researches about the modern pupil's personality and its development (Grundmane, 2005; Purēns, 2015; Абрамова, 2002), about the essence of the learning process, its various kinds, how the study process has been arranged, pupil's experience to learn and its development (Bruce, Calhoun, 2010; Dunn, Dunn, 1978; Hattie, 2009; Fullan, Langworthy, 2013; Marzano, 2000; Sawyer, 2006), as well as the data obtained during the teaching practice, one can confirm that the topicality and value of the issue about the pupil's skills to learn and the teacher's role in the study process increase year by year. It can be explained from several points of view, but especially from the point of globalization where in the fast development process of information technologies the individual's needs and understanding about a good education changes, and the topical issue is not to acquire knowledge, but rather learn to create knowledge. At the same time the teaching traditions existing for decades in practice change neither fast nor easily. Not all teachers are ready to take risks, invest extra time and resources.

A topical problem is the teachers' confidence about their professional work, skill to change the society's attitude towards innovations, and therefore the teacher too often chooses to work in the pedagogic paradigm inherent in the common behaviourism – to offer ready-made knowledge and different stimuli for its acquisition. The study process is mostly understood as a qualitative information transfer from the teacher's side to the pupil, applying the particular teaching aids. It is even vindicated by the so called sustainable collective memory about school, developed in the society, which knows best what is needed and also tries to teach it. In this study process the convergent thinning dominates, in which there is one right opinion that has been written in the book, said by the teacher. The pupil's enthusiasm is limited to an active action to receive praise for the right answer, a good assessment. If it gives positive emotions, then, of course, it is possible to talk about learning under an amplification effect, but, if the pupil feels that learning is a competition, in which there are always both winners and losers, problems of different character appear, including the loss of learning motivation, problems of social behaviour (Fullan, Langworthy, 2013; Deimante-Hartmane, 2013; Petty, 2004; Sawyer, 2006).

Nowadays due to the increase of information load and its dissemination speed, technological achievements, globalization processes in society the skill to perceive not already ready-made



information, but rather to obtain, analyse, synthesize or compare it ourselves with the already existing familiar information and assess it critically is more and more necessary. Living in a society, in which it is more often necessary to assess the situation quickly and not to introduce new innovations, but to assess the already existing ones and look for ways to improve them, should be done on justified decisions based on facts, one should learn to think systematically already during the pedagogical process at school, plan one's action, find cooperation partners and be able to cooperate for the sake of the common goal (Fullan, Langworthy, 2013; Sawyer, 2006).

The principle of continuity is not less topical as the main principle of the 21<sup>st</sup> century education, which requires readiness for life-long learning. However, implementation of this principle depends straightforwardly on the quality of the learning skill. Only the human being, who has acquired the skill, is motivated to act, and the person does it purposefully and consciously, they are also ready to experiment, not afraid to make mistakes and be responsible for the result. Moreover, lifelong learning is also the issue of the teacher's competence. The challenges for teachers, which have appeared in the context of society's development, on the one hand make us look for new approaches, methods, but on the other hand also assess critically the historical heritage. When introducing innovative solutions, it is important not to get confused and understand that we can also make mistakes nowadays, since we are doing it without any theoretical or empirical justification, on the basis of emotional only partly justified considerations (Anspoka, 2014).

***The goal of the article*** is to analyse the learning theory and its relation to the formation of the pupil's experience in the modern pedagogical process.

### **Methodology**

Research is based on analyses of different pedagogical and psychological theories and empirical research results about how scholars are learning, what problems arise from the learning process, what are the causes and consequences. Empirical research data are obtained from pedagogical observations, during the teachers' surveys. 112 pupils of elementary school and secondary school, aged from 12-18, and 26 different subject teachers were frequently observed and surveyed. In order to provide the data reliability, the observation criteria of the learning process and level description on scale from 0-3 were developed, as well as repeated measurements were performed, including several experts. The observations of the lessons were transcribed and each statement was commented by experts. In the data processing process only the data which appeared in the repeated measurements was taken into account.

### **Results and discussion**

Learning and teaching are both a mutually related process and result. In the study process self-developing and self-regulating interaction of all the subjects involved in it takes place which promotes self-development and socialization of everybody's individuality. The study process is based on a dynamic system of pedagogical means, which is meant for the individual's development from different points of view – cognitive, emotional and social point of view (Fullan, Langworthy, 2013; Maslo, 1995).

Transferring knowledge only from an external source – teacher or specially prepared teaching aid, applying very little any other resources, it is possible to help only one part of pupils learn. However, in the study process the teacher is professionally responsible for every pupil whatever their ethnicity, individual abilities or special needs are. If a teacher has chosen to transfer information to a pupil, then it is the teacher's responsibility to decide whether the information is suitable and perceivable for the pupil. The pupil's self-initiative in the information perception and acquisition process is minimal (Bruner, 2006). The significance of information quality by means of content and form is confirmed by the observation outcomes of 12 % respondents. Lack of a systemic explanation in the teaching aid or teacher's narrative, ignorance of the pupil's perception pace, dominating type of perception or the language development level does not help to perceive the study content to be acquired, but just the opposite way – encumbers it and influences essentially the learning outcomes. At the same time the pupils' responses also confirm that the acquisition and reproduction of the information is, on the one hand, the most boring work (59.9 % of respondents have provided this answer), and, on the other hand, the easiest work (41.1 % of respondents). As learning is not only memorization of facts, but a process in which due to the obtained experience changes happen in the pupil's attitude towards the surrounding world, towards themselves, as well as changes in the behaviour (Coffield, 2004; Deimante- Hartmane,

2013; Petty, 2004; Scharle, Szabo, 2002), then the outcomes of the empirical research enable us to conclude that a minimum result and partial satisfaction towards learning are in the cases when the pupils themselves do not have to participate actively in the process. Only then, if one succeeds in opening the pupil's mind and creating curiosity in the pupil, understanding of the purpose of the information to be acquired happens. The information, which has been structured and organized by the pupil, can be preserved in the long-term memory and applied later in other situations, but this skill can be acquired only through an active participation (Petty, 2004). Observation of the pedagogical process confirms fully that constructivism is important in the study process, i.e. consciously created conditions which allow them to perceive and find out the regularities between subjects and phenomena on the basis of the previously acquired experience. The content offered in a fragmentary way does not promote the pupil's learning, they are not able to see the original notion about subject or phenomenon to be cognized, extend it and acquire the necessary knowledge about it and also work consciously with other cognitive objects of similar or the same purpose (Fullan, Langworthy, 2013; Bruce, Calhoun, 2010).

Observing the learning process, in which pupils do particular assignments in Latvian, English and mathematics lessons, it was revealed in all situations, in which the tasks follow one another and the performance terms are formulated so that one stage of work follows the other one, the pupils' cognitive activity is much higher than if a pupil is forced to do the work with interruptions, without seeing the link between the previously completed work.

It is important for a pupil to go through all levels of the cognitive activity during a shorter or longer period of time – the level of perception, comprehension, usage and evaluation (Bloom, 1956). A purposeful cognitive activity is not possible without the research object, which both has to be found and selected among other objects, coherence among them have to be looked for, similarities have to be found, associations and links between the known and unknown have to be made. The pupil needs activity both with particular subjects and abstract phenomena, and such experiments for a differentiated content acquisition due to which they can self-ascertain, feel the need for independence.

Thirty-two percent of the respondents' reveal that they like such assignments which require to set assumptions, observe phenomena or objects, experiment with them and describe them. Pupils also approve of tasks in which different types of perception and memory have been taken into account, for then the pupil can apply their individual learning style and do the task without being afraid to miss something, do something too fast without focusing on the matter. Simultaneously the issue of learning culture appears into practice, too, whose quality is inherent in the relations among all subjects involved in it, quality of cooperation and attitude towards each other and the work to be performed. The analysis of the practice enables us to conclude that the quality of learning culture in all cases correlates with the teacher's professionalism to create such conditions that every pupil is able to express themselves, different opinions are respected, the pupil is used to express arguments based only on facts, there are clear work regulations and assessment criteria of the outcomes, also it is possible to obtain mutual help, in necessary.

The modern pupil has got a distinct individual learning pace and experience, impatience and need for a tangible outcome during a short period of time, opportunity to see the purpose of the work, system, as well as security that each of their achievements will be noticed. At the same time the pupil needs a chance to practice and repeat, apply the familiar techniques to acquire a new experience, thus creating a better physiological comfort and sense of security. The pupil is ready to face harder tasks in all ages, set assumptions themselves and check them, if only they are provided with an opportunity to do it, knowing clear work regulations and applying such techniques which have already been acquired or are being acquired during the learning process in cooperation with the pupils and teacher (Purēns, 2015; Абрамова, 2002).

Allowing the pupil work with the study content for a sufficiently long time and on regular basis, which is contextually and emotionally important for them, a chance is given to get to know it more profoundly. It enables them to understand better the content to be acquired, experience inwardly and establish more sustainable knowledge and skills, also activate the development of the creative work experience.

Emotional associations are more important for brain than the cognitive comprehension. Information with a strong attraction or feelings is preserved in the long-term memory (Hattie, 2009; Smits, 2000). When comparing with the traditional B. Bloom's taxonomy (Bloom, 1956), in which there are such hierarchic stages as information perception, comprehension and application, in the constructive learning process the first stage is promotion of the previous experience, its comparison with the new revelations. The analysis

and synthesis of the previously acquired and newly acquired experience facilitate formation of integrated knowledge. If the beginning of new knowledge acquisition starts with forecasting, a hypothetic assumption, then the psychomotor activity becomes active, such thinking processes as interpretation, comparison, generalization and classification. During the learning process the pupil obtains experience not only on the cognitive level, but also on the emotional and social level. Such activities start changing the very doer, since the creative thinking, combined with other thinking operations, change also the attitude to work, to themselves and the surrounding environment (Marzano, 2000).

Problems more often come up in practice if the neuroscience cognitions about the fact that every human learns differently, that the world discovery and memorization of particular facts are related to the attitude to learning are not taken into account (Grundmane, 2005; Hattie, 2009). During the learning process it is important to take into account every individual's personality, its advantages. The pupils' learning process and outcomes are also influenced by such factors of the surrounding environment as sound, light, temperature and design, level of emotionality, social needs, a special need to cooperate during the learning process and also the physical needs (Dunn, Dunn, 1978). To promote a balanced activity of both cerebral hemispheres, it is important for the pupil, on the one hand, to think, but on the other hand, to find balance between cognitive and emotional area (Fišers, 2005; Smits, 2000). The increase of learning activity in 67 % of the observed pupils can be explained with the study content offered in an exciting form, e.g. problem situations, which have to be solved in compliance with their experience, crosswords, which give a chance to look for facts themselves, applying different resources and thus finding answers to the questions. Pupils think the least useful tasks are the ones which require to rewrite a text in order underline or circle something there afterwards, 80 % of the respondents admit that they are the most boring exercises, and pretty often are not done on purpose.

It cannot be denied that the emotional balance also influences the cognitive processes. Working independently or cooperating, a pupil can also become a source of information to another pupil. The pupil can acquire such skills as the skill to correct mistakes, try again, look for the most essential, compare it with others, find the common and different, justify own thoughts. The pupil moves from the convergent thinking to the divergent thinking in which the previously only one opinion is only one of the opinions (Anspoka, 2014).

One of the most important issues is the individual's responsibility for their learning, because only then a purposeful attitude to learning as a process and responsibility for learning as a result appear (Coffield, 2004). It is important also for the pupil to know themselves and to know how they learn, how to perceive information better and memorize it. It helps to control the learning process. This is an extremely important aspect, as one of the most essential study stages is to acquire the skill to be independent – a personality who is responsible for their learning. It has to become a part of the study process, which enables the individual to obtain the continuously changing knowledge also without any help from others. If the pupil is aware and understands how it is better for them to study, the confidence about the ability to learn independently increases, the need for control from the teachers' side decreases and less is expected the opinion whether the result complies with the previously stated sample and regulations. The teacher's work is to lead the pupil, who is responsible for their learning themselves (Hattie, 2009; Scharle, Szabo, 2002).

Another problem to be solved in practice is the teacher's too rigorous control and the need to be the situation controller who says what is right and what is wrong, without giving the pupil a chance to make a mistake and look for its solution.

Out of 26 surveyed elementary school and secondary school different subject teachers 71.2 % of the teachers think they understand what it means to manage the pupil's learning process, how to implement it in practice. At the same time, observing 13 previously surveyed teachers' classes, two controversies were noticed. One – the teacher theoretically is competent to speak about learning directed towards the pupil's activity, critically thinking personality's development based on constructivism theories, helping the pupil to integrate the known with the newly-obtained knowledge, and learning in a meaningful context, and not to apply an artificially created or fragmented study content. At the same time when analysing the content and methods applied in the lesson for its acquisition and finding out which study paradigm it is inherent in, the second controversy appears – teachers do know what and how it has to be done, but in practice the opposite can be seen. It also complies with the findings in previous researches, that in school practice the

explanatory illustrative work developed in the previous centuries still dominates, in which on average 70-75 % of the study time the pupil spends perceiving the information, and only 30-25 % of the time during the learning process is planned for information analysis, comparison, specifying and systematization. Acquisition of facts without any critical assessment is stimulated too often. The pupil mostly listens/reads and perceives the information, understands, comprehends and applies into practice according to the given template. In 89.9 % of the cases only the subject content planning dominates, but its learning content is not planned at all or just episodically, i.e. methods and techniques for the content acquisition according to every individual's abilities and needs (Anspoka, 2014).

As learning does not mean acquisition of information and facts as much as possible, but just the opposite - doing it more profoundly, understanding the essence of everything, as profoundly as possible, and creating an analytically assessing attitude to it; it is important the pupil has enough time to focus on the text, tasks and it is possible to do them without being in a hurry. It is important that since the very beginning of school time learning becomes as a meaningful activity for the pupil, in which there are as few as possible negative experiences in order the learning process is not be associated with something incomprehensible and impossible. Only success, even the smallest, gives the joy of victory, but losses – experiences.

To promote the pupil's skill to construct new knowledge, the study text is an important issue in the study process as the dominating didactic and also linguistic unit. The pupil is interested not only in its content, but also in the structure and application of language resources. The learning outcomes of 56 % of the observed pupils enable us to conclude that learning is encumbered by the language in which the terms or text of the exercises are explained with what the pupil has to work independently. This confirms the need for the pupil not to acquire an isolated content of the subject, but do it in an integrated way or in a way that the set of skills and attitudes are acquired in a unity and wholeness, which they need personally and in different situations for a socially important activity.

The content of different education areas and its acquisition methods, assessment criteria and other important components of the learning process have to be mutually arranged so that the pupil could transfer the previously acquired knowledge and skills to other situations or apply them in acquisition of new knowledge and skills, as well as in the development of a meaningful attitude towards both themselves and the surrounding world. This approach helps to eliminate duplication, unnecessary repetition or incoherence in problem solving of the content, methodology and other issues, and enables us to provide the most important basic principles of didactics – the principle of sequence, principle of the theory and practice unity, and also the sustainability principle of the study outcomes.

## Conclusions

- In school practice 70-75 % of the learning process is understood as a transfer of qualitative information in a ready-made way, and it is vindicated with in the society existing the so called sustainable collective memory about school as a place in which they know best what is needed and all possible means are applied to achieve the goal. In such learning process the convergent thinking inherent in behaviourism dominates, the pupils' enthusiasm is limited to an active action in order to receive praise and a good evaluation for the right answer.
- In the context of the society's development the teacher has got challenges, on the one hand, searches for new approaches, methods are required, but also critical assessment of the historical heritage. Introducing innovative solutions, it is important not to get confused and understand that mistakes can be made also nowadays, if it is done without a theoretical or empirical justification, relying only on emotional and other only partly justified considerations.
- Due to the increase of information load and its dissemination speed, achievements of technologies, globalization processes in society, more and more the knowledge about facts is not necessary, but rather the skill to obtain the facts, apply them when forming own statements and opinions. Thus constructivism is important in the study process, i.e. consciously created conditions which enable us to perceive and find our regularities between subjects and phenomena on the basis of the previously acquired experience.
- In the learning process all components of the learning process are important – the goal of studies, content of studies, methodology for its acquisition, evaluation system of the outcomes, also

every pupil's individual personalities, their advantages, such conditions of the surrounding world as sound, light, temperature and design, level of emotionality and social needs.

- It is important for the pupil to know themselves and know how they learn, how to perceive the information and memorize it better. It helps to control the study process. If the pupil is aware and understands how it is better to learn, the confidence about the ability to learn independently increases, the need for control from the teachers' side decreases and the evaluation whether the result complies with a certain template and regulations are not expected so often.
- In order the pupil could be able to acquire both the content of the subject and skill to learn, in the modern pedagogical process the issue about the integration of the subject content with its learning content is important. As the learning skill does not appear by itself, then according to the research outcomes in the learning process there cannot be situations in which the pupil is forced to learn without knowing how to do it better and more correctly.
- Learning culture influences learning outcomes. The quality of learning culture in all cases correlates with the teacher's professionalism to create conditions to express different opinions, respect them, express arguments based only on facts, there are clear work regulations and criteria for the result assessment, also an opportunity to receive mutual help.
- In the modern learning process a need appears for the content of varied education areas and its acquisition methodology, mutual correlation of assessment criteria and other important components of the learning process so that the pupil can transfer the previously acquired knowledge and skills to other situations or apply them in acquisition of new knowledge and skills, also in formation of a meaningful attitude towards both themselves and the surrounding world. This approach helps to eliminate unnecessary duplication or incoherence of the study content, and also provide the most important principles of didactics – the principle of sequence, principle of the theory and practice unity, as well as the sustainability principle of the learning outcomes.

## Bibliography

1. Anspoka Z. (2014). Tradicionālais un inovatīvais mūsdienīgu pedagoģiskajā procesā (Traditional and Innovative in the Pedagogical Process Nowadays: Some Problems and Solutions). Starptautiskās zinātniskās konferences rakstu krājumā *Sabiedrība. Integrācija. Izglītība*, 1. daļa. Rēzekne: Rēzeknes Augstskola, 347 – 355 lpp. (in Latvian)
2. Bloom B.S. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook I, Cognitive Domain*. New York: Longmans, Green.
3. Bruce J. B., Calhoun, E., Hopkins D. (2010). *Models of Learning Tools for Teaching*. (3rd ed.). Buckingham: Open University Press.
4. Bruner J.S. (2006). *In Search of Pedagogy: The Selected Works of J. S. Bruner*. Vol. 1. London: Routledge.
5. Coffield F. (2004). *Learning Styles and Pedagogy in Post-16 Learning. A Systematic and Critical Review*. London: Learning and Skills Research Centre.
6. Deimante-Hartmane D. (2013). *Vidusskolas vecāko klašu skolēnu vispārējo patstāvīgās mācīšanās prasmju pilnveide angļu valodas mācību procesā (Development of Students' Independent Study Skills in English Classes of Upper-Secondary School)*. Promocijas darbs zinātnu doktora grāda iegūšanai skolas pedagoģijas apakšnozarē. (Doctoral Thesis in School Pedagogy). Liepāja: Liepājas Universitāte. (in Latvian)
7. Dunn R., Dunn K. (1978). *Teaching Students through their Individual Learning Styles. A Practical Approach*. Reston: VA.
8. Fišers R. (2005). *Mācīsim bērniem domāt. (Lets us Teach Children to Think)*. Rīga: RaKa. (in Latvian)
9. Fullan M., Langworthy M. (2013). *Towards a New End. New Pedagogies for Deep Learning*. Seattle, Washington, USA: Collaborative Impact. [online] [20.02.2016.] Available at [www.newpedagogies.nl/images/towards\\_a\\_new\\_end.pdf](http://www.newpedagogies.nl/images/towards_a_new_end.pdf)
10. Grundmane Dz. (2005). *Mācīšanās pieredzes pilnveide darbības pētījumā. (Development of Learning Experience in Action Research)*. Promocijas darba kopsavilkums. (A Summary Doctoral Thesis). Rīga: LU. (in Latvian)
11. Hattie J.A.C. (2009). *Visible Learning. A Synthesis of over 800 Meta-Analyses Relating to Achievement*. London: Routledge.

12. Maslo I. (1995). *Skolas pedagogiskā procesa diferenciācija un individualizācija (Differentiation and Individualization of School Pedagogy Process)*. Rīga: Raka. (in Latvian)
13. Marzano R.J. (2000). *Designing a New Taxonomy of Educational Objectives*. Thousand Oaks, CA: Corvin Press.
14. Petty G. (2004). *Teaching Today: A Practical Guide*. UK: Nelson Thornes Ltd.
15. Purēns V. (2015). *Pusaudžu izziņas intereses veidošanās dialogiskajā vēstures mācību procesā. (The Development of the Cognitive Interests of Teenagers in Dialogical Learning Process of History)*. Promocijas darba kopsavilkums (A Summary of Doctoral Thesis). Rīga: RPIVA. (in Latvian)
16. Sawyer R.K. (2006). *The Cambridge handbook of the learning sciences*. New York: Cambridge University Press.
17. Scharle A., Szabo A. (2002). *Learner Autonomy: A Guide to Developing Learner Responsibility*. New York: Cambridge University Press.
18. Smits E. (2000). *Paātrināta mācīšanās klasē (Accelerated Learning in the Classroom)*. Rīga: Pētergailis. (in Latvian)
19. Абрамова Г.С. (2002). *Возрастная психология (Developmental Psychology)*. Екатеринбург: Деловая книга. (in Russian)

## The Modern Teacher's Career

Regina Baltusite<sup>1</sup> Dr.paed.; Irena Katane<sup>2</sup> Dr.paed.

Latvia University of Agriculture, Latvia<sup>1;2</sup>

[rila@inbox.lv](mailto:rila@inbox.lv)<sup>1</sup>; [irena.katane@inbox.lv](mailto:irena.katane@inbox.lv)<sup>2</sup>

**Abstract:** An individual fulfils his or her mission within the context of career, which encompasses all human life. The educator's profession is one of the most ancient professions in the world. It is not only a profession, but also a mission of an individual who has chosen it. The main content of it consists of the relations with people. The educator's profession is based on the insight into the society and individual's goals in life and the progress of other people's attempts to achieve those goals. The teacher's role for the formation of society has been emphasized by many scientists of pedagogy and psychology. It is necessary to change the educational system in order to implement the future visions. At the end of the 20th century we could observe the tendency for the synthesis of sciences. The following concepts were introduced in the education: Human Ecology, Educational Ecology, Heart Education. The age of intellect indirectly facilitated the understanding of the mankind that the intellect itself has no value. It is necessary to have something else. Heart-mind becomes of great importance. It is a new insight into the world and an individual and new attitude towards the ongoing processes, the gradual return to the eternal values. However, this process is lasting, and the mankind already now shall re-evaluate its relations with both nature and people. The aim of the paper is to highlight the changes in the modern teacher's career. Nowadays the teacher's activities are influenced by the processes of changes, which occur in society and education. The authors of the report have evaluated theoretical conclusions and research results on the advantages and disadvantages of a teacher's career, the successfulness of a teacher's career; the author has searched for the solution how to overcome the obstructive factors.

**Key words:** teacher profession, mission, meaning of life, career, university education.

### Introduction

The changes of educational paradigms had also a crucial effect on a teacher's activities. The emphasis is placed on the interdisciplinarity, the skill to work with information, to combine studies and work, to be aware of the unity of surrounding world; to accept the other person like he or she is, and to return to the most important values – love, peace, collaboration, harmony with oneself and the surrounding world; to be aware of choice opportunities and to assume responsibility for one's own life, using the offered opportunities for the development of one's own talents, to be ready for the changes, changing oneself and changing one's environment, and at the same time to think about the sustainability (Briede, Pēks, 2011; Capra, 1996; Katane, 2005; Katane, 2007; Rudzāte, 2013; Salite, 2000; Vilsons, 2012).

Modern educational paradigm emphasizes the importance of lifelong and lifewide learning, collaboration, gaining a success, improving of study environment, partnership for the teacher's activities. The new demands for the education make the teachers to change, but the process is not instantaneous. It is important for the teacher to learn to live and work in the multicultural environment, to be mobile for the labour market all his or her life, implementing his or her best qualities in the professional activities. Alongside with the changes in situation, the pedagogical activities become more and more complex. It is due to the requirements set regarding the quality of education. It manifests through the setting of new social and pedagogical tasks, the increase of the number of functions, the increase of the content of activities.

During the last years, the scientific capacity experience rapid growth, which envisages inclusion of the fundamental knowledge, working with a considerable flow of information, the increase of the level of preparedness into the structure of professional activities (Колесникова, 2007). The insight into the concept of career also changed in the course of time. It does not relate only to work anymore, but also to the family, free time, citizenship and spirituality (Karjeras attīstības ..., 2008). Within the present context of career, work is one of its spheres, between which there are no explicit borders. How to harmonize all changes within the process of own development – this is the main question the answers to which are searched by both teachers and the representatives of other professions. It determines the topicality of research performed on a modern teacher's career. The aim of the paper is to highlight the changes in the modern teacher's career.

## Methodology

In order to achieve the set goal (the changes in the modern teacher's career) there were the following research methods selected: 1) evaluation of various authors' theoretical conclusions and documents; 2) reflection of personal experience; 3) an interview; 4) data processing according to percentage.

There were answers, given by 100 respondents, evaluated within the research – interviews of 50 teachers from different regions of Latvia and answers 50 students given to the question – what would they do, if they would be the Minister for Education. The teachers had to answer several questions, but within the research performed there were 4 answers evaluated (advantages of a teacher's profession; the criteria for a teacher's success; what would a teacher do as the Minister for Education; what would a student do as the Minister for Education), which are related to the theme of the report.

The author of the report uses aggregated statistical data from the home page of the Ministry of Education and Science. The data are on the teachers of comprehensive day schools and encompass the information for the study-years 2010/11 - 2015/2016 (Publikācijas un statistika, 2017). There have been used also the results of research performed in the world on a teacher's profession.

## Results and discussion

A teacher's profession is unusual. It encompasses three main characteristics - humanistic, collective and creative (Сластенин, Исаев, 2007). Through it there are two social functions implemented – adaptive (a pupil's adaptation to particular requirements set by the socio-cultural situation) and humanistic (the development of a personality's creative individuality). Therefore, the teacher prepares his or her pupils for the needs of present moment, for the particular demand of the society. But the teacher also brings and preserves culture, which is a factor exceeding the boundaries of time (Amonašvili, 2007b, 2011; Сластенин, Исаев, 2007). On the basis of the goal to develop a personality as a synthesis of the riches of human culture, a teacher works for the future, because the teachers today shall facilitate the development of such their pupils' qualities, which will be necessary in future (Amonašvili, 2007a; Rudzāte, 2013; Подласый, 2010; Сельчёнок, Сельчёнок, 1996). These are unusual conditions under which the teacher works. Therefore, it was important to study the strengths of a teacher's profession - what are the advantages of a teacher's profession and what are the success criteria.

At first there were evaluated the advantages of a teacher's profession (Table 1). As the main advantage all respondents indicated self-development (100 %). It means that a teacher who works at school does not stop after he or she has achieved something. The teacher progresses forward constantly in order to be informed about the latest changes and achievements. The teachers find that an important advantage of the profession is an opportunity to work with the youth (100 %). Both indicators are interrelated. If the teacher likes to work with young people, he or she will try to continue his or her own development in order to preserve this link. A new generation joins the society, and this new generation considerably differs from the previous ones (Amonašvili, 2007a; Folkmane, 1995; Henkampa, 2006; Подласый, 2010). You cannot work with these pupils applying old, conventional methods. The transition takes place regarding the world outlook – from the systems logical “*Why?*” to the systems meaning “*For what reason?*” (Чернозёмова, 2007). The representatives of new generation have good knowledge of information technologies; they understand a teacher's authority differently; they have more opportunities to act, uniting the vertical and horizontal levels; they are more sensitive. This demands that the teachers also change themselves and their professional activities radically. In order a teacher would be competent to work under such conditions, he or she must be ready to see “beyond the horizon” (Подласый, 2010; Сельчёнок, Сельчёнок, 1996).

Therefore 86 % of respondents emphasize the creativity of work as an advantage of profession (Table 1). The creativity has been emphasized as the characterization of the 21<sup>st</sup> century teacher (Adey, Hewitt, 2004; Amonašvili, 2011; Briede, Pēks, 2011; DuNeen, 2013; Колесникова, 2007; Шецко, 2009). Sixty-six percent of teachers find that an advantage of the profession is the satisfaction they feel for their work, irrespective of the fact that the feedback is sometimes received only years later, when the pupils have graduated school. The peculiarity of a teacher's profession is also the vacation in summer. During this period the teachers have an opportunity to renew their physical, intellectual and mental energy; to deal with the affairs related to different spheres of their lives. Forty-eight percent of teachers emphasize the exchange of energy (all above mentioned types) between the participants of study process as an essential



factor. Because within this process the teacher is not only a giver, but also a recipient, i.e. mutual exchange takes place. In this case the symptoms of burnout syndrome appear slower. For 46 % it is important to learn from pupils.

Table 1

### Advantages of a Teacher's Profession and the Success Criteria

Advantages of a teacher's profession		Success Criteria	
Indicator	Total (%)	Indicator	Total (%)
Self-development	50 (100 %)	Self-development	50 (100 %)
Working with the youth	50 (100 %)	Calling	48 (96 %)
Creative work	43 (86 %)	Collaboration	46 (92 %)
Satisfaction	33 (66 %)	Fairness and tolerance	42 (84 %)
Vacation in summer	28 (56 %)	Good knowledge of subject	41 (82 %)
Exchange of energy	24 (48 %)	Self-reflection	41 (82 %)
Work and remuneration	24 (48 %)	Optimism	40 (80 %)
An opportunity to learn from pupils	23 (46 %)	Clear aims	38 (76 %)

Success is the coincidence of circumstances created by an individual taking several right decisions (Deviņas burvju ..., 2013). This concerns also to a teacher's activities. The success achieved in the activities is one of the main indicators of professionalism (Шейко, 2009). The next question, to which the respondents gave answers, was about the success criteria of a teacher's activity. Self-development (100 %) is not only an advantage of a teacher's profession, but also an indicator of success. The teacher's profession is deemed to be a mission of a human life. The calling (96 %) is emphasized as a positive indicator of the professional activities. The significant criterion of success is an ability to collaborate (92 %) (DuNeen, 2013). Fairness and tolerance (84 %) are essential professional characteristics of a teacher. Eighty-two percent of respondents emphasize the good knowledge of the subject and self-reflection. A teacher must be a dreamer, a realist, a critic and an observer with an optimistic point of view regarding life (80 %) and clear goals (76 %) (Table 1).

Changes in the educational system can start in both ways – from below upwards and from above downwards. All respondents were asked a question – What would they do, if they would be the Minister for Education (Table 3). The teachers (78 %) and the students (96 %) first of all mentioned the increase of a teacher's remuneration. It is a topical issue, because the data of the Ministry of Education and Science (Publikācijas un statistika, 2017) show that in the study - year 2014/2015: 9,896 teachers worked 1.0 – 1.49 teaching loads (in 2013/2014 - 9,136 teachers); 9,793 teachers worked 1.50 - 2.0 teaching loads (in 2013/2014 – 1,0319 teachers) and 223 teachers worked more 2.0 teaching loads (in 2013/2014 – 426 teachers). Thus, 19,912 teachers out of 28,545 work more than one workload. If a teacher would receive sufficient remuneration for a workload, then the teachers would not strive to ensure higher salary by working more than a one teaching load. Thus there would be more opportunity for new teachers to enter the labour market. There might more new teachers, but the experience shows that the young people not always can find job. In the study-year 2014/2015 377 new teachers started to work at schools (in 2013/2014 – 341) (Publikācijas un statistika, 2017). In some subjects there is a workload only for one teacher in one school (Home Economics and Technologies, Visual Art, Social Sciences, Music, Physics, Chemistry, Natural Sciences). At present, the winners are the teachers who can teach two or more subjects. The higher education institution also shall think about the supply of the programmes by acquiring which the prospective teacher could deliver the lessons at school and the classes of interest education (in our case – on the basis of existing resources, these might be art hobby groups and facultatives, career education, a preschool teacher). This increases the student's opportunity to find job and improves his or her competences. Thus a teacher ensures sufficient workload for himself or herself in order he or she could receive the appropriate remuneration for the qualitative work.

Both categories of respondents indicated the preservation of rural schools (34 %). A rural school is not only an educational establishment, but also a culture centre in the particular place. This, in its turn, is connected to the viability of rural environment. For the teachers it is important to have stability in the

educational system (58 %) and to eliminate bureaucracy (56 %). Twenty-six percent of teachers find that it is necessary to raise the prestige of a teacher's profession in the society. The flexibility in the study process is topical for teachers (22 %). Some respondents find that it is necessary to improve the system for the evaluation of pupils' study achievements (16 %). The authors of the report might agree to this teacher's idea. Both issues are interrelated. The flexibility in the study process depends on the teacher's approach. The evaluation system is one of the aspects. Instead of the wording "pass" or "fail", the teacher in his or her notes may use assessment in balls, but it is a double registration of results. In the e – register – in conformity with determined requirements, but in the teacher's personal notes – in another way. An assistant to the teacher might be helpful for the pupils and teachers (16 %), because schools implement several educational programmes or there is a great number of pupils in the forms (more than 20 pupils in a form) (Table 3). A new module of teachers' remuneration envisages that higher salary would be received by teachers who would work with larger forms (30 - 32 pupils). In this case a teacher not always can explain the study material in a way that all pupils would understand it (Table 3). If there would be no assistant to the teacher or the forms would not be divided into groups, the number of "problem-pupils" would increase rapidly. Taking into account the peculiarities of modern new generation, the optimum number of pupils in a form might be up to 20 pupils.

For the students free higher education is still topical (94 %). The pedagogical work experience of the authors of report proves that higher education is a value for the graduates of schools. There are professions identified that are not demanded in the labour market but may become a bridge between some spheres and future education. Higher education nowadays is not only the acquisition of a profession, but also the development of a personality. Irrespective of the opposition that there are specialities at the higher education institutions, which are not demanded in the labour market, but which are necessary for individual students as a bridge for gaining an insight into some phenomenon. Because education has three aspects: 1) it is related to knowledge on the external world, i.e. it is the accumulation of secular and scientific information; 2) transformation of a human being, i.e. development of the character; 3) learning of the human being himself, and the best object to learn about – a Human Being (Rudzāte, 2014). At some stage of an individual's lifetime it implements all three aspects, but at another stage – only one or two. In the scientists' works it is emphasized that a teacher shall have the holistic insight into the subject, but it can be formed only, if a teacher has developed a whole picture of the world outlook. Famous individuals Leonardo da Vinci, Gottfried Wilhelm Leibniz, Albert Einstein were people of multiple interests. Everybody possesses such multiple interests or the holistic world outlook, when he or she enters the world (Amonašvili, 2007a; Capra, 1996; Robertsons, 2011; Rudzāte, 2013; Vilsons, 2012). Such understanding may be facilitated through interdisciplinary learning or studies. In order to implement the future visions, it is necessary to have alterations in the educational system. At the end of the 20<sup>th</sup> century there emerged a tendency towards the synthesis of sciences. The following concepts gradually emerged in the education: *Human Ecology*, *Educational Ecology*, *Heart Education* (Amonašvili, 2007b, 2010; Bronfenbrenner, 1996; Katane, 2005; Katane, 2007; Katane, Pēks, 2006; Sterling, 2001; Сельчѐнок, Сельчѐнок, 1996). The age of intellect (Amonašvili, 2007a, 2007b, 2010) indirectly facilitated the understanding of the mankind that the intellect itself has no value. There is something else needed. *The Heart Mind* becomes important. It is new insight into the world and a human being and attitude towards the ongoing processes, gradual return to the eternal values. However, this process, according to its essence, is permanent, and the mankind already now shall reconsider its relations with nature, people and itself (Amonašvili 2007a, Briede, Pēks, 2011; Capra, 1996; Rudzāte, 2014; Salite, 2000; Vilsons, 2012). Seventy-four percent of students find that there is no balance between the pupils' rights and responsibilities. More attention is paid to the pupils' rights, less – to their responsibilities. The rights are emphasized very often, whereas responsibilities are discussed less. It would be important to review the present Education Law in relation to the rights and responsibilities of the participants of study process, taking into consideration the children's rights and responsibilities within the context of humanistic paradigm. The respondents-students (52 %) find that there should be changed the teachers' retirement age. In the study-year 2014/2015 at the comprehensive day schools there were employed 7,473 (in the study-year 2013/2014 – 7,290) teachers at the age of 55 to 65, and older, and this number was out of 28,545 teachers (Publikācijas un statistika, 2017). The progress of information technologies, on the one hand, makes the teacher's work easier, on the other hand – there are less opportunities of direct communication. In order the teacher would not burnout and maintains the quality of the work, the content and progress of each lesson should be well-considered, because the prevailing age groups are from 40 to 49 years of age, from 50 to 59 years of age, from 60 to

65 years of age and older (Table 2). The teachers' average age would change, if the state would include teachers in the professions, which permit a person to retire, for example, at the age of 55, because at present, there are teachers employed at schools who started their professional career early and became the hostages of the state pension system. Working with people requires considerable endurance, balance, keeping up with the innovations of one's professional sphere. These people might be mentors for the new teachers and work a certain load in addition to their pension. Thus the workplaces for the new teachers would become vacant, who, being unable to a workplace at school, move into another sphere or study in a Master programme, leave for foreign countries. It is proved by the experience of the authors of the report.

In 2012 the Internet portal *Career Bliss* performed survey of 65,000 respondents, who represented different professions. A conclusion was drawn that the teacher's profession is a depressive profession alongside with the professions of the assistants to advocates, clerks, and specialists of customer service, nurses and social workers (Profesijas, kas ..., 2014).

Table 2

**Division of the Teachers of Comprehensive Day Schools in the Republic of Latvia according to Their Age, study-years 2010/2011 - 2015/2016 (Publikācijas un statistika, 2017)**

Study year	24 years of age and younger	25-29 years of age	30-34 years of age	35-39 years of age	40-44 years of age	45-49 years of age	50-54 years of age	55-59 years of age	60-64 years of age	65 years of age and older
2015/16	649	1,827	1,928	2,915	4,111	4,713	4,792	4,290	2,431	1,090
2014/15	551	1,678	1,998	3,016	4,331	4,625	4,873	4,187	2,345	941
2013/14	537	1,628	1,959	3,106	4,379	4,654	4,847	4,107	2,254	929
2012/13	799	1,509	2,241	3,320	4,449	4,620	4,747	3,808	1,778	950
2011/12	693	1,420	2,321	3,391	4,585	4,655	4,646	3,716	1,642	967
2010/11	656	1,506	2,451	3,679	4,512	4,724	4,565	3,500	1,403	914

Research company *Gallup* in its study performed in 2011 *Well-being Index* drew a conclusion that the following groups are more affected by depression: people employed in professions of low salaries, the unemployed or those employees who work a half-load, but would like to have a full-time job, as well as women at the age 53 to 64 (Profesijas, kas ..., 2014). At the Latvian comprehensive schools in the study-year 2013/2014 there were 3,344 men and 25,056 women employed (Publikācijas un statistika, 2017). It shows the emergence of the risk factors of depression. The research performed at the European schools, including 10 schools in Latvia, on the teachers' stress proves that the teachers, in comparison to the representatives of other professions, have the highest level of work-related stress, which affects the teachers' state of health and feeling of comfort more and more. In its turn, the level of stress at the workplace at schools in Latvia, Lithuania and Estonia is one of the highest in Europe (Teachers' Work-Related ..., 2011). The human resources specialists emphasize that depression is facilitated by unloved work, the work which is not respected by society and the work with a high stress level (Profesijas, kas ..., 2014). According to the students' point of view (52 %), the state budget shall be used to provide pupils with study aids (Table 3). The purchase of study aids requests a considerable material contribution from the parents. There shall be considered an issue regarding the publication of e-study materials. This would diminish the weight of pupils' bags. As well as it is necessary to consider the content of study aids, in order the content would be understood not only by parents (and sometimes even the parents cannot understand it), but also the pupils themselves. This, in its turn, would arouse interest in the pupils, this would facilitate the interest about the subject. The most rapid development of pupils' interest takes place during the school period. Therefore, it is necessary to pay attention to the interest education (34 %). There shall be an opportunity to acquire general education not only at public schools, but also at alternative schools (22 %), which should be established (Table 3). Twenty percent of teachers stated that they would not like to be the Minister for Education. The changes in education may be facilitated not only from above, but also from below.

Table 3

**Changes in the Educational System**

<b>A teacher as the Minister for Education</b>		<b>A student as the Minister for Education</b>	
<b>Indicator</b>	<b>Total (%)</b>	<b>Indicator</b>	<b>Total (%)</b>
Increase of remuneration	39 (78 %)	Increase of remuneration	48 (96 %)
Stability in the educational system	29 (58 %)	Free higher education	47(94 %)
Eliminating of bureaucracy	28 (56 %)	Pupils' responsibilities and rights	37 (74 %)
Preservation of rural schools	17 (34 %)	A teacher's retirement age	26 (52 %)
Facilitation of the professional prestige	13 (26 %)	Teaching aids	26 (52 %)
Flexibility in the study process	11 (22 %)	Support to interest education	17 (34 %)
Alteration of evaluation system	8 (16 %)	Preservation of rural schools	17 (34 %)
Assistant to the teacher	8 (16 %)	Alternative educational institutions	11 (22 %)

Alongside with the content of a teacher's activities, the insight into the concept of the career changed, too. It is very successfully characterized using metaphors (1950 – a train running on the rails; 1970 - a bus that can change its route a bit, but is limited by the schedule of the arrival at the final destination; the 21<sup>st</sup> century – a land-rover driven by the individual himself or herself. In this case we can speak of an open career in relation to the impact of systems theory on the development of sciences (Patton, McMahon, 2006).

I. Boitmane (Boitmane, 2009), the Latvian specialist of human resources, emphasizes that the main cornerstones of the career are simple things and tasks that shall be accomplished in the life. Therefore it is important to identify what is the main issue in the life and what proves the welfare – thus, ensuring of life quality is important.

According to the Russian management specialist O. Dolgorukova (Долгорукова, 2006), a career is an individual's conscious attitude towards the personal progress on the masterhood stairs in the chosen sphere of activities, which manifests through: 1) the individual's judgements about own future and past; 2) the assessment of one's own potential opportunities; 3) the moral substantiation and evaluation of one's own achievements; 4) the real conduct of an individual. The scientist views a career as an individual's spiritual practice. It is important that the chosen profession corresponds to the personality's values (Patton, McMahon, 2006; Двенадцать жизненных ..., 2012; Долгорукова, 2006). The peculiarity of the 21<sup>st</sup> century is that there is a discussion on the mission and meaning of life of every human being.

An issue on one's own place in the world and the meaning of life is topical for everybody, who comes to the planet Earth. We want to live the life of full value and to understand, why we are in a particular place and time. On this complicated path, the work of an individual with its values is important – this helps to discover one's calling. Everybody lives in two realities – in the macrocosm and in the microcosm. The macrocosm is the Universe, but the microcosm – the little Universe – an individual, where the centre is awareness. The same laws are in force and the same processes take place in both the microcosm and he macrocosm. An individual lives in two worlds – in Heaven and on the Earth or in the vertical and horizontal planes (Ступинене, 2006).

An individual fulfils his or her mission in the context of the career, which encompasses all human life (Boitmane, 2009; Karjeras attīstības ..., 2008; Patton, McMahon, 2006; Долгорукова, 2006). An individual realizes himself or herself through work, family, free time, citizenship and spirituality. The spheres cannot be clearly distinguished by creating borders, because they are overlapped by each other. Especially it is true regarding spirituality that fills all other spheres.

The concepts of mission and meaning of life are interrelated. The authors of the report, having evaluated different sources and conclusions drawn by various authors (Блект, 2012; Жалевич, 2010; Секлитова, Стрельникова, 2013), concluded that they are very close according to the meaning. In their turn, the

values shall be analysed within the context of the meaning of life and the mission. I. Safronov (Сафронов, 2012) points out some definitions of a mission:

- a personal mission - the most unique and greatest which could be given to people, left behind oneself;
- a mission is an assignment, the central and the highest meaning of an individual's life;
- an individual's mission is a task (or a set of tasks) for the fulfilment of which he or she had been sent to the Earth (was born).

Having summarized the definitions given by several scientists (Петровский, Ярошевский, 1998; Некрасова, Некрасов 2008; Сафронов. 2012), the authors draw a conclusion that the mission of an individual is a goal with which his or her soul comes to this world. According to the authors' conclusions, our mission is hidden from us, and our goal is to solve this mystery, to find our mission and to implement it in reality. On the grounds of several information sources and the reflection of personal experience, it is possible to agree to the above mentioned.

In one of the definitions the mission has been determined as the main meaning of life (Сафронов. 2012). To this meaning an individual devotes up his or her life and for this purpose he or she had been sent to the Earth. Therefore, the meaning of life may be different. It may happen that an individual is born to support just one person; a teacher also might support just one pupil. We could agree to the opinion expressed by L. Seklitova and L. Strelnikova (Секлитова, Стрельникова, 2013) that we must dutifully perform our work that we should do. The meaning of each person, irrespective of his or her position, is a personal development through serving to his or her nation and mankind. This, in its turn, affects the improvement of the Universe. Great things are achieved through the little ones, when, by perfecting ourselves, we improve also the world (Briede, Pēks, 2011; Robertsons, 2011; Vilsons, 2012; Сельчёнок, Сельчёнок, 1996; Стулпинене, 2006).

The common for the mission and the meaning of life is that why a human being lives. But the difference - for many people the meaning of life may be (or may become) the satisfaction of their personal interests, whereas the mission is always outside the personal interests (Сафронов, 2012; Смысл жизни, 2012). In their turn, the values shall be analysed within the context of the meaning of life and mission.

The independent work on the personal values help the teacher to be convinced for his or her calling. It broadens awareness, helps to find his or her place in life and creates positive attitude towards the life on the whole.

The following criteria prove that the mission had been identified successfully (Жалевич, 2010): emotional uplift during the activity overlapping with the calling; instant feeling of happiness; the person likes his or her occupation; the activity encompasses elements of creativity; the activity is unique, and the other person's actions are not imitated; other people profit from such activities.

Every school wants that the best teachers would work there. But many things in the teachers' performance depend also on the collaboration between the administration of school and the teacher. Russian educator V. Lyzinsky (Лизинский, 2004, 13) has said about a teacher the following: *"A teacher is the finest instrument encompassing all range of a human being's activities: he is a philosopher, a conductor, an organizer, a scientist, a psychologist, an actor. When working with a teacher, you shall respect his or her views on the action; you shall help him or her to discover the morals and beauty of the sound of this instrument"*.

But several authors (Veiss, Retlitsbergere, 2013; Vilsons, 2012; Блект, 2012) find that the Universe provides an individual, fulfilling his or her mission, with all conditions, including material ones, necessary for creativity.

The self-realization of a personality is a long-term process, but it is important that the teacher is aware of the meaning of life in order he or she could understand, whether he or she had taken the right place. As a result of education, anyone can become a teacher, but not everybody can be a teacher - EXPERT. The evaluation of the results of theoretical studies enables to identify common conclusions drawn in the works of many scientists and teachers, which characterize the personality of a teacher and his or her professional activities (Baltušīte, 2013): love towards people; understanding, development and maintaining of pupils' individuality; a teacher's professional development, self-cognition and self-

analysis; love towards one's own work; learning of a pupil; creating of favourable environment; responsibility for one's own result of work; understanding of one's own mission within the context of time; serving to the nation and mankind.

Thus new conditions demand that the teacher would self-develop and gain insight into the new tendencies, accept them and implement in his or her activities.

## Conclusions

A teacher's career nowadays is determined by the changes in thinking and educational goals, insight into the concept of career, the broadening of the content of a teacher's activities.

- The concept of career, according to its broad meaning, encompasses a family, work, citizenship, free time and spirituality. The teacher himself or herself is the main manager of his or her career.
- A modern teacher's career is characterized by self-development not only regarding professional aspects, but also concerning self-perception and self-cognition, which is a basis for the broadening of awareness (including professional awareness). The most important issues the teacher shall pay attention are the following: the holistic understanding of subject, flexible and mobile study process, assistance to the pupil regarding the construction of knowledge, grounding on the pupil's experience, perception and creative knowledge, the development of pupil's abilities, self-control and self-assessment.
- A teacher's profession is a profession of a mission. A successful teacher is the one who perceives his or her professional activities as calling, where the main essence is serving to the nation and mankind.

## Bibliography

1. Adey P., Hewitt G., Hewitt J., Landau N. (2004). *The Professional Development of Teachers: Practice and Theory*. Dordrecht: Kluwer Academic Publishers.
2. Amonašvili Š. (2007a). Bērna kausā mirdz kultūras grauda iedīglis (The Cultural Grain Germs Shines in Child's Cup). *Almanahs: Humānisms, pedagoģija*. Rīga: Dizaina un drukas divīzija Citrons. (in Latvian)
3. Amonašvili Š. (2007b). *Skolas patiesība (The Truth of School)*. Rīga: Dizaina un drukas divīzija Citrons. (in Latvian)
4. Amonašvili Š. (2011). *Skolotāj, iedvesmo mani jaunradei (The Teacher, inspire Me to Creativity)*. Rīga: Starptautiskā Rērihu centra Latvijas nodaļa. (in Latvian)
5. Baltušīte R. (2013). *Pedagoģijas studentu gatavība profesionālai darbībai skolas vidē (The Pedagogy Students' Readiness for Professional Activities in the School Environment)*. Promocijas darbs. Jelgava: LLU. (in Latvian)
6. Boitmane I. (2009). *Veiksmīgas karjeras anatomija (The Anatomy of Successful Career)*. Rīga: SIA „Lietišķās informācijas dienests”. [online] [25.01.2017] Available at [https://www.lid.lv/images/PDF/karjeras\\_anatomija\\_makets\\_113.pdf](https://www.lid.lv/images/PDF/karjeras_anatomija_makets_113.pdf) (in Latvian)
7. Briede B., Pēks L. (2011). *Ekoloģiskā pieeja izglītībā (Ecological Approach in Education)*. Monogrāfisko pētījumu sērija "Izglītības ekoloģija". Jelgava: LLU IMI. (CD – ROM elektroniskais resurss) (in Latvian)
8. Bronfenbrenner U. (1996). *The Ecology of Human Development. Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.
9. Capra F. (1996). *The Web of Life: A New Scientific Understanding of Living Systems*. New York: Anchor Books, Doubleday.
10. *Deviņas burvju receptes veiksmes piesaistīšanai (Nine Magic Recipe for Attracting Success)*. (2013). [online] [25.01.2017] Available at <http://www.delfi.lv/vina/personiba-un-brivais-laiks/meness-kalendars/devinas-burvju-receptes-veiksmes-piesaistisanai.d?id=42950954#ixzz3OhJRuuWx>
11. DuNeen J. (2013). *25 Things Successful Teachers Do Differently*. [online] [25.01.2017] Available at <http://www.teachthought.com/pedagogy/25-things-successful-teachers-do-differently/>
12. Folkmane A. (1995). Vai pieņemsim praviešus savā zemē? (Do We Admit Prophets in our Country?) *Psiholoģija mums*, Nr. 5, 28. – 32. lpp. (in Latvian)



13. *Karjeras attīstības atbalsts. izglītība, konsultēšana, pakalpojumi (Career Guidance: Education, Counseling, Services)* (2008). Autoru kolektīvs. Rīga: VIAA. [online] [25.01.2017] Available at [http://viaa.gov.lv/files/news/727/karjeras\\_attiistiibas\\_atbalsts\\_2008.pdf](http://viaa.gov.lv/files/news/727/karjeras_attiistiibas_atbalsts_2008.pdf) (in Latvian)
14. Katane I. (2005). *Lauku skolas kā izglītības vides izvērtēšanas modelis (Rural Schools as Evaluation Model of the Educational Environment)*. Promocijas darbs. Daugavpils: Daugavpils Universitāte. (in Latvian).
15. Katane I. (2007). *No ekoloģiskās paradigmas līdz vides modelim izglītības pētniecībā. Monogrāfisko pētījumu sērija „Izglītības ekoloģija” (From Ecological Paradigm to Environmental Model in Education Research. Series of Monographic Research “Ecology of Education”)*. Jelgava: LLU TF IMI. (CD – ROM elektroniskais resurss) (in Latvian)
16. Katane I., Pēks L. (2006). *Izglītības ekoloģija: starpdisciplinārs virziens mūsdienu izglītības pētniecībā. Monogrāfisko pētījumu sērija "Izglītības ekoloģija"(Ecology of Education: Interdisciplinary Trend in Contemporary Educational Research. Series of Monographic Research “Ecology of Education”)*. Jelgava: LLU TF IMI. (in Latvian)
17. Henkampa K. (2006). *Indigo fenomens (The Phenomenon of Indigo)*. Rīga: Jumava. (in Latvian)
18. Patton W., McMahon M. (2006). *Career Development and Systems Theory. Connecting Theory and Practice. (3<sup>rd</sup> ed.). Career Development Series, Vol. 6.* Rotterdam: Sense Publishers.
19. *Profesijas, kas var novest līdz depresijai (Professions, which can Lead to Depression)*. (2014). [online] [25.01.2017] Available at <http://www.monday.lv/profesijas-kas-var-novest-lidz-depresijai/> (in Latvian)
20. *Publikācijas un statistika (Publications and Statistics)* (2017). Rīga: LR Izglītības un Zinātnes ministrija. [online] [25.01.2017] Available at <http://www.izm.gov.lv/lv/publikacijas-un-statistika> (in Latvian)
21. Robertsons R. (2011). *Indras tīkls (Indra's Net)*. Rīga: Jumava. (in Latvian)
22. Rudzāte E. (2014). *Kāds ir izglītības mērķis (What is the Purpose of Education)?* Domātājs.lv [online] [25.01.2017] Available at <http://domatajs.lv/kads-ir-izglitibas-merkis/> (in Latvian)
23. Rudzāte E. (2013). *Izglītības vērtība (The Value of Education)*. Domātājs.lv [online] [25.01.2017] Available at <http://domatajs.lv/kas-ir-izglitiba/>
24. Salite I. (2000). Integrated Teaching in Ecosystem and Spiritual Context. In Proceedings of the International Scientific Conference *Natural Sciences and Teacher Training*. Vol. 2. Daugavpils: DU, pp. 82 – 90.
25. Sterling S. (2001). Sustainable Education. Re-visioning Learning and Change. *Schumacher Breifing*, Vol. 6. Dartington, UK: Green Books Ltd.
26. *Teachers' Work - Related Stress: Assessing, Comparing and Evaluating the Impact of Psychosocial Hazards on Teachers at their Workplace*. (2011). Brussels: The European Trade Union Committee for Education. [online] [25.01.2017] Available at <http://www.lizda.lv/content/files/TeachersStressEn.pdf>
27. Veiss M.N., Retlitsbergere L.V. (2013). *Psiholoģijas koeficients (The Factor of Psychology)*. Rīga: Jumava. (in Latvian)
28. Vilsons R.A. (2012). *Kvantu psiholoģija (Psychology of Quantum)*. Rīga: Jumava (in Latvian)
29. Блект М. (2012). Некоторые мысли, которые могут помочь вам найти свое предназначение (Some Thoughts that may Help you to Find your Destination). [online] [25.01.2017] Available at <http://www.bleckt.com/about/marina-bleckt/1300.html> (in Russian)
30. *Двенадцать жизненных ценностей (Twelve Values of Life)*. (2012). [online] [25.01.2017] Available at <https://www.pegascenter.com/2012/02/23/12-жизненных-ценностей> (in Russian)
31. Долгорукова О. (2006). *Построение карьеры (Building a Career)*. Санкт-Петербург: Питер. (in Russian)
32. Жалевич А. (2010). *Жизненное предназначение, призвание, миссия, смысл жизни человека (The Life Purpose, Vocation, Mission and Meaning of Human Life)*. [online] [25.01.2017] Available at <http://zhalevich.livejournal.com/687.html> (in Russian)
33. Колесникова И.А. (2007). *Коммуникативная деятельность педагога (Communicative Activities of the Teacher)*. Москва: Академия. (in Russian)
34. Лизинский В.М. (2004). *Приемы и формы в учебной деятельности (Methods and Forms of Educational Activity)*. Москва: Крылья. (in Russian)
35. Некрасова Н.А., Некрасов С.И., Садикова О.Г. (2008). *Тематический философский словарь (The Subject Dictionary of Philosophy)*. Москва: МГУ ПС (МИИТ). (in Russian)

36. Петровский А.В., Ярошевский М.Г., Карпенко Л. (Ред.) (1998). *Краткий психологический словарь (Short Dictionary of the Psychology)*. (2-е изд.). Ростов-на-Дону: ФЕНИКС. (in Russian)
37. Подласый И. (2010). *Энергоинформационная педагогика (The Energy-informational Pedagogy)*. Москва: Дата Сквер. (in Russian)
38. Сафронов И. (2012). *Миссия и предназначение человека: Что это? Зачем она нужна? Как ее найти? (The Mission and Purpose of Man: What's this? Why is it necessary? How to find it?)* [online] [25.01.2017] Available at <http://blog.prosperitylab.ru/prosperity/missiya-i-prednaznachenie-cheloveka-cto-eto-zachem-ona-nuzhna-kak-ee-najti.html> (in Russian)
39. Секлитова Л.А., Стрельникова Л.Л. (2013). *Развитие человека (The Human Development)*. Москва: Амрита-Русь. [online] [25.01.2017] Available at [http://www.lawsuniverse.ru/dir/razvitie\\_cheloveka/obshhee\\_o\\_razviti\\_i\\_neobychnye\\_missii\\_i\\_smysl\\_zhizni/72-1-0-405](http://www.lawsuniverse.ru/dir/razvitie_cheloveka/obshhee_o_razviti_i_neobychnye_missii_i_smysl_zhizni/72-1-0-405) (in Russian)
40. Сельчёнок К.В., Сельчёнок Н.А. (1996). *Алхимия экологической педагогики (The Alchemy of Environmental Pedagogy)*. [online] [25.01.2017] Available at <http://ados.kubiki.info/jurnaly/alhimiya-ekologicheskoy-pedagogiki-selchenok-k-v-> (in Russian)
41. Слостенин В., Исаев И., Шиянов Е. (2007). *Педагогика (Pedagogy)*. (6-е изд.). Москва, Академия. (in Russian)
42. *Смысл жизни (The Meaning of Life)*. (2012). [online] [25.01.2017] Available at [http://www.psychologos.ru/articles/view/smysl\\_zhizni](http://www.psychologos.ru/articles/view/smysl_zhizni) (in Russian)
43. Стулпинене И. (2006). *Физика языком сердца (The Physics of Heart Language)*. Рига: Рекламас паркс. (in Russian)
44. Чернозёмова Е. (2007). Гуманизм и образование: достоинство – это то, чего человек достоин (Humanism and Education: Dignity – that's what a Person Deserves). *Almanahs „Humānisms. Pedagoģija”*, Vol. 1, 58. – 75. lpp. (in Latvian and in Russian)
45. Шецко Л.Г. (2009). *Материалы к заседанию педагогического совета школы на тему «Критерии успешности учителя» (Materials for the Meeting of the School Teachers' Council on "The Criteria for the Success of the Teacher")*. [online] [25.01.2017] Available at <http://festival.1september.ru/articles/537212/> (in Russian)



## The First Year Students' Perceptions of Higher Studies: a Case of University of Latvia

Rita Birzina<sup>1</sup> Dr. paed; Dagnija Cedere<sup>2</sup> Dr. chem.

University of Latvia, Latvia<sup>1,2</sup>

[rita.birzina@lu.lv](mailto:rita.birzina@lu.lv)<sup>1</sup>; [dagnija.cedere@lu.lv](mailto:dagnija.cedere@lu.lv)<sup>2</sup>

**Abstract:** Nowadays too many students drop out before the end of their higher education studies. Especially topical this problem is directly of the first year students, so it is important to find out how prepared are students for higher studies. The present article reveals the first year students' readiness for studies in the context of three learning dimensions: cognitive, emotional and social. The research was conducted during the implementation of first year study courses of the Bachelor programme at the Faculty of Biology of the University of Latvia. The qualitative data were obtained in structured interview of 62 first year students related to their perception of learning and factors, which influenced their readiness for studies. The coding system based on three learning dimensions - cognitive, emotional and social - was developed. After coding the qualitative data, they were converted into quantitative considering the developed coding system. A Kruskal-Wallis nonparametric test was conducted to discover statistically significant differences among students' groups in the three learning dimensions. The gained results showed that students' readiness for studies correlates with their background knowledge of science content, their previous learning experience, which depends on the teacher and students' motivation to learn.

**Keywords:** learning dimensions: cognitive, emotional and social, readiness to study, university education.

### Introduction

Universities are interested in improving students' retention and completion in many parts of the world. Factors that impact and contribute to retention and completion are multi-dimensional and complex (Jansen, van der Meer, 2007). According to Organization for Economic Co-operation and Development (OECD) data approximately one third of students in higher education in the OECD countries do not complete their studies (OECD, 2008). For example, Italy has the highest drop-out rate at 33 per cent, followed by the Netherlands with 31 per cent and Spain and Czech Republic with 28 per cent. At the other end of the scale, the countries with the lowest self-reported drop-out rate are the UK at 16 per cent, Norway at 17 per cent and France, Sweden and Slovak Republic, all with 19 per cent (Hovdhaugen, Kottmann, 2015, 15). As noted by European Molecular Biology Organization (Moore, 2006, 1) "graduation failure rates of 40 % and above (which include drop-out before graduation and examination failure) are not uncommon, and in some countries may be as high as 50–60 %". According to the organisation's view failure rates for sciences are generally not known, but are assumed to be related to the reasons: (1) the course did not match the expectations of the student; (2) the student did not match the expectations of the course, lacking life and social skills, and (3) the ability for autonomous information retrieval and learning, the student did not enter university with the aim of gaining an academic qualification.

The significant decrease in the number of students has lately caused additional problems in Latvia, therefore, higher education institutions face less prepared students than before. This results in the fact that great differences in terms of prior knowledge and learning skills are observed in the first year of studies, which hinders considerably the implementation of a unified study process. There are also the problems related to plan and to manage self-directed studies (Briede, 2016). Many first year students are unable to adapt to studying in higher education institutions. This study year approximately 9 % of the future biologists dropped the faculty already during the first semester. In order to ensure productive studies at the Faculty of Biology it is important to find out reasons why students fail to cope with the study objectives.

Over the past years, numerous studies to find out the problems of first-year students have been conducted. For example, the research of G. Crisp and others (Crisp, Palmer, 2009) was oriented at clarifying students' expectations in first year study process. Exploring student expectations and perceived readiness across two countries, the Netherlands and New Zealand, E. Jansen and J. Meer (2007) provide some interesting insights on the role of the secondary education system in preparing students for university. The process of learning based on prior knowledge, previous experience, previous instruction, preferred learning styles

and receiving feedback is studied by W. B. Wood (2009). P. Ashwina and K. Trigwellb (2012) investigate students' prior experiences of learning: evoked conceptions of learning, evoked motivation and evoked self-efficacy. Research of students' engagement is carried out by K.L. Krause and H. Coates (2008), C. Bovill, C. J. Bulley and K. Morss (2011), and E. R. Kahua (2013).

J. Quinn (2013) identified six key factors leading students to drop-out. He listed socio-cultural, structural, policy, institutional, personal and learning factors. All of these factors are inter-related, and it is often a combination of these factors that leads to drop-out and there is no one essential reason.

Thus first-year students' studies are explored in the context of diverse aspects: preparatory level of schools, ongoing learning process, psychological traits of students, management of studies, and engagement in studies.

In order to evaluate how ready students are to achieve the goals set by the Bachelor's programme at the Faculty of Biology of the University of Latvia, the authors were use holistic approach to continuity of learning. To reach it, theoretical framework of three learning dimensions was applied. As K. Illeris (2007, 2009) points out all learning always includes three dimensions: (1) the cognitive (content) dimension of knowledge, understandings, skills, (2) the emotional (incentive) dimension of emotions, feelings, motivation and volition, and (3) the social (interaction) dimension of action, communication and cooperation.

The cognitive dimension is the dimension of the learning content, which may be described as knowledge or skills and which builds up the understanding and the ability of the learner (Illeris, 2009). The emotional or incentive dimension is described in terms of emotions, feelings and motivations, and the social dimension is linked to external interaction such as participation in actions, communication and co-operation.

The aim of this article for the authors is to explore the first year students readiness for studies in mentioned three dimensions of learning: cognitive, emotional and social.

## Methodology

In order to find out students' perceptions of their study process in higher education, the following research questions were put forward:

1. How do 1st year students assess their readiness for studies at the Faculty of Biology?
2. Which factors during the school years have helped them adapt to the study environment more easy?
3. Which factors during school years have created obstacles for getting ready for studies in the higher education institution?

The present research was conducted during the implementation of Biology Bachelor programme in February, 2015 at the Faculty of Biology, University of Latvia.

The sample comprised the first year students of that programme: 35 students of the course *Introduction into Studies* and 27 students of the course *Chemistry*. Students were divided into 6 groups (Table 1) according to the school final examination assessment in Biology and Chemistry. Out of 35 students (Groups 1B, 2B and 3B) 6 were male and 29 – female, but out of 27 students (Groups 1C, 2C and 3C) 7 were male 20 – female.

Table 1

**Sample distribution by the school final examination results in biology and chemistry**

	Group1B	Group2B	Group3B	Group1C	Group2C	Group3C
Assessment	9-10	8	7	9-10	8	5-7
Number of students	19	12	4	5	11	11
Total	N=35			N=27		

The data have been obtained in written structured interviews applying an open questionnaire as a tool. The method of obtaining qualitative data was selected because qualitative research is a holistic approach

that involves discovery (Creswell, 1994) and social phenomena are investigated from the participants' viewpoint. While the quantitative method provides an objective measure of reality, the qualitative method allows the researcher to explore and better understand the complexity of a phenomenon (Williams, 2007).

Illeris's (2007, 2009) three dimensions of learning: *Cognitive* (knowledge, understanding and skills), *Emotional* (volition, feelings and motivation), and *Social* (types of interaction: participation as action, communication and co-operation) for theoretical basis were used (Figure 1).

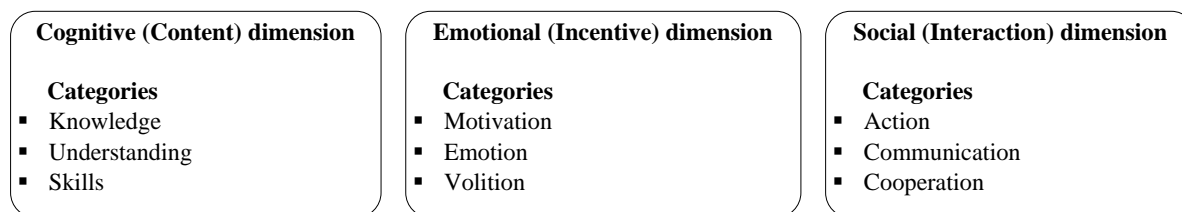


Figure 1. Three dimensions of learning.

The structured interview with open items has been constructed. It consisted of two parts: general and conceptual. In the general part of the elaborated questionnaire, there was included information about respondents: gender, school, average mark, final examination assessment and average mark of Biology and Chemistry in the first semester at the Faculty of Biology. The conceptual part related to students' conceptions of learning, prior knowledge of Biology and Chemistry, and factors, which influenced their readiness for studies at the Faculty of Biology (Table 2).

Table 2

Items used in the Questionnaire

General part	Conceptual part
Gender	The meaning of learning
Region/district/city/secondary school finished	Assessment of prior knowledge in Biology/Chemistry
Average mark of secondary school certificate	Students' school experience on positive factors affecting learning
School final examination assessment in biology and chemistry	Students' school experience on negative factors affecting learning
Average mark of Biology/Chemistry in the first semester at the Faculty of Biology	View of the studies at the Faculty of Biology
	Suggestions for improving the studies

The qualitative data were obtained from students' answers. A coding system by identifying three types of codes – speaker, profile and conceptual (Huber, Gurtel, 2013) was developed for data processing. Conceptual codes were related with the three dimensions of learning (Illeris, 2007; 2009): Cognitive (categories *Knowledge*, *Understanding* and *Skills*), Emotional (categories *Volition*, *Motivation* and *Emotions*, divided as *positive* and *negative*), and Social (categories *Action*, *Communication* and *Cooperation*, divided as *positive* and *negative*). For evaluation students' previous learning experience, additional categories *Prior Knowledge is*, *Prior Knowledge no*, and *Prior Knowledge partly* were used.

The program AQUAD 7.0 was used for processing of qualitative data. After coding the qualitative data, they were converted into quantitative considering the developed coding system and they were further analysed. In the data analysis, there were used mathematical statistical data processing methods to reveal the research results. As the data were not empirically distributed in order to discover hidden interconnections, non-parametric method (Kruskal-Wallis H test) was applied. This test determines the differences in groups or ranks thus enabling to compare several variables (Rašcevska, Kristapsone, 2000). For finding of differences among students' groups the Test Statistics table presented the Chi-square value (Kruskal-Wallis H test), the degrees of freedom and the significance level was used. The differences between the variables studied may be considered significant if p-value is below 0.05. For processing of quantitative data the SPSS 19.00 program was used.

## Results

In order to explore how students understand their own readiness for studies, their answers were analysed. It was determined as the frequencies of codes describing students' views of what learning was, how ready they were to study, and what factors affected their readiness for studies.

Table 3

Distribution of codes identified among students' groups in Test Statistics <sup>a,b</sup>

Category	Chi-Square ( $\chi^2$ )	df	Asymp. Sig. (p)
Action positive	9.574	5	0.088
Action negative	5.460	5	0.362
Communication positive	4.636	5	0.462
Communication negative	3.657	5	0.600
Cooperation negative	18.053	5	<b>0.003</b>
Cooperation positive	8.811	5	0.117
Emotion positive	18.990	5	<b>0.002</b>
Emotion negative	2.925	5	0.712
Knowledge	23.089	5	<b>0.000</b>
Motivation	19.218	5	<b>0.002</b>
Prior Knowledge is	12.166	5	<b>0.033</b>
Prior Knowledge partly	11.442	5	<b>0.043</b>
Prior Knowledge no	6.730	5	0.241
Skills	10.331	5	0.066
Understanding	4.745	5	0.448
Volition	2.830	5	0.726

a. Kruskal Wallis H Test

b. Grouping Variable: Group

As indicate in Table 3 there is a statistically significant difference among students' groups in categories *Cooperation negative*, *Emotions positive*, *Prior Knowledge is*, *Prior Knowledge partly*, *Knowledge*, and *Motivation* (p values have been highlighted in bold). These differences will be further analysed in detail in context of three learning dimensions.

### Cognitive (Content) Dimension of Learning

The cognitive (content) dimension concerns what is learned. Learning in this context is characterised as acquisition of knowledge, understanding and skills. Students perceive:

- category *Knowledge* as learning as acquisition of knowledge, learning as gaining knowledge for practical life and future career and learning as self-development;
- category *Understanding* as gradual development of concrete topic and logic of learning, as well as making connection of theory and practice;
- category *Skills* as skills for study process, self-directed learning, memorizing and consumption of time and effort.

As it is seen from Figure 2 there are differences between students' groups with higher (Group 1B, Group 2B) and lower (Group 3C) level examination assessment in categories *Knowledge*, *Skills* and *Understanding*, especially difference in category *Knowledge*. The Group 3C differs in view of learning as acquisition of knowledge (7.69 %), and they demonstrated greater emphasis on the skills for learning (46.15 %) and understanding (46.15 %).

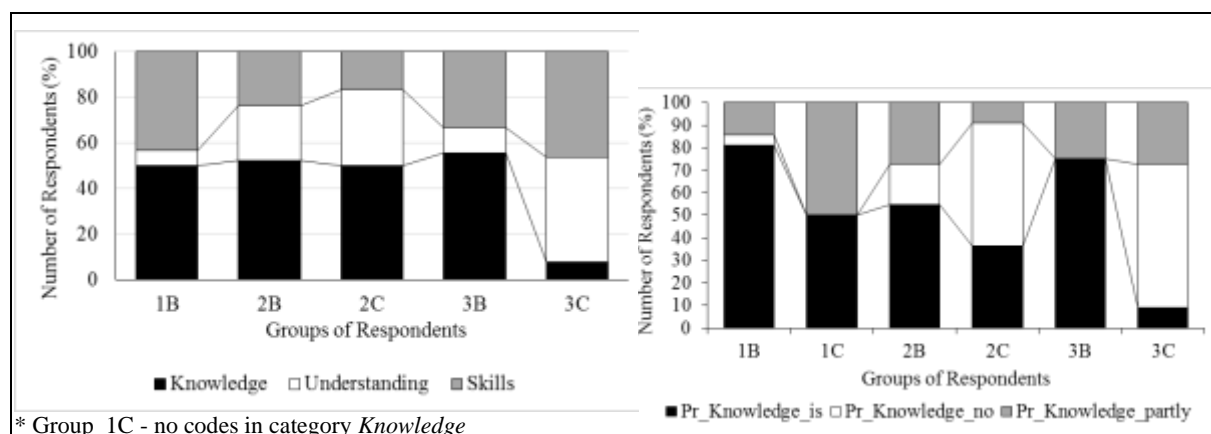


Figure 2. Students' views on Cognitive Dimension of Learning.

There is a statistically significant difference among groups in category *Knowledge* ( $\chi^2 = 23.089$ ,  $p < 0.001$ ) (Table 3) with a mean rank (Table 4) of 40.84 for Group 1B, 44.38 for Group 3B, 36.33 for Group 2B, 27.09 for Group 2C and 17.32 for Group 3C. Groups 1B, 2B and 3B are more similar than Groups 2C and 3C.

Table 4

Mean rank of categories *Knowledge*, *Prior Knowledge is* and *Prior Knowledge partly*

Group	N	<i>Knowledge</i>	<i>Prior Knowledge is</i>	<i>Prior Knowledge partly</i>
1B	19	40.84	38.24	25.66
2B	12	36.33	29.92	32.00
3B	4	44.38	34.63	29.50
1C*	5	15.00	27.00	22.00
2C	11	27.09	27.00	36.50
3C	11	17.32	27.00	41.09
Total	62			

\* Due to no codes Mean Rank of Group 1C in category *Knowledge* is not taken into account

Learning always takes prior knowledge into account. In order to evaluate the importance of prior knowledge, students' opinion was explored. Thus, it was described in context of the three categories *Prior Knowledge is*, *Prior Knowledge no*, and *Prior Knowledge partly*. Concerning the meaning of presence of prior knowledge, the citations of students' answers are summarized:

Prior Knowledge is good enough. *Yes, at school I gained good prior knowledge, especially, getting ready for subject competitions and exams. I was thrilled by biology already in the basic school (Stud13B). Student (Stud 23B) graduated the rural region schools write: I am even proud that my previous knowledge is better than of many of my course mates.*

Prior Knowledge is partly good. *Yes, but it depends on the subjects to be mastered. For example, knowledge in biology is sufficient but in chemistry – not (Stud27C). There are topics in which prior knowledge is good and there are topics in which there is no prior knowledge at all (Stud14B).*

Prior Knowledge is not good enough. *Not enough because many things I had not learnt before (Stud11C). Already at school I understood that chemistry is a complicated subject. I have no prior knowledge (Stud1C).*

As it is shown in Figure 2 there are significant differences between Groups B and C, especially evaluating the subcategory *Prior Knowledge no*. The students of groups with different assessments (1B, 80.59 %; 2B, 54.55 % and 3B, 75 %) considered their knowledge sufficient for acquisition of Biology. The same situation is also in Group 1C (50 %). The data shows that the situation is critical with respect to the acquisition of Chemistry, especially in the Group 2C (54.55 %) and 3C (63.64 %) with a lower score.

There is a statistically significant difference among groups in the categories *Prior Knowledge is* ( $\chi^2 = 12.166$ ,  $p = 0.033$ ) and *Prior Knowledge Partly* ( $\chi^2 = 11.442$ ,  $p = 0.043$ ) (Table 3).

Table 4 shows the mean rank of the categories *Prior Knowledge is* and *Prior Knowledge partly* of learning dimensions for each students' group. In category *Prior Knowledge partly* the Group 3C with the mean rank 41.09 differs from Groups 1C with the mean rank 22.00 and 1B with the mean rank 25.66 and 3B with the mean rank 29.50.

As concerns category *Prior Knowledge is* there are more similarities within all Groups 1B (mean rank 38.24), 3B (mean rank 34.63) and 2B with the mean rank 29.92. All Groups 1C, 2C and 3C have the same mean rank value (27.00).

### Emotional (Incentive) Dimension of Learning

Dimension *Incentive* is described with categories *Motivation*, *Emotions positive* and *Emotions negative*, as well as *Volition*.

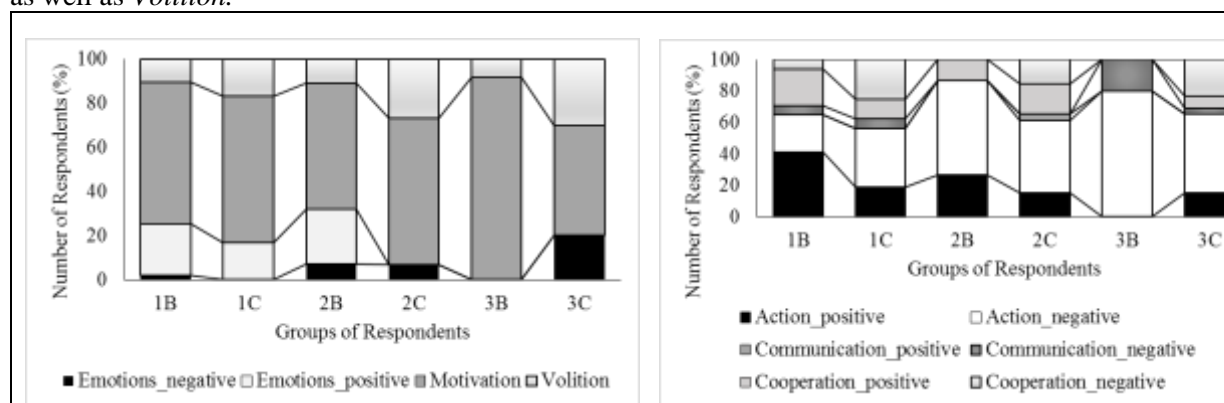


Figure 3. Students' views on Emotional and Social dimension of learning.

Respondents of all groups as it is shown in Figure 3 consider that the main factors for successful studies are their motivation linked with interest to Biology and career (from 50 % in Group 3C to 91.67 % in Group 3B), their purposeful attitude and like of Biology (Group 1B, 23.40 % and Group 2B 50 %) and Chemistry (Group 1C, 16.67 %). Interesting are opinions concerning volition (in all groups from 8.33 % (3B) to 30 % (3C)) that show the attitude of students to study in their own chosen profession.

There is a statistically significant difference among groups in categories *Emotions positive* ( $\chi^2 = 18.990$ ,  $p = 0.002$ ) and *Motivation* ( $\chi^2 = 19.218$ ,  $p = 0.002$ ) (Table 3).

Table 5 shows the mean rank of the categories *Emotions positive* and *Motivation* for each students' group. In category *Emotions positive* the Group 1B with the mean rank 37.87 and Group 2B with the mean rank 40.92 are similar to each other, and differ from other similar groups, such as 3B, 2C and 3C with the same mean rank 23.00. It means that higher grade assessment gives more positive emotions.

Table 5

Mean rank of categories <i>Emotions positive</i> , <i>Motivation</i> , and <i>Cooperation negative</i>				
Group	N	<i>Emotions positive</i>	<i>Motivation</i>	<i>Cooperation negative</i>
1B	19	37.87	37.39	28.32
2B	12	40.92	35.58	23.50
3B	4	23.00	52.63	23.50
1C	5	28.90	17.00	47.90
2C	11	23.00	29.27	32.55
3C	11	23.00	18.00	40.14
Total	62			

### ***Social (Interaction) Dimension of Learning***

This dimension is described with the categories *Action positive*, *Action negative*, *Communication positive*, *Communication negative*, *Cooperation positive* and *Cooperation negative*. Considering students' views on the factors that have affected their studies (Figure 3) there is mentioned good cooperation (especially Group1B, 41.18 %) and poor cooperation with teachers (especially Groups 1C, 25 %; 2C, 15.38 %; 3C, 23.08 %), previous negative experience of learning (*Action negative*) in school dominated in all groups, but especially in Groups 2B (60 %) and 3B (80 %). These answers were mainly associated with activities in school – lack of laboratory works, uninteresting lessons, too many other subjects due to no time to devote oneself only to Biology. Such untargeted personal action as laziness and unwillingness to learn Chemistry particularly manifested in Group 3C (50 %).

There is a statistically significant difference among groups in category *Cooperation negative* ( $\chi^2 = 18.053$ ,  $p = 0.003$ ) (Table 3) with the mean rank of 47.90 for Group1C, 40.14 for Group3C, 32.55 for Group2C, 28.32 for Group 1B, 23.50 for Group 2B and Group 3B. Groups1C and 3C are more similar and they differ from Groups 1B, 2B and 3B (Table 5).

### **Discussion**

Discussion presents concerning the place of the results of the study within the context of the findings of other authors, as well as analyses the results from the point of view of the stated research questions in context of three learning dimensions.

#### *First year students' readiness for studies at the Faculty of Biology*

Students' readiness for studies shows their understanding of learning in holistic continuum and presence of prior knowledge.

They perceive the studies at the university as a supplementation of their school learning experiences gained, emphasizing the acquisition of new knowledge, its self-determination skills development in the context of university education to purposefully develop their own competencies and personality. This conclusion coincides with the findings of R. Birzina (2011, 48) from the previous research carried out in the Faculty of Biology that "students' comprehension of what learning is correspond to classical European didactic approach as knowledge acquisition and skills to apply it, considering the knowledge as key components of experience, as well as emphasizing the cognitive process of learning, stressing that learning is acquisition and strengthening of knowledge". The mentioned conceptions are similar to R. Säljö (1979), F. Marton, G. Dall'Alba, and E. Beatty's (1993) opinions concerning learning and are interrelated in giving priority of generating high levels of knowledge and skills with attention increasingly to more demanding forms of "21st century competences" (Dumont, Istance, 2010).

Although there is relatively little research on students' expectations and self-perceived readiness before they come to university (Jansen, van der Meer, 2007), however, great emphasis will be placed on prior knowledge as evidenced by the data obtained in the present research. According to the survey data, the critical situation for most students (Group 3C) is discovered in Chemistry, which proves that optimal learning takes prior knowledge into account (Schneider, Stern, 2010). The students of this group emphasize more skills to learn because they have difficulties in memorizing new information and understanding theoretical concepts. As noted by W. Wood (2009) it is difficult to learn and memorize new information unrelated to prior knowledge.

The lack of prior knowledge sometimes is linked with acquiring only science not Biology or Chemistry in school. It would be good if "there were more inter-disciplinarity between Biology and other sciences at school, and a requirement for the parallel study of Chemistry and/or Mathematics for those wishing to study Biology at tertiary level" (Moore, 2006, 1).

#### *Main factors that during school years contributed to adapting to the study environment easier*

As noted by K. Illeris (2007, 243) "key point today that, what is to be learned, does not merely have to do with knowledge and skills, but also with attitudes, understanding, insight, general cultural orientation, acquisition of methodology and personal characteristics such as independence, responsibility, cooperation and flexibility, everything that is collected under modern concept of competence".

The present study reveals that students are highly motivated for studies of Biology, and they like Biology, they have always had very good scores in school in Biology. Surely, the liking of learning Biology and good grade is one of the drivers that attracts students studying at the Faculty of Biology. Also, J. Osborne and J. Dillons (2010) indicate importance of motivation towards learning of science, besides analysing the role of intrinsic and extrinsic motivation. The results of the present study also indicate this, since the former student's desire sometimes is associated with the goal of getting the highest score in exam.

The development of student's motivation is closely related to that of the student's action, since "learning is an activity carried out by the learner" (Schneider, Stern, 2010, 72). But the influence of subject teacher is great; and it is exposed both in the teacher's activity in the learning process and the teacher's own personal characteristics.

#### *Main factors that created obstacles during school years to prepare for university studies*

As present research reveals one of the main factors influencing the studies is student's personal attitude that caused her/his laziness, lack of interests and motivation to learn which in turn leads to negative emotions. It is one of the reasons because "motivation and emotion are essential to education because - together - they ensure that students acquire new knowledge and skills in a meaningful way" (Boekaerts, 2010, 92). Classmates' attitude is very important because often they themselves do not want to learn or do not support others' learning, but "learning is enhanced in a community of learners who value the knowledge that is being learned" (Wood, 2009, 5).

The following factors are often addressed as unfavourable factors influencing the learning process at school: infrastructure is not suitable for learning, there is no full implementation of the curriculum - no lessons, and lessons are not interesting. This means that there is no active learning through hands-on experience, but instead listening and reading occur.

The research data once again confirm the significance of the role of the teacher. As noted by L. Schulman (1987), teachers will need general pedagogical knowledge for strategies of classroom management, knowledge of learners and their characteristics, content knowledge, curriculum knowledge, and pedagogical content knowledge for integrating the content knowledge of a specific subject and the pedagogical knowledge for teaching the subject.

### **Conclusions**

The following conclusions based on the theoretical findings and data obtained can be drawn.

Students' understanding of learning in context of three learning dimensions – cognitive, emotional and social, as well as their prior knowledge in Biology and Chemistry demonstrates their readiness to study. There are statistically significant differences among various students' groups in all the three learning dimensions – Cognitive, Emotional and Social. The most significant differences are as follows: students' comprehension of knowledge acquisition process, insufficiency of prior knowledge in Chemistry, students' motivation to acquire the exact science (Biology, not Chemistry) and positive emotions, as well as previous negative collaboration with teacher has a significant impact on student, both in cognitive and emotional sphere.

Prior knowledge gained at school testifies about student's readiness for the studies. Students, who have had higher assessment in final examinations have expressed interest in Biology during the school years and have learned it additionally, have sufficient knowledge in Biology to start successfully their studies at the Faculty of Biology. The problem is that during the first year studies, students also have to acquire Chemistry, Physics and Mathematics and part of students have poor prior knowledge in these subjects. It is especially problematic for students who have had lower assessment in Chemistry at school (marks 5–7). While learning at school, students do not think that they will need Chemistry, but when they become university students, they realize that in order to widen their viewpoint they must know far beyond biology field.

Key factors that determine successful studies according to respondents' views are their personal interest related to their liking of learning Biology as their chosen speciality as well as purposeful action already during the school years acquiring Biology additionally, participating in the subject Olympiads. Students



also emphasize the teacher's role that is able to captivate pupils with his/her personal example, interesting lessons and practical activities.

Factors hindering the studies include, firstly, unsuccessful learning experience (insufficient equipment necessary for laboratory works, uninteresting lessons, lessons are not delivered due to the lack of the teacher). Secondly, the attitude to learning – pupils often had been lazy to learn because learning requires a certain use of time and effort; it concerns more seriously the acquisition of those subjects that pupils do not like. It is interesting that one of the negative factors is also the communication with classmates who had been unwilling to learn Biology and Chemistry therefore there had been discipline problems in the class.

## Bibliography

1. Ashwina P., Trigwellb K. (2012). Evoked Prior Experiences in First-Year University Student Learning. *Higher Education Research & Development*, Vol. 31 (4), pp. 449 – 463.
2. Birzina R. (2011). Biology Students' Comprehension of Learning as a Development of Their Biological Literacy. International 8th IOSTE Symposium for Central and Eastern Europe Science and Technology Education: Trends and Main Tendencies in the 21st Century, Riga, Latvia, November 30 - December 3, 2011. In *Latvijas Universitātes raksti (Scientific Papers of University of Latvia)*, Vol. 778, pp. 41 – 50. Riga: University of Latvia.
3. Boekaerts M. (2010). The Crucial Role of Motivation and Emotion in Classroom Learning. In H. Dumont, D. Istance, F. Benavides (Eds.) *The Nature of Learning: Using Research to Inspire Practice*. OECD: Centre for Educational Research and Innovation, pp. 91 – 111.
4. Bovill C. Bulley, C. J., Morss, K. (2011). Engaging and Empowering First-year Students through Curriculum Design: Perspectives from the Literature. *Teaching in Higher Education*, Vol. 16(2), pp. 197 – 209.
5. Briede B. (2016). Purposefulness and Time Management Components of Self-directed Studies at Latvia University of Agriculture. In Proceedings of the International Scientific Conference *Rural Environment. Education. Personality (REEP)*, Vol. 9. Jelgava: Latvia University of Agriculture, pp. 59 – 65.
6. Creswell J. W. (1994). *Research Design: Qualitative and Quantitative Approaches*. Thousand Oaks, CA: SAGE Publications, Inc.
7. Crisp G., Palmer E., Turnbull D., Nettelbeck T., Ward L., LeCouteur A., Sarris A., Strelan P., Schneider L. (2009). First Year Student Expectations: Results from a University-Wide Student Survey. *Journal of University Teaching and Learning Practice*, Vol. 6(1), pp.11 – 26.
8. Dumont H., Istance D., Benavides F. (Eds.). (2010). *The Nature of Learning: Using Research to Inspire Practice*. OECD, p. 342. [online] [06.12.2016] Available at [http://www.keepeek.com/Digital-Asset-Management/oecd/education/the-nature-of-learning\\_9789264086487-en#.WErt0PI96Hs#page1](http://www.keepeek.com/Digital-Asset-Management/oecd/education/the-nature-of-learning_9789264086487-en#.WErt0PI96Hs#page1)
9. Hovdhaugen E., Kottmann A., Thomas L., Vossensteyn H. (2015). *Dropout and Completion in Higher Education in Europe: Annex 1: Literature Review*. Luxembourg: Publications Office of the European Union. [online] [06.12.2016] Available at [http://www.keepeek.com/Digital-Asset-Management/oecd/education/the-nature-of-learning\\_9789264086487-en#.WErt0PI96Hs#page1](http://www.keepeek.com/Digital-Asset-Management/oecd/education/the-nature-of-learning_9789264086487-en#.WErt0PI96Hs#page1)
10. Huber G. L., Gürtler L. (2013). *AQUAD 7. Manual: The Analysis of Qualitative Data*. GNU General Public License: Softwarevertrieb Günter Huber, Tübingen, Germany.
11. Illeris K. (2007). *How We Learn: Learning and Non-learning in School and Beyond*. London / New York: Routledge.
12. Illeris K. (2009). A Comprehensive Understanding of Human Learning. In *Contemporary Theories of Learning: Learning Theorists — in Their Own Words*. London / New York: Routledge.
13. Jansen E., van der Meer, J. (2007). First-year Students' Expectations and Perceptions of Readiness before They Start University. In Proceedings of the 30th HERDSA Annual Conference *Enhancing Higher Education, Theory and Scholarship*. Adelaide, pp. 275.
14. Kahua E. R. (2013). Framing Student Engagement in Higher Education. *Studies in Higher Education*, Vol. 38(5), pp. 758 – 773.
15. Krause K. L., Coates H. (2008). Students' Engagement in First-year University. *Assessment and Evaluation in Higher Education*, Vol. 33(5), pp. 493 – 505.

16. Marton F., Dall'Alba G., Beatty E. (1993). Conceptions of Learning. *International Journal of Educational Research*, Vol. 19, pp. 277 – 300.
17. Moore A. (2006). *From School to University — a Report on the Transition from Secondary School Biology Education to University in Europe*. European Molecular Biology Organization. [online] [02.05.2016] Available at [http://www.anisn.it/matita\\_allegati/pdf/report%20EMBO%202006.pdf](http://www.anisn.it/matita_allegati/pdf/report%20EMBO%202006.pdf)
18. OECD (2008). *Education at a Glance: OECD Indicators*.
19. Osborne J., Dillon J. (2010). *Good Practice in Science Teaching: What research has to say* (2<sup>nd</sup> ed.). Berkshire, England: Open University Press. [online] [06.12.2016] Available at <https://channayousif.files.wordpress.com/2011/06/good-practice-in-science-teaching-what-research-has-to-say.pdf>
20. Quinn J. (2013). *Drop-out and Completion in Higher Education in Europe among Students from Under-represented Groups*. NESET-Report. Brussels: European Commission.
21. Raščevska M., Kristapsone S. (2000). *Statistika psiholoģiskajos pētījumos (Statistics in the research in psychology)*. Rīga: Izglītības sōļi. (in Latvian)
22. Säljö R. (1979). *Learning in the Learner's Perspective. I. Some Common-Sense Conceptions*, Vol. 76. Sweden: University of Gothenburg.
23. Schneider M., Stern E. (2010). The Cognitive Perspective on Learning: Ten Cornerstone Findings. In H. Dumont, D. Istance and F. Benavides (Eds.). *The Nature of Learning: Using Research to Inspire Practice*. Paris: OECD, Centre for Educational Research and Innovation, pp. 69 – 90. [online] [06.12.2016] Available at <https://www.uni-trier.de/fileadmin/fb1/prof/PSY/PAE/Team/Schneider/SchneiderStern2010b.pdf>
24. Shulman L. (1987). Knowledge and Teaching: Foundations of a New reform. *Harvard Educational Review*, Vol. 57(1), pp. 1 – 22.
25. Williams C. (2007). Research Methods. *Journal of Business & Economic Research*, Vol. 5(3), pp. 65 – 71.
26. Wood W. B. (2009). Innovations in Teaching Undergraduate Biology and Why We Need Them. *Annual Review of Cell and Developmental Biology*, Vol. 25, pp. 93 – 112.

## Analysis of Barriers for Creative School Culture in Baltic States

**Ilze Briška**<sup>1</sup> Dr. paed, Mg. art; **Daiga Kalēja-Gasparoviča**<sup>2</sup> Dr. paed.  
Riga Teacher Training and Educational Management Academy, Latvia <sup>1,2</sup>  
[ilze.briska@rpiva.lv](mailto:ilze.briska@rpiva.lv)<sup>1</sup>; [daiga.kaleja-gasparovica@rpiva.lv](mailto:daiga.kaleja-gasparovica@rpiva.lv)<sup>2</sup>

**Abstract:** Students' creativity is an important objective of 21st century education. There is lot of knowledge about the creativity. Strategies of its development are well researched and widely available. Nevertheless, stakeholders of education admit that promotion of students' creativity is not a self-evident component of school culture in Latvia, Estonia and Lithuania. The aim of the study is to identify barriers for expanding the creative school culture in Baltic States and analyze the opportunities of teachers, school managers and community members to cultivate creativity in schools. With this reason, mixed methods were used. 8 focus groups discussions were organized in order to find out experiences and opinions of various educational actors (teachers, school administration and teacher education representatives, students and parents) in Latvia, Estonia and Lithuania. Interviews with representatives of good practice schools specified the problems and shared educational solutions. Results of data analysis highlighted the most essential barriers for the development of students' creativity in schools and identify responsibilities of each actor of educational process in this respect. In conclusions, guidelines for teacher educators and school communities are summarized.

**Keywords:** creativity, school education, school culture.

### Introduction

There is an overall agreement among educators, parents, school administrators, researchers and educational policy makers, that students' creativity is an essential outcome of contemporary education. There is lot of knowledge about the creativity. Strategies of its development in schools are well researched and widely available. Nevertheless, despite vital needs of society, rational arguments and obvious possibilities, stakeholders of education admit that promotion of students' creativity is not self-evident component of our school education. There is still too much to do for cultivating of creativity in schools. From these statements the purpose of the study aroused – to answer the questions: “What is a cause?” and “What can we do?”

There are many researches about promoting the creativity in classroom and in organization, but this study pretends to be the first investigation of creative school culture as complex and interdisciplinary phenomenon in Baltic States.

**The aim of the study** is to identify barriers for expanding the creative school culture in Latvia, Estonia and Lithuania and analyze the opportunities of teachers, school managers and community members to cultivate creativity in schools.

Searching for the way, how to identify both manifested and latent reasons that impede / hinder promoting the development of students' creativity in school, the questions arise: 1) how do students' creativity relate to school culture; 2) what actual barriers for the development of students' creativity are identified by different educational actors - teachers, school administrators, students, parents and representatives of non-governmental organizations; 3) what problems are met by innovative good practice schools; 4) what is a responsibility of different groups of educators for successful cultivating the creativity in schools?

The research is done in a framework of Nord-plus Horizontal project “Creativity needs nurturing: enhancing school culture for creativity through cross-sectional network” (Nº NPHZ-2013/10110 and Nº NPHZ-2014/10018) (About Project, 2017).

### Methodology

According to M. Fullan, school culture can be defined as the guiding beliefs and values evident in the way a school operates. ‘School culture’ can be used to encompass all the attitudes, expected behaviors and values that impact how the school operates (Fullan, 2016). School culture is formed by ideals, principles, priorities, evaluations, identified and latent goals, identities, behaviour and activity habits and the related choices (Оллпорт, 2002; Столович, 1999) of all the responsible persons and groups involved in school education - teachers, parents, school managers, school and municipal employees.

Like the larger social culture, a school culture results from both conscious and unconscious perspectives, values, interactions, and practices, and it is heavily shaped by a school's particular institutional history. Students, parents, teachers, administrators, and other staff members all contribute to their school's culture, as do other influences such as the community in which the school is located, the policies that govern how it operates, or the principles upon which the school was founded. So, the school culture relates to different disciplines – educational sciences, leadership, pedagogy, psychology and cultural studies.

As values are the key concept of school culture, the creative school culture can be defined as learning environment, where student's creativity is appreciated highly.

In creative school students and teachers (Bebre, 2012; Beghetto, 2007; Chiksentmihalyi, 1990; Sternberg, Kaufman, 2010):

- feel free and secure;
- reveal and purposefully develop their individual creative abilities;
- meet challenges, take risks and are engaged in meaningful life experience;
- relationship between students, teachers, parents, school administrators and community is full of honor, understanding and mutual favor.

To investigate the creative school culture means to investigate the relationships between all inner and outer participants of school life in the dimensions of creativity – individual (creative personality)/freedom, contextual (creative product)/ interaction and professional (creative process)/needs (methodical aids?).

The idea of the empiric research is to clarify a problem by collecting as possible wide range of opinion in order to recognize the main problems of enhancing the creativity in schools and responsibilities of different groups of educators.

In order to find answers on these questions, a field research was carried out. Mixed methods design was used for flexible investigation of a problem. Qualitative methods - focus groups discussions, interviews and questionnaire helped to figure out the experiences and opinions of different groups involved in the process of education. To collect the possible variety of experiences, the group discussions of the various educational actors (teachers, school administrators, representatives of teacher education and NGO, students and parents) in Latvia, Estonia and Lithuania were organized. Point of view of students was represented by first and second year students from teacher education programs.

Results of the discussions were specified in interviews with participants of project workshops, administrators and teachers of good practice schools and NVO. Interviews with innovative school managers and teachers help to identify the real problems in their practice as well as solutions. Respondents were selected by teacher educators of Latvian, Estonian and Lithuanian university faculties of teacher education, in accordance with their permanent activities for inventing innovations in their schools in cooperation with researchers and communities. After eight interviews, the ideas become to recur; it allowed to conclude that all essential ideas are covered (Huber, Roth, 1999). Respondents from all involved countries had become to the same range of statements; that is why interviews of Latvian, Lithuanian and Estonian educators are not analyzed separately.

## **Results and discussion**

### ***Analysis of focus-groups discussions***

Focus groups discussions were arranged in November 2013 in Latvia, in February 2014 in Tallinn, and May 2015 – in Siauliai during the Project conferences and seminars. The results allowed to identify the persons involved in educational process, which are responsible for maintaining the creative school culture. They are students, peers, friends, teachers, local community, parents, family, and guest specialists. Nobody mentioned researchers/ teacher educators as responsible actors.

The generalization of focus groups discussions identified several aspects of barriers in each group involved in school education, and the opportunities to cope with them, as well (Table 1).

Table 1.

**Barriers for enhancing the creative school culture in Baltic States**

<b>Category</b>	<b>Barriers</b>	<b>Opportunities</b>
Students	Reluctance, distrust, poor attention, often – no sense of responsibility, lack of motivation, unable to meet the time limits, lazy, unpredictable, low self-esteem.	Student's choice and the opportunity to influence events. Lots to do for themselves, to take responsibility. To be aware of aim.
Teacher	The authoritarian style. The teacher's mind-set. The teacher's lack of motivation. Adherence to traditional methods because it is more convenient and comfortable.	Creative teacher.
Organization of the process of learning	Too many rules / no option, overload (three Olympics per year); Time limitation.	Extracurricular involvement of specialists, dance, art teachers, creative circles. More different classes Interesting, integrated learning process
Assessment	Ranking the students. Conflicting values/ criteria in school and in family. Inappropriate assessment criteria and methods. Exaggerate the importance of the processes, not caring about the creating of meaningful product.	Supportive assessment Transforming the error in effect.
Parents/ Society/ Community traditions	Public stereotypes, lack of understanding. Keeping the "frame" - customs and traditions – is comfortable.	School adopts and supports all the new.
Education policy	Educational standards.	
Physical environment	Discouraging, poor environment. Lack of technologies.	Creative example of adults support tours, IT.

All groups recognize, that *student's* attitudes - openness, freedom, expressivity, courage, interest, the choice needs interests, goal, and desire to act are suggested as important criteria of creative school.

**Teacher** as a key person in school education provides the attitude (used for negation), style (authoritarian), educational aims and behavior (for example), tradition (methods), mind-set, emphasis, motivation.

**School management** - accepts, approves or does not want (to do anything new), support or not (students' ranking), interprets the old traditions as a canon or looks for their essential sense, prevents the psychological climate of insecurity and distrust or does not.

The respondents see the responsibility of community lays mostly in financial support, which is necessary for providing the rich and aesthetical physical environment, extracurricular activities of students and cultivating traditions. Social stereotypes of parents and other community members either supports creative activities or rejects them as unnecessary or socially unacceptable.

### **Analysis of experience of innovative school teachers and managers**

Interviews with innovative schools' practitioners show another accents in problem. Experience of practitioners allow to state, that the origin of promotion of creativity is mostly subjective and cultural factors – teachers', parents' and school managers' understanding of creativity, believes about desirable

behaviors and students' chances to be creative. It fits with finding of J. Hattie about the role of educator's personality for reaching high learning outcomes (Hattie, 2012) (Table 2).

Table 2

### Experience of innovative school teachers and managers

Category	Responsibilities/ barriers
<b>School management</b>	To guarantee teacher cooperation, life-long education and creativity supportive assessment criteria. As a dominant problems teachers' individualism, concurrence, tradition to cope with difficulties independently there are mentioned.
<b>Teacher's personality</b>	Teachers' mind-set, rejecting the step out of a comfort zone, low self-esteem and avoidance from responsibility about creative decisions. School managers see the problem to cope with conservative teachers, but creativity-oriented teachers have experienced conflicts and lack of support from conservative school managers
<b>Teacher's professionalism</b>	Knowledge of creative thinking techniques and their teaching strategies It is important, that there is not a lack of methodology; problem is the channels, how educators can reach them.
<b>Meaningful learning</b>	Connecting the content of learning with real life by integration of content of different subjects or project method asks for teacher contribution in preparation of learning process, but it allows to save time and rise student' motivation.

It is remarkable that good practitioners do not mention students' responsibility in enhancing the creative school culture. They do not complain about educational policy (standards) or too saturated demands, or fragmentary of content of learning, too. Almost all innovative school managers have find a productive contact with communities and parents, so relationship outside school is not regarded as a problem.

### Results of the survey

Is survey, respondents were asked to assess the significance of different educational aspects of creative school culture; "In order to promote students' creativity better, I need..." in Likert scale. 11 expressions were completed in relation to the barriers for creativity, identified during interviews with innovative schools' practitioners. Two of them ("more knowledge about creativity" and "creativity assessment methods") are related to poor understanding of creativity. Other two ("more courage and self-confidence" and "possibility to learn and develop teacher's own creativity") characterizes creative teacher.

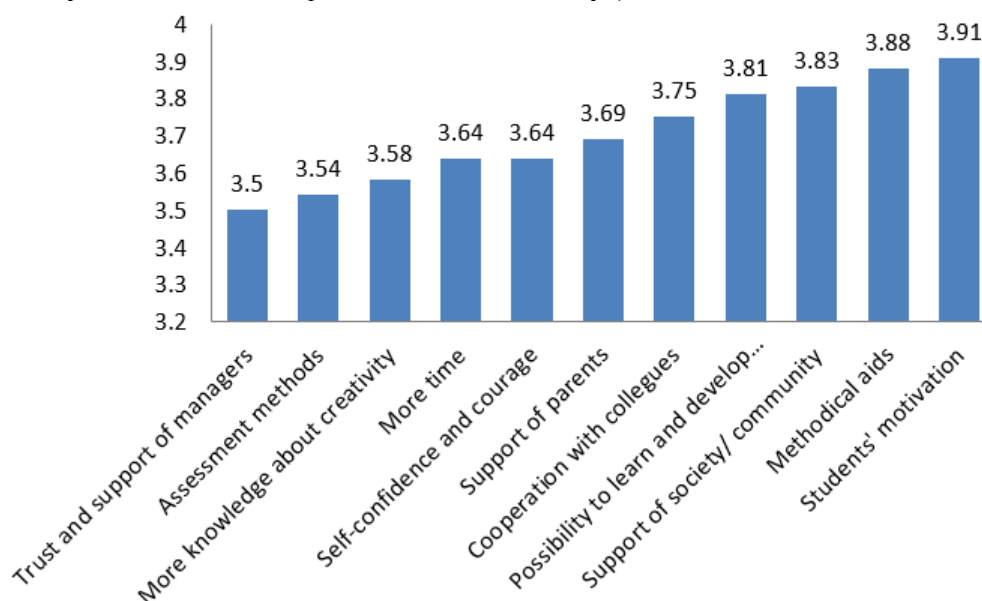


Figure 1. Respondents need for better promoting the students' creativity.

Four expressions ("more time", "accessibility of methodic aids", "support of school management" and "teachers' cooperation") characterize the responsibility of school managers - organization of the process

of learning). Two expressions relate to the support for creativity outside the school (“support of parents” and “support of community”), but the last one (“students’ motivation”) declares the responsibility of students. Figure 1 shows the results.

Survey shows, that teachers:

- are eager to learn and cultivate their own creativity;
- are open for more active cooperation with other teachers.

From this respect – they are open to the developing of creative school culture in context of their professional life.

The barriers for enhancing the school culture towards creativity can be seen in following discrepancies.

- From the idea “if students’ motivation would be better”, I can promote their creativity better” follows, that educators avoid the responsibility about students’ creativity motivation, or they do not believe they can impact it. But teachers believe results in effective or not-effective teaching (Hattie, 2009). Representatives of innovative school did not mention a lack of students’ motivation, at all. They believe, that students’ interest in creative activities depends on educators’ professionalism.
- Respondents see the opportunities mostly in increasing the resources from outside – contribution of community and ready, prepared methodical materials, not so much in increasing their own knowledge about creativity and its assessment methods (what is crucially important in context of culture as system of values). In contrast, experts of creative school culture find the solutions inside the school.
- The main problems identified by experienced practitioners and research (Skiba, Tan, 2015) are one- sided understanding of creativity and problems of its assessment are recognized as a barrier for promoting students’ creativity, but respondents of a survey do not feel the necessity to obtain deeper knowledge about it. It is discussable – does it mean that they understand the creativity phenomenon very well, or they want to protect themselves from feeling uncomfortable. The idea about the culture as subjective and irrational aspect of social and professional relationship, allows to interpret, that the second possibility is more appropriate.

From these findings, the possible educational activities for teacher initial education and professional development in order to expand creative school culture in Latvia, Estonia and Lithuania, follow (Hattie, 2012):

- the development of educators’ own creativity;
- the development of understanding the complexity of creativity, its’ criteria and evaluation methods;
- strengthening the teacher’s believes about their impact on creativity as students’ learning outcome.

## Conclusions

There are several levels of barriers for promoting the creativity in schools in Baltic States, indicated by the study. They could be related to different components of pedagogical process (students’ activities, teaching methods, content of learning, communication within school), and reasons outside the classroom – school management, financing, relationship with community, teachers cooperation. It means that each educator has particular responsibility in this process.

The most essential barriers for the development of students’ creativity in schools lays in school culture – educators’ attitudes towards traditions/ innovations as a values, teachers’ believes about their ability to impact students’ creativity and readiness of all involved persons to contribute into working together.

The study identified the main directions for teachers’ education. In order to appreciate creativity highly and promote it consequently, teacher needs:

- clear understanding about contradictions features and different manifestations of creativity.
- nurturing of teacher’s/ parent’s/ school leader’s own creativity, openness, self-confidence;
- obtaining the principles and practice of integrated learning; creativity assessment strategies; critical thinking; skills to organize psychologically safe environment; cooperation with colleagues.



**Bibliography**

1. *About project.* (2017). Creative School. [online]. [07.01.2017]. Available at <http://creativeschool.rpiva.lv/en/par-projektu/>
2. Bebre R. (red.). (2012). *Kreativitātes psiholoģija (Psychology of Creativity)*. Rīga, RPIVA. (in Latvian)
3. Beghetto R. A. (2010). Creativity in the classroom. In J. C. Kaufman, & R. J. Sternberg (Eds.). *Handbook of Creativity*. Cambridge, UK: Cambridge University Press.
4. Fullan M. (2016). *The New Meaning of Educational Change*. (5th ed.). New York: Routledge.
5. Hattie J. (2012). *Visible Learning for Teachers*. Maximizing Impact on Learning. New York, Routledge. [online]. [07.01.2017]. Available at <http://www.tdschools.org/wp-content/uploads/2013/08/The+Main+Idea+-+Visible+Learning+for+Teachers+-+April+2013.pdf>
6. Hattie J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*, New York: Routledge. [online]. [07.01.2017]. Available at <https://www.amazon.com/Visible-Learning-Synthesis-Meta-Analyses-Achievement/dp/0415476186>
7. Huber G. L., Roth J. W. (1999). *Finden oder suchen? Lehren und Lernen in Zeiten der Ungewissheit (To find or to search?)*. Schwangau: Ingeborg Huber Verlag.
8. Kaufman J.C., Sternberg R.J., (2010). *The Cambridge Handbook of creativity*. NY: Cambridge University Press. [online] [07.01.2017]. Available at <https://www.amazon.com/Cambridge-Handbook-Creativity-Handbooks-Psychology/dp/0521730252>
9. Skiba T., Tan M., Sternberg R.J., Grigorenko E.L. (2015). *Roads Not Taken, New Roads to Take: Looking for Creativity in the Classroom*. In Beghetto R.A., Kaufman J.C. (Eds.). *Nurturing Creativity in the Classroom*. UK: Cambridge University Press. [online] [07.01.2017]. Available at <http://dx.doi.org/10.1017/CBO9780511781629.013>
10. Олпорт Г. (2002 ). *Становление личности (Becoming a Person)*. Москва: Смысл.
11. Столович Л. (1999). *Философия. Эстетика. Смех. (Philosophy. Aesthetics. Laugh.)*. Санкт-Петербург – Тарту: Тартуский университет.



## Teacher Leaders as Agents of Innovation Diffusion

Anete Butkēviča<sup>1</sup> M. sc. soc.; Aija Zobena<sup>2</sup> Dr. sc. soc.

University of Latvia, Faculty of Social Sciences, Latvia<sup>1,2</sup>

[anete.butkevica@lu.lv](mailto:anete.butkevica@lu.lv)<sup>1</sup>; [aija.zobena@lu.lv](mailto:aija.zobena@lu.lv)<sup>2</sup>

**Abstract:** Educational science is putting forward teachers as leaders and change agents capable of bringing necessary improvements in how student learning and teachers' continuous professional development are taking place at the school. This article looks at how "teacher leaders" understand and organize their teaching and collaborate with their colleagues, and how by doing so promote diffusion of social innovations (e.g. new forms of professional relationships) and pedagogical innovations (e.g. teaching approaches in the classroom). Qualitative in-depth interviews were conducted with five teacher leaders from schools in urban and rural areas in Latvia. Additionally, two expert interviews were also conducted. Analysis of the results gives a descriptive explanation of how teacher leaders influence innovation diffusion in their school and district, what kind of obstacles they face, and what kind of other groups of agents are involved in this process. Findings show the most distinct aspect of teacher leader work in relation to the diffusion of innovations: a deep understanding of a need to experiment with new teaching approaches; continuous acquisition of new experience; an openness to share their experience with colleagues. In the light of these findings, the article discusses how the work of teacher leaders can be further supported by involving school administration to partake tasks related to not only administrative duties but also teaching and student learning. Further research is needed to uncover how such distributed leadership between teachers and school administration can support diffusion of new and useful teaching practices and help reach schools' organizational goals.

**Keywords:** teacher leaders, distributed leadership, innovation diffusion, school education.

### Introduction

Traditional understanding of leadership and authority follows the logic that these assets are acquired through formally assigned positions (e.g. the school principal). A change in this understanding shifted since teachers acquired the central role in educational changes and became change agents (Fullan, 1993). Viewing teachers as active agents who can take informal leadership roles began in the 1980s with the first attempts to conceptualize the meaning of what it is to be a "teacher leader" (Crowther, 1997). Initial research on this topic in Latvia have revealed how teacher leadership comes about: teacher leaders systematically collaborate in continuous professional development (CPD) networks on a national level, initiate joint learning groups and develop teaching materials for themselves and other teachers in the school, municipality and national level (Namsone, Čakāne, 2016). These preliminary findings indicate that teacher leaders have a special awareness of their professional learning needs and they also have a potential to act accordingly to these needs. The following teacher leadership definition is applied: teacher leadership is the process by which teachers, individually or collectively, influence their colleagues, principals, and other member of school communities to improve teaching and learning practices (York-Barr, Duke, 2004).

Innovations such as lesson study (Lewis, 2009), and teaching research groups (Paine, Fang, 2006) are fruitful and novel in the way that these professional development approaches help teachers identify their teaching problems, plan, observe and analyse lessons collaboratively, and bring in pedagogical innovations in the classroom. Throughout this article, such innovations will be conceptualized as social innovations which are new ideas that meet the social needs and create new social relationships or collaborations (Mulgan, Caulier-Grice, 2010). In the context of teacher leadership, social innovations are new forms of professional relationships among teachers with the goal to improve teaching. The diffusion of innovations (Rogers, 2003), in this respect, is the extent to which all teachers in the school are willing to adapt such collaboration forms. Exploring the link between teacher leaders and how innovations enter the teaching profession can offer useful insights into how the potential of teacher leadership can be unleashed.

The goal of this study is to explore how teacher leaders affect the diffusion of innovative teaching approaches and collaborative approaches among other teachers. To reach the goal, the following research questions were set up.

- How do teacher leaders affect the diffusion of innovations among other teachers?
- What other agents are involved in this process and what is their influence?
- What promotes and what inhibits teacher leaders to affect the process of innovation diffusion?

## Methodology

A qualitative research design was applied to obtain data that reveals the qualitative features of teacher leader's attitudes, activities, and working contexts related to innovative teaching approaches and collaborative approaches in their profession. In-depth semi-structured interviews were chosen as a method that allows representing the interviewees' point of view and how they construct meaning based on their social realities (Harvey, MacDonald, 1993, 199). The same line of reasoning guided the design and execution of expert interviews, except these interviews gave an education professional's insight about teacher leaders.

The field work started off with a semi-structured in-depth expert interview with a senior researcher who acts as director of the teacher professional development program running under The Interdisciplinary Center for Educational Innovation (ICEI) of the University of Latvia. ICEI is a leading educational organization implementing CPD programs for teachers and organizing teacher leader workshops. An expert interview therefore functions as an initial source for other potential informants to be interviewed for research purposes (Yin, 2013), namely teacher leaders. An additional expert interview is conducted with a deputy official representing one municipality's board of education. The specific municipality was chosen as a peculiar case representing systematic top-down implementation of innovations in schools and as a teacher community with emerging teacher leaders. Both expert interviews functioned as a method to explore the emergence of Latvian teacher leaders, the innovations they are dealing with and the organizational contexts they are facing in schools.

The main data sources were in-depth semi-structured interviews with five teacher leaders, each representing a different school. Interviewees were selected from a list of 30 teacher leaders assigned by ICEI representing both small and large schools and both rural and urban areas in Latvia. First, three interviewees were chosen according to the expert's suggestions based on potential amount and depth of information and experience these teacher leaders could provide. Then, two additional interviews were made. The interviewed teacher leaders represent the following subjects: mathematics, chemistry, physics, and Latvian language. All interviews were conducted in the period of April 13 and May 11, 2016. The average length of an interview was one hour. Further interviews were not conducted because data saturation was reached, as became evident in preliminary analysis.

The interviews were coded and structured in topical categories and sub-categories that match the theoretical assumptions of teacher leaders and the posed research questions. This allows to reveal what kind of topical elements are reoccurring and whether there are some contrasting topical themes. Coding was done in two cycles. In the first cycle structural coding was applied to all of the interview material in order to reveal major topical categories; second cycle of coding served as reordering of acquired relevant categories developing a more select and refined list of broader categories (Saldaña, 2009).

## Results and discussion

All the interviewed teacher leaders express a very open attitude towards anything innovative in their work. They are willing to explore new approaches and this aspect of teacher leaders is closely linked to their willingness to experiment in their lessons. In the light of these results, teacher leaders can be conceptualized as change agents who take up innovative teaching in order to create a more productive learning process for students (Fullan, 1993). As one teacher leader puts it:

*"New things are coming – I am not scared of it, quite the opposite, it is a challenge and I like to use it and see what works with my students [...]. At the beginning there was uncertainty but the necessity [of innovations] was obvious."* [chemistry teacher leader from an urban school].

To share an innovative experience, teachers first need to acquire it and the quote above shows how a teacher leader is reflecting upon his/her relation with novelty and his/her understanding how adapting innovations can benefit to students' learning experience. Therefore, an open attitude to experimenting with innovative approaches is a prerequisite for sharing with others, which can then contribute to building a learning community (Childs-Bowen, Moller, 2000). Also, teacher leaders show an understanding of the difference between sharing information and sharing their authentic practical experiences. Sharing practical experiences helps other teachers understand how different teaching approaches come about in real classroom environments. In a context where multiple teachers experiment with new teaching approaches, sharing authentic experiences helps to overcome uncertainty that innovations may bring.

*"It is useless to transfer information. Hearing something new, then trying it out for yourself, and then talking about it with others – that is useful. A formal information transfer model is useless, what is in it for me? It cannot help me to develop a new lesson plan. We hear one thing, understand another one, then we do something completely else."* [chemistry teacher leader from a rural school].

An interesting aspect of the interviewed teacher leaders is that they do not view sharing innovative experiences with others as a goal in itself. This can be due to the informal status of a teacher leader and it is not their formal duty to conduct such actions. Above mentioned teacher leadership aspects imply also that all interviewed teacher leaders maintain a close link to teaching. This is crucial in the eyes of other teachers: teacher leader's instructional authority can mostly be based on the fact that they are active classroom practitioners (Snell, Swanson, 2000, 4).

*"If the teacher is not practicing classroom teaching then other teachers ignore them."* [expert from ICEI].

Next, interview data reveal how teacher leaders form small learning groups and sometimes lead these learning groups. This action illustrates the fact that teacher leaders take initiative to not only further their own learning and professional growth but also others'. In additional cases teacher leaders are formally assigned to lead learning groups.

An important aspect brought by teacher leaders and learning groups is the moral and collegial support. As mentioned before, experimenting implies that there is a dimension of uncertainty and risk. A safe space is important for the beginning phase of adapting innovations because this phase has the highest level of uncertainty and risk. Partaking in experimentation through collaboration with colleagues creates a safe space for professional growth (Lieberman, Miller, 2005, 161). It should be noted that teacher leaders individually cannot provide sufficient support, it is rather the learning group that provides this support. The mechanism continues further – when teachers have a collegial support and a safe space, it promotes their professional assurance to experiment with new teaching ideas and strategies (Norwich, Ylonen, 2013; Sibbald, 2009). Another benefit of learning groups is forming links among different subjects that create a more integrated work among teachers teaching different subjects and grades.

To sum up and to answer the first research question *How do teacher leaders affect the diffusion of innovations among other teachers?* – teacher leaders are supporting the creation of a collective environment at the school, namely, learning communities in the form of learning groups. Previous research supports the link between teacher leaders and formation of collegial environments (Crowther, 1997; Fairman, Mackenzie, 2012; Frost, Durrant, 2003). It is those learning groups that give a collegial support for teachers to experiment with innovations, receive feedback about their teaching practices, and give or receive emotional support. Other research has shown that sharing practical experiences helps teacher develop professionally (Muijs, Harris, 2006, 970). It can be suggested that teacher leaders working in teacher learning groups support the diffusion of innovations.

Taken together, these elements already reveal one of the main agents involved in the diffusion of innovations – other teachers who work in the same school, and may or may not adopt innovations. Further analyses of the interview data reveal that the following agents influence the diffusion of innovations in one way or another: expert-coaches from ICEI, school administration, students, and the municipality. The nature of the influence wielded by each of these groups' will be described shortly.

Innovations in the teaching profession inevitably imply changes and the school's administration has the authority to help bring the necessary changes to life. The administration can support teacher collaboration by making it more structured, meaningful, and organized in the long term. The interviewed

teacher leaders pointed out that the school administration can help with planning appropriate time schedules so that teachers can gather for lesson observations and organize study groups.

School administrations can give emotional support in the form of recognition and expressing gratitude, one of the aspects that teacher leaders implied to be lacking but if received, it would make a positive impact on their work. Further, the administration's encouragement and involvement should come in the form of supporting teacher's needs rather than impose innovations or changes that they do not request. In general, school administrations should focus their responsibilities more on improving teacher learning and professional development rather than just purely managerial tasks or technical governance of the school. In this case, leadership should not be practiced at the individual level but rather at the school level. School leadership should be distributed among teacher leaders and administrators, especially for improving teaching instruction (Spillane, Halverson, 2001). In previous research, support from school administration has been put forward as paramount to successful teacher leadership (Wenner, Campbell, 2016). As the following quote from an expert's interview reveals, school administration should be regarded as the most influential group of agents in determining innovation diffusion and successful work of teacher leaders:

*"Shaping beliefs and giving encouragement – the role of management is substantial, it is shaping values, and the organizational culture in the school, and determines whether changes will be adopted."* [education board deputy official].

The second most influential group of agents affecting innovation diffusion consists of other teachers. As it can be concluded from the interview analysis, teachers who are reluctant to work with innovations do not negatively affect the work of teacher leaders. Teachers who are more willing to adapt social innovations – learning groups and work together to share their experience are affecting innovation diffusion more effectively than teachers who avoid innovations and changes.

Municipality education departments may affect teacher leaders' work and innovation diffusion in various ways. As interviewed teacher leaders and experts pointed out, municipalities can help by forming partnerships with school administration in order to help the school in identify specializations, goals and problematic areas in need of improvement. As one of the experts explained, the municipality can help to identify and use the social and human resources available in the school, as it is happening in one of Latvia's municipalities. Municipalities can influence innovation diffusion with motivational instruments. For example, according to specified criteria, school principals and teachers with distinctive achievements get monetary funding which works as an extra motivation to participate in learning groups. Another motivational function which the municipality fulfils is to publicize teacher's achievements in the local media – television and newspapers. This substantially contributes to teacher's self-confidence and motivation to continue their work (Zinn, 1997, 12). The municipality is also financially helping teachers to travel to other district schools to share their experience, thereby nurturing inter-school collaboration.

Expert-coaches mostly help by providing theoretical and practical knowledge, giving emotional support as well as an initial assurance that innovations in teaching practices are necessary. Overall, expert-coaches serve as an important support agent for teacher's individual professional development.

*"We are very close to ICEI people, it is a friend's shoulder and support, a mechanism that lifts me up [...] I can call them at any moment and find out anything that I need to know. They [experts] have immersed in the workings of teaching methods. If I have doubts I can turn to them."* [chemistry teacher leader from a rural school].

A peculiar group of agents are the students. On the one hand, students can be supporters of innovation diffusion because in some sense they demand new things in the classroom – if the teacher brings in some novelty then students appreciate it and demand it also from other teachers. This can work as an extra motivation for slow adopters to start bringing in new things in their teaching practices. Students also quite quickly notice if teachers have been working together to implement integrated teaching approaches across different subjects. Teacher leaders reported that when bringing in new teaching approaches in the classroom, students positively changed their attitudes. Similar findings have been reported before – teacher leaders positively impact the environment of the classroom and benefit to student's emotional development (Cheong-Cheng, 1994, 70). As one teacher leader puts it:

*"Changes in attitudes can be observed immediately. The lesson has become interesting, they have motivation and anticipate the next lesson. The teacher has become unpredictable – which means more interesting for the student."* [physics teacher leader from a rural school].

On the other hand, students can also react negatively to innovations especially if only one teacher in the school implements in the classroom something which students are not accustomed to, for example, working in groups or creative thinking. It can be concluded that under the right conditions (teachers across multiple subjects implementing innovative teaching) students can contribute to the diffusion of innovations. This in turn requires teachers to systematically collaborate and design integrated teaching approaches across subjects.

All the interviewed teacher leaders point out a need for changes in attitudes and beliefs regarding how teaching should be conducted, and the teacher's profession in general. They also agree that these changes should happen gradually and they are already witnessing some changes (although they are happening slowly). What inhibits innovation diffusion the most is the slow change in beliefs and attitudes toward how teachers' collaborative work is organized, and toward the new teaching approaches introduced in the classroom. More specifically, the negative attitude toward lesson observation is one of the key factors that hinder the formation of learning groups. In this light, teachers should be encouraged to collaborate and be more open to show other colleagues how their teaching takes place, but it should happen on a voluntary basis. Traditionally, teachers perceive lesson observation as a control instrument and assessment method conducted by the school administration in order to determine the effectiveness and productivity of a teacher. Another hindering factor is the lack of time, and the key agent that can help with this setback is the school administration – to schedule additional time for teachers to conduct lesson observation analysis and learning groups.

## Conclusions

The following conclusions can be made regarding how teacher leadership affects the diffusion of innovation:

- teacher leaders gain experience through real-world experimentation, and are willing to share it with other teachers;
- teacher leaders foster a positive collegial environment at the school: a safe space for teachers to experiment and share their practical experiences, give and receive feedback and emotional support;
- gathering practical experience and jointly learning in a collegial environment helps to deal with the risks and uncertainty that innovations bring. Therefore, these aspects are positively affecting the diffusion of innovations;
- a collegial environment involving teacher leaders, other teachers in the school as well as school administration is necessary for mutual support when implementing innovations;
- a single teacher leader cannot diffuse innovations as effectively. Teacher leaders need support from their peer teachers, school administration and also the municipality.

In order to foster professional learning and implement innovations, the school administration should take on duties that are related to teachers' learning needs. The school administration can remove what inhibits innovation diffusion by doing the following actions:

- discover and support teacher leaders in their schools;
- attract support from municipalities;
- get advice from educational experts;
- support both intra-school and inter-school collaboration among teachers;
- plan appropriate schedules for teachers to organize lesson observations and learning groups;
- provide financial support and other incentives for teachers willing to learn and grow professionally;
- make use of teacher leaders' and other teachers' in-depth knowledge about the necessary innovations in their teaching and encourage them to participate in schools' organizational decision making e.g. foster distributed leadership in the school.

## Bibliography

1. Cheong-Cheng Y. (1994). Teacher Leadership Style: A Classroom-Level Study. *Journal of Educational Administration*, Vol. 32 (3), pp. 54 – 71. [online] [06.11.2016]. Available at <http://www.emeraldinsight.com/doi/full/10.1108/09578239410063111>
2. Childs-Bowen D., Moller G., Scrivner J. (2000). Principals: Leaders of Leaders. *NASSP Bulletin*, Vol. 84 (616), pp. 27 – 34. doi: 10.1177/019263650008461606
3. Crowther F. (1997). Teachers as Leaders - an Exploratory Framework. *International Journal of Educational Management*, Vol. 11 (1), pp. 6 – 13. [online] [06.11.2016]. Available at <http://dx.doi.org/10.1108/09513549710155410>
4. Fairman J. C., Mackenzie S. V. (2012). Spheres of Teacher Leadership Action for Learning. *Professional Development in Education*, Vol. 38 (2), pp. 229 – 246. [online] [06.11.2016]. Available at <https://umaine.edu/edhd/wp-content/uploads/sites/54/2016/05/Spheres-of-teacher-leadership-action-for-learning.pdf>
5. Frost D., Durrant J. (2003). Teacher Leadership: Rationale, Strategy and Impact. *School Leadership & Management*, Vol. 23 (2), pp. 173 – 186. [online] [06.11.2016]. Available at <http://classes.uleth.ca/200503/educ5850ol/TeacherLeadership.pdf>
6. Fullan M.G. (1993). Why Teachers Must Become Change Agents. *Educational Leadership*, Vol. 50(6), pp. 1 – 13. [online] [06.11.2016]. Available at <http://michaelfullan.ca/wp-content/uploads/2016/06/13396031680.pdf>
7. Harvey L., MacDonald M. (1993). *Doing Sociology: A Practical Introduction*. Hampshire: Palgrave Macmillan.
8. Lewis C. (2009). What is the Nature of Knowledge Development in Lesson Study? *Educational Action Research*, Vol. 17 (1), pp. 95 – 110. [online] [06.11.2016]. Available at <http://elac.ex.ac.uk/lessonstudymld/userfiles/Lewis%20C%202009.pdf>
9. Lieberman A., Miller L. (2005). Teachers as Leaders. *The Educational Forum*, Vol. 69 (2), pp. 151 – 162. [online] [06.11.2016]. Available at <http://files.eric.ed.gov/fulltext/EJ683740.pdf>
10. Muijs D., Harris A. (2006). Teacher Led School Improvement: Teacher Leadership in the UK. *Teaching and Teacher education*, Vol. 22 (8), pp. 961 – 972. [online] [06.11.2016]. Available at [https://www.researchgate.net/profile/Alma\\_Harris/publication/223485520\\_Teacher\\_led\\_school\\_improvement\\_Teacher\\_leadership\\_in\\_the\\_UK/links/0046352afb73b2e81b000000.pdf](https://www.researchgate.net/profile/Alma_Harris/publication/223485520_Teacher_led_school_improvement_Teacher_leadership_in_the_UK/links/0046352afb73b2e81b000000.pdf)
11. Murray R., Caulier-Grice J., Mulgan G., (2010). *The Open Book of Social Innovation*. United Kingdom: Nesta and The Young Foundation. [online] [06.11.2016]. Available at [https://www.nesta.org.uk/sites/default/files/the\\_open\\_book\\_of\\_social\\_innovation.pdf](https://www.nesta.org.uk/sites/default/files/the_open_book_of_social_innovation.pdf)
12. Namsone D., Čakāne L., Sarceviča-Kalviške, D. (2016). Teacher Teams and Schools Become Leaders to Disseminate Innovative Practice. In Proceedings of the International Scientific Conference *Society. Integration. Education*. Vol. 2. Rēzekne: Rēzekne Academy of Technologies, pp. 208 – 222. [online] [06.11.2016]. Available at <http://journals.ru.lv/index.php/SIE/article/view/1393/1741>
13. Norwich B., Ylonen A. (2013). Design Based Research to Develop the Teaching of Pupils with Moderate Learning Difficulties (MLD): Evaluating Lesson Study in Terms of Pupil, Teacher and School Outcomes. *Teaching and Teacher Education*, Vol. 34, pp. 162 – 73. [online] [06.11.2016]. Available at <http://www.sciencedirect.com/science/article/pii/S0742051X13000796>
14. Paine L. W., Fang Y. (2006). Reform as Hybrid Model of Teaching and Teacher development in China. *International Journal of Educational Research*, Vol. 45 (4 – 5), pp. 279-289. [online] [06.11.2016]. Available at <https://pdfs.semanticscholar.org/0093/d6d9db6c9520721f20535869c8a725b4aab6.pdf>
15. Rogers E.M. (2003). *Diffusion of Innovations* (5th ed.). New York: Free Press.
16. Saldaña J. (2009). *The Coding Manual for Qualitative Researchers*. London: SAGE publication.
17. Sibbald T. (2009). The Relationship between Lesson Study and Self-efficacy. *School Science and Mathematics*, Vol. 109 (8), pp. 450 – 460. doi: 10.1111/j.1949-8594.2009.tb18292.x
18. Snell J., Swanson J. (2000). The Essential Knowledge and Skills of Teacher Leaders: A Search for a Conceptual Framework. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA. [online] [06.11.2016]. Available at <http://files.eric.ed.gov/fulltext/ED444958.pdf>

19. Spillane J. P., Halverson R., Diamond J. B. (2001). Investigating School Leadership Practice: A Distributed Perspective. *Educational Researcher*, Vol. 30 (3), pp. 23 – 28. [online] [06.11.2016]. Available at [http://www.jstor.org/stable/3594470?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/3594470?seq=1#page_scan_tab_contents)
20. Wenner J. A., Campbell T. (2016). The Theoretical and Empirical Basis of Teacher Leadership: A Review of the Literature. *Review of Educational Research*, pp. 1 – 38. [online] [06.11.2016]. Available at <http://journals.sagepub.com/doi/full/10.3102/0034654316653478>
21. Yin R. K. (2013). *Case study research: Design and Methods*. (5th ed.). Sage Publications.
22. York-Barr J., Duke K. (2004). What do we know about Teacher Leadership? Findings from Two Decades of Scholarship. *Review of Educational Research*, Vol. 74 (3), pp. 255 – 316. doi: 10.3102/00346543074003255 [online] [06.11.2016]. Available at <http://www.psychosphere.com/What%20do%20we%20know%20about%20teacher%20leadership%20by%20York-Barr.pdf>
23. Zinn L. F. (1997). Supports and Barriers to Teacher Leadership: Reports of Teacher Leaders. Paper presented at the annual meeting of the American Educational Research Association Chicago, Illinois. [online] [06.11.2016]. Available at <http://files.eric.ed.gov/fulltext/ED408259.pdf>

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## Prospective Teachers' Opinion about the Content of Modern Basic Education in the Science Context

**Dagnija Cēdere**<sup>1</sup> Dr. chem.; **Inese Jurgena**<sup>2</sup> Dr. paed.; **Sandra Kalniņa**<sup>3</sup>, Mg. paed., Mg. phil.  
University of Latvia, Latvia<sup>1,3</sup>; Riga Teacher Training and Educational Management Academy, Latvia<sup>2</sup>  
[dagnija.cedere@lu.lv](mailto:dagnija.cedere@lu.lv)<sup>1</sup>; [inese.jurgena@rpiva.lv](mailto:inese.jurgena@rpiva.lv)<sup>2</sup>; [sandra.kalnina@lu.lv](mailto:sandra.kalnina@lu.lv)<sup>3</sup>

**Abstract:** The development of society is closely connected with science and technology education; however, many international and national studies reveal the contradiction between the increasing societal needs and the insufficient quality of education in this field. The science knowledge acquired at school often is formal; it is not based on understanding and students learn without interest. The study is focused on the following theses: modern society needs scientific literacy; learning without interest is unproductive; all subject teachers must give support to education of science literate young people. The aim of the study is to find out the attitude of prospective teachers to science and their opinion about what knowledge and skills in science correspond to interests and needs of Grade 9 students nowadays. Students from two higher education institutions have been surveyed; the questionnaire included both closed and open questions. The 4 point Likert scale is used in closed questions. The participants of the study are prospective teachers who are not connected with teaching science subjects. The survey was organized on-line. SPSS program have been used for data processing. The findings show that on the whole prospective teachers' value highly the importance of science education; besides there is no statistically significant difference between the prospective teachers representing different specialities. Respondents' opinion on some of the science acquisition issues differs depending on their different work and life experience. Unequivocally cognitive interest has been recognized as the learning motive as well as the teacher's role in the promotion of the interest. The study gave a possibility to attract the attention of future teachers to the importance of science education. The obtained results will be further applied in teacher education in higher education institutions.

**Keywords:** basic school, interest, knowledge, prospective teachers, science education, skills.

### Introduction

The development of the society is closely connected with the development of science and technology education; however, many international and national studies reveal a contradiction between the increasing societal needs and insufficient quality of education in this field. Nowadays the people's ability to orient quickly in the changing world applying the knowledge and skills as well as the creative self-development abilities has become more significant (Briede, Pēks, 2014; Science Education in Europe..., 2011). Many specialists on education admit that school graduates frequently have poorly developed short-term memory; they fail to see the main idea and generalize; their knowledge is superficial and fragmentary. They lack the contextual knowledge characteristic to science; they have low interest in science (Cedere, Jurgena, Gedrovics, 2015; Potvin, Hasni, 2014). The lack of knowledge and skills in science and mathematics today is considered a threat to the modern technology and science-driven economics (Pellegrino, Hilton, 2012; Draft Science..., 2013). These facts encourage seeking possibilities to improve the learning content in science and mathematics. *The aim of the article* is to find out the prospective teachers' opinion about the role of science in the all-round education process of students in basic school and to evaluate factors that influence a full-fledged acquisition of the learning content.

### Theoretical substantiation of the problem

The learning content is the human experience that is specified according to the learner's age peculiarities, society and the age and which is usually divided (grouped) basing on its thematic constituent parts in school subjects, study courses and thematic cycles. The learning content includes concrete knowledge, skills, performance experience, culture and social experience, the experience of intellectual values, conviction and the formation of attitudes that the learners acquires in the teaching/learning process. During the didactic process its subjects- the teacher and the learner as the components of this process come into mutual relations of dependence, conditionality and necessity (Žogla, 2001, 82). The teaching/learning content is one of the components uniting these two subjects. This is a specific bipartite formation. Firstly, it is formed by the knowledge, skills envisaged in the programme that the student has to acquire and character features are nurtured and developed, and,



secondly, the teaching/learning content, the teacher's support - the content of recommendations, the demonstrated model, introduction of the student in the independent work. The teaching/learning content is also the intellectual values that the student acquires with the teacher's help (Žogla, 2001, 96-97).

The selection of the teaching/learning content has always been an intrinsic problem for the teachers. Immediate bringing students closer to life, work and nature takes place in science subjects. The teaching/learning content should correspond to several provisions –the level of difficulty that is appropriate to students' age group; it should facilitate the learning motivation and interest, and adequate to the teaching methods (Geidžs, Berliners, 2000; Potvin, Hasni, 2014). Modern science education content has been elaborated in a united system in physics, chemistry, biology and mathematics so that the student formed an undivided understanding about the processes and phenomena in nature as well as developed science-cognitive skills. The context of the learning content helps to understand the essence of what has been acquired and gain experience of applying the knowledge in real life situations. Today along with the subject knowledge the student also obtains key skills necessary for life (Meyer, 2008; Namsone, Čakāne, 2011; Osborne, Simon, 2003).

Modern science learning is focussed on four reciprocally connected aspects (Draft Science..., 2013):

- *content*: both the current and historical personal, local, national and global issues that need the understanding about science and technologies;
- *knowledge*: understanding about the most intrinsic facts, concepts, explanatory theories that form the foundation of scientific knowledge. Such knowledge comprises both the knowledge about nature and technological artefacts (content knowledge), the knowledge about how such knowledge emerges (procedural knowledge) and the understanding about rational substantiation and application of these procedures (epistemic knowledge);
- *skills*: the ability to explain facts scientifically, to evaluate and perform scientific (research) studies, to interpret data and evidence scientifically;
- *attitudes*: the set of attitudes towards science - interest in science and technologies, approval of scientific approach to the research, awareness and understanding of the environment issues.

Higher education institutions and the lecturer's pedagogical work in them form the education environment in which the future specialists' readiness for the professional activity develops. The readiness for the professional activity is formed by the set of qualities that is the result of the accumulated positive experience and the internal potential of successful pedagogical activity as well as the state of resources for a purposeful activity (Baltušīte, 2012), therefore finding out exactly the students' opinion is important in order to explore the significance of prospective teachers' attitude to science in the education of prospective teachers of different specializations (Muijs, Reynolds, 2012). The studies on the teaching/learning content most frequently involve students or teachers who are the immediate participants of the teaching/learning process (Cedere, Jurgena, Gedrovics, 2015; Nehring, Nowak, 2015; Potvin, Hasni, 2014). However, the opinion of students- the prospective teachers has been little studied so far.

## Methodology

Continuing the previously performed studies (Cēdere, Jurgena, Helmane, 2015) students - the prospective teachers whose chosen speciality is not directly connected with teaching of science subjects and mathematics have been surveyed. Respondents' general social and pedagogical psychological experience not their knowledge gained during the studies at the higher education institution has been taken into consideration when forming the research sample. Besides, they have not had a direct contact with science subjects in their study process. Such a sampling of respondents would allow judging more objectively about the place of science in basic education.

The survey has tried to find out students - the prospective teachers' opinion about how Grade 9 students should answer questions about the learning of science according to the real provisions of education and national needs. Such a research position would allow treating the learning content "from the distance", i.e., without involving the immediate participants of this teaching/learning process- Grade 9 students and teachers of science subjects.

The following research questions have been set:

- What is the prospective teachers' opinion about the importance of science acquisition in basic school?

- Does the teaching/learning content of science subjects (biology, chemistry and physics) correspond to the students' needs and interests in basic school?

The questionnaire of the survey is based on the studies performed earlier (Cēdere, Jurgena, Helmane, 2015) and documents regulating education in Latvia (Noteikumi par..., 2014). The questionnaire contains closed and open questions. The closed questions correspond to four value Likert scale and are coded: 1 – no, 2 – rather no, 3 – rather yes, 4 – yes. The questionnaire includes two groups of questions: A) Does the student want to learn (find out about) science? B) How does the student learn science? The open questions are included in the questionnaire to receive additional information about the learning content in science and its implementation in schools that would help to evaluate the teaching/learning process and the factors influencing it more versatile way.

The reliability (inter-item consistency) of the quantitative part of the questionnaire according to Cronbach alpha coefficient was 0.884. The questionnaire was made on the internet using Google disc, students answered questions online. The survey was carried out in October 2016.

The participants of the survey were 151 students from two higher education institutions of Latvia: Riga Teacher Training and Educational Management Academy and University of Latvia, of them 136 were female and 15 male students. 51.7 % of the total number of respondents are full time students and 48.3 % - part time students. Different pedagogy specializations have been represented. The largest respondent groups are: future preschool teachers– 25.8 %, teachers of the creative sectors (dances, music, visual art)– 21.9 %, elementary school teachers – 12.6 %. The respondents' average age is 25.8 years, majority of them (72.4 %) are first year students.

The data analysis was performed using the statistical software SPSS 23 program. The mean values of answers  $M$  ( $1 \leq M \leq 4$ ) were used to describe the respondents' opinions. In order to assess the credibility of the differences of mean values in two reciprocally independent groups the t-test analysis of the independent samples was used. Correlation analysis was used for determining the strength of the relationship between two variables. Cronbach Alpha Test was used for stating the reliability of the questionnaire.

## Results and discussion

Results received from the survey data demonstrate that on the whole the prospective teachers have the understanding about the importance of science in ensuring the economic and social growth of Latvia. There are no significant differences between the answers given by the full time and part time students as well as students of different specializations. The issue that knowledge in science is needed in any walk of life is confirmed by the answers given by prospective teachers of dance and rhythmic, music, visual art and teachers of other specializations not connected with science (*"The wider is the person's inner world and knowledge, the more valuable is the person..."*, *"Chemistry and physics is also in art"*). Significant differences according to the data of the t test analysis are only in the question about whether Grade 9 student should be able to make mathematical equations in order to solve practical tasks (Item A8). The answers given by students of creative specializations ( $M = 1.73$ ) are lower than those given by other respondents ( $M = 2.38$ );  $t(149) = -3.498$ ,  $p = 0.001$ ). It can be added that the mean answer of the whole respondents' sample is *rather no*, which means that according to the prospective teachers such integrated skills should not be asked from Grade 9 students.

As the mean values of the answers demonstrate, Grade 9 students should have an interest to find out about simple natural phenomena in order to be able to explain themselves, for example, why the forest smells differently after the rain ( $M=3.41$ ), in order to know how human organism functions ( $M=3.50$ ) and how drinking water is purified ( $M=3.37$ ) (Table 1).

Table 1

**Prospective teachers' opinion about Grade 9 students' cognitive interest in science**  
**(1 ≤ M ≤ 4)**

No	Description of indicators (Group A)	Formulation of indicators	M	SD
1	A1	The interest to find out why the air after the thunderstorm smells differently	3.41	0.751
2	A2	The willingness to learn more about growing and reproduction of plants	2.84	0.888
3	A3	The interest in the constitution and functions of human organism	3.50	0.692
4	A5	The willingness to understand why the soapy solution is not clear	2.87	1.024
5	A6	The willingness to understand why the glass vessel breaks if water freezes in it	3.17	0.978
6	A7	The interest to learn how drinking water is purified	3.37	0.869
7	A8	Pleasure in solving practical tasks with the help of mathematical equations	2.24	0.985
8	A9	Agreeing on the importance of science knowledge in the national development	3.44	0.726

The second group of questions characterizes the learning content of science subjects. According to the constructivism approach (Brooks, Brooks, 1993) which lies at the basis of learning science, the student has to acquire conceptual knowledge, the skill to carry out an experiment, to explore, analyse and generalize. This group of questions demonstrates how students learn, resp., what the organization of the teaching/learning process is and to what extent students have learned to apply their knowledge in biology, chemistry, physics and mathematics in the solution of simple, practical problems. The respondents' answers show also the opinion about the depth of the cognition in different areas connected with science and mathematics. Is student of Grade 9 willing to learn anything that requires effort? (Table 2).

Assessing the real situation in the teaching/learning process of science in school respondents acknowledge that Grade 9 students should possess certain skills of making observations in nature and their everyday life and to explain them applying the knowledge and skills gained at school. High mean assessment ( $M=3.07$ ), which means *rather yes* and *yes*, is given to the item B3 about the skill to explain natural phenomena (volcanos, floods, acid rain, fire). Similarly, ( $M=3.09$ ) respondents are certain that exploring some phenomenon students should have the interest to learn more about it (B9). Less significance is given to the exploration of nature during the free, out-of-school time ( $M=2.34$ ), which possibly for the majority of students is connected with limited possibilities to perform such an exploration. Respondents marking "*rather yes*" ( $M=2.99$ ) admit that putting effort in learning sometimes is needed (B10).

Taking into consideration that almost half of respondents are part time students and the range of respondents age is rather broad (18-42 years), respondents were divided into two groups. Group 1 – the first year students who continue their education immediately after having graduated from school, age – 18-19 years, group 2 – aged 20 and older.

Table 2

**Prospective teachers' opinion about the science learning content in basic school  
( $1 \leq M \leq 4$ )**

No	Description of indicators (Group B)	Formulation of indicators	M	SD
1	B3	The skill to explain natural phenomena	3.07	0.806
2	B4	The skill to find out the causes of the natural phenomenon	2.88	0.730
3	B5	The skill to analyse problems in nature or everyday life	2.72	0.750
4	B6	The skill to predict the solution of the nature problem	2.34	0.824
5	B8	Enthusiasm in relation to science	2.95	0.823
6	B9	Interest that emerges in the process of exploration	3.09	0.791
7	B10	Selection of hard but interesting tasks	2.99	0.852
8	B11	Spending the free time on the exploration of nature	2.34	0.901
9	B12	Understanding about the work of a professional researcher of the nature	2.30	0.885

It is significant that actually mean values of all answers in group 1 are lower than in group 2 which comprises respondents with greater life and work experience. The answers of both these independent groups were compared using the *t* test. Statistically significant differences were stated about several indicators at  $\alpha = 0.05$ :

- item A5:  $t(104) = -2.610$ ;  $p = 0.010$ ;
- item A8:  $t(104) = -2.892$ ;  $p = 0.005$ ;
- item B11:  $t(104) = -2.449$ ;  $p = 0.016$ ;
- item B12:  $t(104) = -2.196$ ;  $p = 0.030$ .

Such results demonstrate that understanding of science as well as apprehension of what should be learnt at school comes with experience (years) and self-experience. Self-experience is the component of consciousness that in an integrated process of the perception, understanding and experiencing the facts, things, phenomena creates new values and influences the person's action in the present and the future. "New (secondary) self-experience does not exist along with the previous (primary) self-experience but interacts with" (Giese, 2010, 87). Self-experience for students who already work in preschools, run dance and rhythmic lessons, carry out pedagogical work for promoting students' musical or art development is their knowledge, skills and attitudes that they have gained in life and which have become personally meaningful (Brigmane, 2014).

As demonstrated by students' answers to the open questions they see the necessity of the constructivism teaching approach in the science acquisition process relating it to the application of students' knowledge in everyday life and the teacher's creative approach to the solution of science problems. Prospective teachers admit: "*Science is a perfect subject in which one could explore what is being taught- go out and explore nature, carry out research experiments*", "*...the teacher should pay more attention to the fact that students are aware of and understand the importance of science in practical life*", "*... for the teaching/learning process to be smooth and successful, the teacher's and student's cooperation and initiative is important*". Many respondents recalling their own science lessons at school appreciate that "*...we had practical classes with microscopes*", "*...we had to collect tulip blossoms...*".

Respondents in their recommendations about improving the science education process in school have most frequently mentioned words *interest*, *to facilitate interest* ( $n=247$ ), *practical life*, *practical activity*, *practice* ( $n = 154$ ), *creative*, *to teach creatively*, *creative lessons* ( $n=135$ ). The necessity to develop inquiry skills has been emphasized comparatively less ( $n=63$ ) which could serve as evidence for the isolation of this concept or is small popularity among the "science non-specialists". The results of the correlation analysis also indirectly show it –a relatively weak correlation between the interest to explore

nature and its processes (A1, A6) and the research (inquiry) activity (finding the causes – B4, problem solution – B5), see Table 1 and Table 2. Correlation coefficient  $r = 0.13 \dots 0.32$  has been found. The necessity of interest in nature and its processes is assessed considerably higher than the practical, inquiry cognition. Respondents' opinions about the Grade 9 students' insufficient interest in science are reasonable (Cedere, Jurgena, Gedrovics, 2015; Cēdere, Jurgena, Helmane, 2015; Potvin, Hasni, 2014), this problem still exists. Comparing these results with the previously performed study (Cēdere, Jurgena, Helmane, 2015), in which the questions were answered by school students' differences between the mean values of answers given by Grade 9 students and prospective teachers' sample were identified. In teachers' view Grade 9 students' perseverance carrying out a study should be higher. Students should have greater interest in the processes and phenomena in nature and practical life. It is typical that the difference is greater between the opinions of group 2 respondents (older prospective students) and the students. Equally high assessment is given to the importance of the science and mathematics knowledge in the national development. Some statistically significant differences between the students' real attitude to science (school students' opinion) and the prospective students' opinion can be mentioned. To find out the differences t test was used (at  $\alpha = 0.05$ ):

- on stability of interest and perseverance in inquiry (B9:  $t(400) = 3.757, p < 0.01$ ;
- on the interest to see and observe the changes of substances in everyday life (A5:  $t(402) = 6.606, p < 0.01$ ;
- on the interest to learn how drinking water is purified (A7:  $t(405) = 5.046, p < 0.01$ ).

The support expressed by respondents to the transition to learner-centred teaching/learning process as well as the necessity to improve the system of organizing the learning has common results with similar studies (Jurgena, Cedere, 2015; Jurgena, Gedrovics, 2014).

## Conclusions

The readiness of the future teachers for the professional activity is formed in education environment of higher education institutions, accumulating positive experience of pedagogical work and actively participating in the evaluation of the modern complex, changing and multidimensional educational processes therefore exploration of students' opinions is important in order to find out students' attitude to the importance of teaching science in the education of new teachers of different specializations.

As demonstrated by the survey findings there are no significant differences between the opinions expressed by the prospective teachers of different specializations. In general students – prospective teachers assess positively the science subjects and their importance for immediate bringing school students to life, work and nature, they support the transition to learner-centred educational process as well as the necessity to improve the system of learning organization. Answers about the desired changes in the teaching approaches, the willingness themselves to participate in the inquiry-based activities thus implementing their creative abilities describe the above mentioned opinion expressed by the respondents. The prospective teachers who have more life and work experience assess higher the importance of science education in different professions and everyday life.

The prospective teachers consider that the content of science subjects (biology, chemistry and physics) in basic school corresponds to the students' needs, interests and is an integral component of basic education for all students' regardless what profession the student will choose in the future. Emphasizing the interest as one of the most important learning motives respondents require more responsibility from the teachers. At the same time the respondents acknowledge systemic problems and support the constructivism learning approach and incite finding more possibilities for students' practical and creative work. The study gave a possibility to attract the attention of future teachers to the importance of science education. The obtained results will be further applied in teacher education in higher education institutions.

## Bibliography

1. Baltušiņa R. (2012). *The Pedagogy Students Readiness for Professional Activities in the School Environment*. Synopsis of the Doctoral Thesis. Jelgava: Latvia University of Agriculture.
2. Briede B., Pēks L. (2014). A Constructivist Approach in Teaching in Higher Education for Getting Methodological and Reflection Competences. In Proceedings of the International Scientific

- Conference *Rural Environment. Education. Personality (REEP)*, Vol. 7 (CD-ROM). Jelgava: Latvia University of Agriculture, pp. 84 – 89.
3. Brigrmane B. (2014). *Pieaugušo pašpietiekamības veidošanās mācīšanās procesā* (The Formation of Adults' Self-experience in the Process of Learning). Doctoral Thesis. Rīga: Riga Teacher Training and Educational Management Academy). (in Latvian)
  4. Brooks J.G., Brooks M.G. (1993). *In Search of Understanding: The Case for Constructivist Classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development.
  5. Cedere D., Jurgena I., Gedrovics J. (2015). Longitudinal Research on the Change of Grade 9 Pupils' Cognitive Interests in Sciences (2003 -2013). In Proceedings of the International Scientific Conference *Engineering for Rural Development*, Vol.14. Jelgava: Latvia University of Agriculture, pp. 742 – 747.
  6. Cēdere D., Jurgena I., Helmane I., Tiltiņa-Kapele I., Praulīte G. (2015). Cognitive Interest: Problems and Solutions in the Acquisition of Science and Mathematics in Schools of Latvia. *Journal of Baltic Science Education*, Vol. 14 (4), pp. 424 – 434.
  7. Geidžs N.L., Berliners. D.C. (2000). *Pedagoģiskā psiholoģija* (Pedagogical Psychology). Rīga: Zvaigzne ABC. (in Latvian)
  8. Giese M. (2010). Der Erfahrungsbegriff in der Didaktik – eine semiotische Analyse/Zeitschrift für pedagogik (The Concept of Experience in Didactics – a Semiotic Analysis). *Zeitschrift für Pädagogik*, Vol. 56 (1), pp. 69 – 89. (in German)
  9. Jurgena I., Cedere D., Keviša I. (2015). Innovative and Traditional Elements in the Work of Academic Staff: The Views of Prospective Teachers. *Journal of Teacher Education for Sustainability*, Vol. 17 (2), pp. 74 – 90.
  10. Jurgena I., Gedrovics J., Cedere D. (2014). Students' Views on the Professional Career Opportunities. In Proceedings of the International Scientific Conference *Engineering for Rural Development*, Vol.13. Jelgava. Latvia University of Agriculture, pp. 522 – 528.
  11. Meyer H. (2008). *Was Ist ein guter Unterricht?* (What is a Good Lessons?). Berlin: Cornelsen Scriptor. (in German).
  12. Muijs D., Reynolds D. (2012). Effective Teaching: Evidence and Practice. *British Journal of Educational Technology*, Vol. 43 (1), pp. 37 – 38.
  13. Namsone D., Čakāne L. (red.). (2011). *Rokasgrāmata dabaszinātņu un matemātikas skolotājiem* (Handbook for Teachers of Science and Mathematics). Rīga: VISC. (in Latvian) [online] [19.11.2016]. Available at [http://priede.bf.lu.lv/grozys/Didaktika/DZIT/Citi\\_resursi/DZMP\\_materiali/Vertesana.pdf](http://priede.bf.lu.lv/grozys/Didaktika/DZIT/Citi_resursi/DZMP_materiali/Vertesana.pdf)
  14. Nehring A., Nowak K.H., Upmeyer zu Belzen A., Tiemann R. (2015). Predicting Students' Skills in the Context of Scientific Inquiry with Cognitive, Motivational and Sociodemographic Variables. *International Journal of Science Education*, Vol. 37 (9), pp. 1343 – 1363.
  15. *Noteikumi par valsts pamatizglītības standartu, pamatizglītības mācību priekšmetu standartiem un pamatizglītības programmu paraugiem* (Regulations on National Standard of Basic Education, Subject Standards of Basic Education and Sample Basic Education Curricula). (2014). MK Noteikumi Nr. 468 no 12.08.2014. Rīga: LR MK. [online] [06.10.2016]. Available at <http://likumi.lv/doc.php?id=268342> (in Latvian)
  16. Osborne J., Simon S., Collins S. (2003). Attitudes Towards Science: A Review of the Literature and its Implications. *International Journal of Science Education*, Vol. 25 (9), pp. 1049 – 1079.
  17. Pellegrino J.W., Hilton M.L. (2012). *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century*. Washington, DC: The National Academies Press.
  18. Potvin P., Hasni A. (2014). Interest, Motivation and Attitude Towards Science and Technology at K-12 Levels: A Systematic Review of 12 Years of Educational Research. *Studies in Science Education*, Vol. 50 (1), pp. 85 – 129. [online] [10.02.2016]. Available at <http://dx.doi.org/10.1080/03057267.2014.881626>
  19. Draft Science Frameworks (2013). OECD. [online] [19.11.2016]. Available at <http://www.oecd.org/pisa/pisaproducts/Draft%20PISA%202015%20Science%20Framework%20.pdf>
  20. *Science Education in Europe: National Policies, Practices and Research*. (2011). Education, Brussels: Audio-visual and Culture Executive Agency. [online] [19.11.2016]. Available at [http://eacea.ec.europa.eu/education/eurydice/documents/thematic\\_reports/133EN.pdf](http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/133EN.pdf)
  21. Žogla I. (2001). *Didaktikas teorētiskie pamati* (Theoretical Foundation of Didactics). Rīga: RaKa. (in Latvian)

## Thematic Approach and Mathematics Textbooks in Primary School

Ineta Helmane Dr. paed.

Riga Teacher Training and Educational Management Academy, Latvia

[ineta.helmane@rpiva.lv](mailto:ineta.helmane@rpiva.lv)

**Abstract:** In the process of teaching mathematics, it is possible to involve various everyday actions and objects which would help pupils' link mathematics with lifetime actions. The aim of the article is to select the aspects of thematic choice and analyze the application of these aspects in mathematics textbooks in primary school. The use of the thematic approach in mathematics textbooks has been researched analyzing alternative mathematics textbooks in primary school Forms 1-3. Teaching mathematics thematically emphasises the use of application of mathematics around a central theme whereas teaching in topics predominantly emphasises mathematical content. In the thematic approach mathematics content involves objects, information, topics and themes. The topicality should be linked with happenings in their personal lives as well as the latest developments in community life, socio-economic processes or a scientific context as well. The levels of implementation of the thematic approach are closely linked with the content of the selected thematic aspect. In mathematics textbooks predominate thematic aspects: pupils' personal experience and situations, socio-economic processes.

**Keywords:** thematic approach, mathematics, textbooks, primary school.

### Introduction

We use mathematics and the content related to it in various everyday situations: different commercial fields beginning with food trade and finishing with global financial issues, in measurements, construction as well as in cooking. Thus, in mathematics content, it is possible to involve such actions and objects which would help pupils' link mathematics with lifetime actions. Students' ability to apply mathematics in various contexts in daily life is seen as a core goal of mathematics education (Boaler, 1993; De Lange, 2003; Graumann, 2011; Muller, Burkhardt, 2007; Niss, Blum, Galbraith, 2007; Wijaya, Van den Heuvel-Panhuizen, Doorman, 2015). The European Commission report "Mathematics education in Europe: common challenges and state policy" admits that teachers do not provide pupils with sufficiently clear explanations how they can associate mathematics with everyday life and lifetime actions (Mathematics in Europe ..., 2011). In the process of teaching mathematics, it is necessary to change the attitude and opinion that mathematics is complicated, boring and not related to real life. One of the options, how to implement it, is to organize teaching/learning mathematics around "the great idea" and cross-curricular themes which will help show the link with everyday life and other school subjects (Helmane, 2012; Van den Heuvel-Panhuizen, 2001).

Therefore, it is necessary to create such mathematics content during the acquisition of which pupils would perceive, see and link the skills and knowledge obtained in mathematics with the real lifetime situation as well as such mathematics content during the acquisition of which pupils' development trends, needs and interests would be provided and met; also, holistic approach to pupils' development would be implemented. One of the existing options, how to implement such progress of mathematics content, is the thematic approach.

*The aim of the article* is to select the aspects of thematic choice based on the quantitative and qualitative analysis of theoretical literature and analyze the application of these aspects in mathematics textbooks for the acquisition of mathematics content within the thematic approach in primary school.

### Methodology

#### *Essence of thematic approach*

The thematic approach involves the integration of various content fields exploring an exciting idea which is closely linked with the content of different subject areas. This approach arranges the study content in such a way that learners comprehend the link among different subject areas as well as interconnection with real life (Helmane, 2014; Volša, Konflina, 1998). Mathematics content in the framework of the thematic approach is associated with the development of skills in practical activities the so called 'hands on' as well as the inter-correlation of the acquired knowledge based on the theme

or a concept; also, skills that can be applied in lifetime actions as well as the development of a personal sound attitude, values and goals (Figure1).

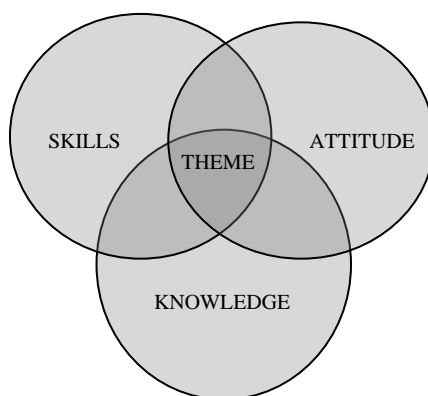


Figure 1. Mathematics content in the framework of the thematic approach (Helmane, 2011).

Teaching mathematics thematically envisages linking mathematics with the central theme which emphasizes and comprises mathematical content. For instance, if the central theme is „Sports”, then the thematic units could be organized in various content areas: percentage, measurements, statistics or algebra, thus strengthening mathematics content (Handal, Bobis, 2001). Therefore, the themes should be included in mathematics curriculum and content in such a way that skills and knowledge would be taught and mastered in accordance with the central theme, thus attaching significance and direction to the educational process (Freeman, Sokoloff, 1995). The thematic learning links mathematics with real, existing life situations (Handal, 2000) and the mathematics content is acquired in a meaningful and practically oriented context.

Taking into account that a pupil at the early school age has a difficulty concentrating if the content is not interesting, if it is abstract and does not stimulate thinking (Cooper, 1998), also, when a pupil does not see the sense in doing what he has to do, then the anticipated does not give satisfaction. In such a state the pupil feels disappointed, stressed, internally alarmed which is frequently accompanied by isolation, protest and unwillingness to learn. It is especially dangerous in those educational stages when learning as a meaningful process has just started (Sousa, 2001; Абрамова, 2003). Then, within the framework of thematic approach it is possible to show the practical importance of mathematics content by explaining to pupils where mathematical skills and knowledge are encountered in life and how significant it is to obtain and apply correctly each new mathematical skill and knowledge. When facing such practical study content linked with real lifetime activities, pupils develop a positive attitude towards mathematics and the content to be mastered as well as interest and motivation to acquire mathematical skills and knowledge.

### *Aspects of thematic choice in the acquisition of mathematics content*

In the thematic approach to mathematics content it is essential to use such topicality that a learner may encounter in his/her real lifetime activities; moreover, the topicality should be linked with happenings in their personal lives as well as the latest developments in community life, socio-economic processes or a scientific context as well: learners' personal experience in accordance with learners' daily activities; social processes and learners' roles in them, behavioural norms, ways of socially important activities, generally accepted symbols as well as the economic aspect; calendar year with seasonal changes, anniversaries and traditional holidays, specific features of the period as well as objects; science including the technological process, a theoretical explanation or a precisely defined maths problem as well as widening the outlook; themes in accordance with the National Standard of Basic Education with the content integration of other subject areas, i.e., cross- curricula acquisition of the mathematics content (Helmane, 2011).

Taking into account the specific character of mathematics content in primary school and the aspects of thematic choice when mastering the mathematics content, the thematic approach should be implemented in levels (Table 1).



Table 1

**Levels of thematic approach in mathematics (Helmane, 2012)**

Level	Component	Essence of level
Level 1	Objects	Any object, article, phenomenon, living being according to the calendar time from pupils' private and social life, socio-economic processes or with a scientific context.
Level 2	Information and event	Any real event, its procedure, real life phenomenon about private and social life events, socio-economic or scientific processes, calendar passage of time.
Level 3	Topic	A short definition of content viewing, discussing and investigating private and social life events, socio-economic processes or also with a scientific context, calendar passage of time.
Level 4	Theme	General narration as the whole of phenomena, ideas, vital issues according to the calendar time about pupils' private and social life events, socio-economic or scientific processes.

The levels of thematic approach in mathematics manifest themselves successively envisaging a gradual transition from objects to information and then to the topic and theme (Figure 2).

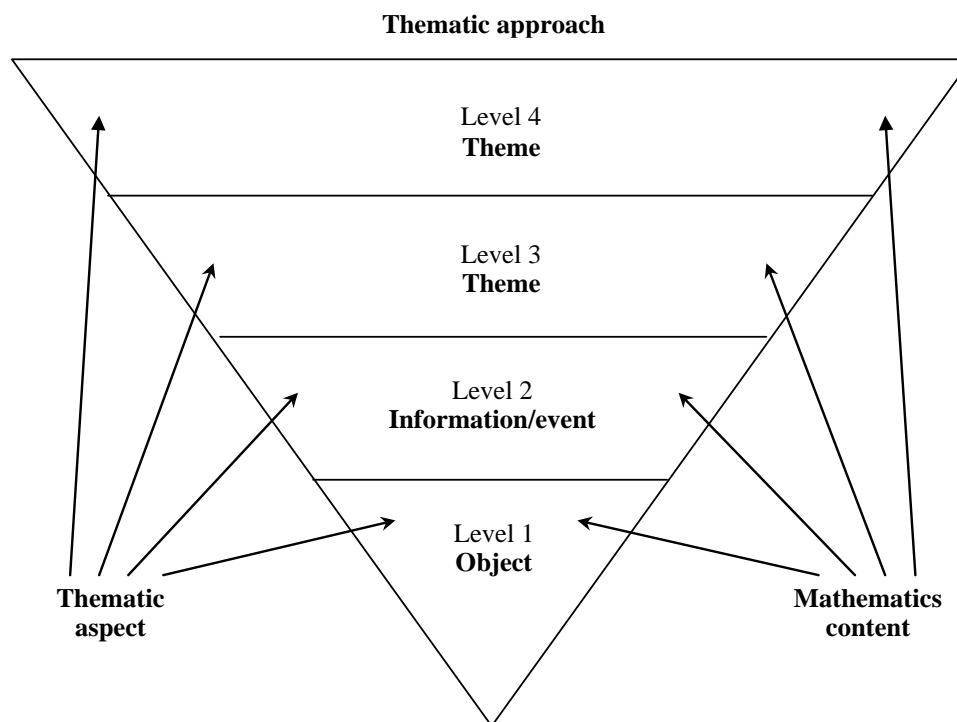


Figure 2. Thematic approach levels in mathematics (Helmane, 2012).

The levels of implementation of the thematic approach are closely linked with the content of the selected thematic aspect. By selecting a higher level of implementation of the thematic approach, the content included in the thematic aspect is expanding and enriching. Thus, in the acquisition of mathematics content, the number of tasks, exercises and operations related to the selected thematic aspect increases and also, the time envisaged for their solution enhances where most of tasks, exercises and mathematical operations in a certain period of time are connected with the chosen thematic aspect.

It is characteristic that by choosing a thematic aspect and the 1st level of implementation of the thematic approach, the acquisition of maths skills and knowledge is associated with the objects appropriate to the thematic aspect, not envisaging a wider investigation of them. In turn, when choosing a thematic aspect and, for example, the 3rd level of implementation of the thematic approach, the acquisition of maths skills and knowledge has to be implemented within a thematic framework envisaging a short outline

about pupils' private and social life events, socio-economic or scientific processes and also gives a possibility to use objects and information in accordance with the chosen thematic aspect.

### Thematic approach in mathematics textbooks in primary school

The use of the thematic approach in mathematics textbooks has been researched analyzing alternative mathematics textbooks in primary school Forms 1-3, allocating each textbook a number (Table 2). The research uses such mathematics textbooks the compliance of which to the National General Education Standard has been confirmed by the National Centre for Education of the Ministry of Education and Science and which have been included into "The list of Approved and Published Textbooks" by the National Centre for Education (Mācību literatūra..., 2016).

Table 2

Forms 1, 2, 3 mathematics textbooks used in the research

Mathematics textbooks	
<b>Form 1</b>	<ol style="list-style-type: none"> <li>1. Mencis J. (sen.), Krastiņa E., Mencis J. (jun.), Cine I., Oliņa D. (1997). <i>Mathematics for Form 1</i>. Rīga: Zvaigzne ABC. (in Latvian)</li> <li>2. Valtasa I. (2005). <i>Mathematics for Form 1</i>. Rīga: Petergailis. (in Latvian)</li> <li>3. Helmane I., Dāvīda A. (2013). <i>Mathematics for Form 1</i>. Lielvarde: Lielvards. (in Latvian)</li> </ol>
<b>Form 2</b>	<ol style="list-style-type: none"> <li>4. Mencis J. (sen.), Krastiņa E., Mencis J. (jun.), Oliņa D. (1998). <i>Mathematics for Form 2</i>. Rīga: Zvaigzne ABC. (in Latvian)</li> <li>5. Valtasa I. (2008). <i>Mathematics for Form 2</i>. Rīga: Petergailis (in Latvian)</li> <li>6. Helmane I., Dāvīda A. (2014). <i>Mathematics for Form 2</i>. Lielvarde: Lielvards (in Latvian)</li> </ol>
<b>Form 3</b>	<ol style="list-style-type: none"> <li>7. Mencis J. (sen.), Krastiņa E., Mencis J. (jun.), Oliņa D. (1999). <i>Mathematics for Form 3</i>. Rīga: Zvaigzne ABC (in Latvian)</li> <li>8. Valtasa I. (2009). <i>Mathematics for Form 3</i>. Rīga: Petergailis (in Latvian)</li> <li>9. Helmane I., Dāvīda A. (2015). <i>Mathematics for Form 3</i>. Lielvarde: Lielvards (in Latvian)</li> </ol>

The textbooks written by different authors and used in the research, provide a systematic and successive acquisition of mathematics skills and knowledge from Forms 1-3. The textbooks for Forms 1-3 chosen for the analysis are like characteristics for one educational stage – for its beginning and end since the National Standard of Basic Education indicates the skills and knowledge to be acquired upon finishing Forms 3, 6, 9 (Valsts Pamatizglītības standarts..., 2006).

The research analyzes and determines the levels of implementation of the thematic approach in mathematics textbooks: the levels of objects, information and event, topic and theme. The following aspects of thematic selection have been chosen as criteria: pupils' personal experience and situations, socio-economic processes, calendar time, scientific technological processes and topics in accordance with the other textbook content in the National Standard of Basic Education.

### Results and discussion

The analysis of the aspects of the thematic choice shows that the following thematic aspects predominate in primary school textbooks: pupils' personal experience and situations, socio-economic processes, however, the thematic aspect of scientific and technological processes has been used the least. Also, the aspect of coordination the topics with the content of other school subjects in the National Standard of Basic Education has been used insufficiently (Table 3).

As a result of the analysis of mathematics textbooks, exploring the levels of the thematic approach (objects, information, topics and themes), intensity, it has been found out that in mathematics textbooks in primary school, object and information level predominates and also, a common thematic aspect in topics and themes are not used or used rarely (Table 3). For instance, in Form 1 textbooks by J. Mencis (sen.) (Mencis, Krastiņa, 1997; 1998; 1999) the object level predominates, whereas in Forms 2 and 3 textbooks, information and events predominate as the 2nd level of the thematic approach. The object

level and information level can be found in such thematic aspects as Socio-economic processes and Pupils' personal experience and situations.

Table 3

### Levels and aspects of the thematic approach in mathematics textbooks

Form	Aspects	Textbook (Table 1)	Levels of Thematic Approach			
			Objects	Information	Topic	Theme
Form 1	Pupils' personal experience and situations	1. J. Mencis (sen)				
		2. I. Valtasa				
		3. I. Helmane				
	Socio-economic processes	1. J. Mencis (sen)				
		2. I. Valtasa				
		3. I. Helmane				
	Calendar time	1. J. Mencis (sen)				
		2. I. Valtasa				
		3. I. Helmane				
	Scientific and technological processes	1. J. Mencis (sen)				
		2. I. Valtasa				
		3. I. Helmane				
	Topics related to the content of other school subjects	1. J. Mencis (sen)				
		2. I. Valtasa				
		3. I. Helmane				
Form 2	Pupils' personal experience and situations	4. J. Mencis (sen)				
		5. I. Valtasa				
		6. I. Helmane				
	Socio-economic processes	4. J. Mencis (sen)				
		5. I. Valtasa				
		6. I. Helmane				
	Calendar time	4. J. Mencis (sen)				
		5. I. Valtasa				
		6. I. Helmane				
	Scientific and technological processes	4. J. Mencis (sen)				
		5. I. Valtasa				
		6. I. Helmane				
	Topics related to the content of other school subjects	4. J. Mencis (sen)				
		5. I. Valtasa				
		6. I. Helmane				
Form 3	Pupils' personal experience and situations	7. J. Mencis (sen)				
		8. I. Valtasa				
		9. I. Helmane				
	Socio-economic processes	7. J. Mencis (sen)				
		8. I. Valtasa				
		9. I. Helmane				
	Calendar time	7. J. Mencis (sen)				
		8. I. Valtasa				
		9. I. Helmane				
	Scientific and technological processes	7. J. Mencis (sen)				
		8. I. Valtasa				
		9. I. Helmane				
	Topics related to the content of other school subjects	7. J. Mencis (sen)				
		8. I. Valtasa				
		9. I. Helmane				

yes



partly



no



Mainly in word problems, we can find a short outline, for example, about a class event, a project week, tests, cafeteria, money and its history, electrical installation, measurements of time, while in I. Helmane's textbook, the 2nd and 3rd levels of thematic approach predominate. The information level and the topic level can be found in such thematic aspects as Pupils' personal experience and situations. Socio-economic processes and Calendar time. In I. Helmane's (Helmane, Dāvida, 2013; 2014; 2015)

textbooks, we can sometimes find the implementation of the thematic approach in the 4th or theme level in such thematic aspects as Pupils' personal experience and situations, Socio-economic processes and Calendar time. It is characteristic that in all mathematics textbooks used in the research, the thematic aspect Pupils' personal experience and situations shows a pupil in different situations carrying out diverse lifetime activities, taking part in learning process, school supplies, out of class activities, hobbies. The thematic aspect Socio-economic processes is used in textbooks involving buying-selling processes, professions and their activities, labour market processes as well as traffic, distances between cities, population in different cities.

In mathematics textbooks by J. Mencis (sen.) (Mencis, Krastiņa, 1997; 1998; 1999) one thematic aspect comprises 2-3 tasks, exercises. It is characteristic that every task often has a different topic, the tasks without a topic predominate. The topic is revealed mainly in word problems with the help of the text without using or rarely using illustrations, pictures. In maths textbooks, separate objects predominate and do not have a common line of thematic aspects in one lesson or class. These textbooks focus on specific content, the skills and knowledge are only partly linked in a common thematic aspect line. A similar situation can be found in the textbooks by I. Valtasa (2005; 2008; 2009) where partly related thematic tasks predominate, thus, there are few thematically mutually related tasks, exercises and operations. However, in the maths textbooks by I. Helmane (Helmane, Dāvīda, 2013; 2014; 2015) 5 and more tasks, exercises are united in one thematic aspect. It is characteristic that all these tasks often comprise one thematic aspect. Thus, the levels of thematic approach are implemented according to the thematic aspect. The topic is revealed in both illustrations and various content areas: word problems, arithmetic, statistic elements. Consequently, the maths textbooks by I. Helmane comprise tasks of various content areas with a wide range of content, for example, about Pupils' Song and Dance Festival, excursions, famous inventors, composers as well as Christmas and its celebration. These textbooks use such aspect of the thematic approach as Topics related to the content of other school subjects. For instance, in order to implement the 3rd or topic level I. Helmane uses the topics the acquisition of which is topical in natural sciences: energy sources, scale, birds, fish.

It is characteristic that in all textbooks which were analyzed in the research, the level of implementation of the thematic approach is lower if pupils master new skills and knowledge in mathematics. The mathematics content to be acquired is dominant in the process of obtaining new skills. However, in the process of developing and strengthening the mastered mathematics content, the level of implementation of the thematic approach is higher.

## Conclusions

The thematic approach involves integration of various content areas, investigating one interesting idea close to the content from diverse fields of school subjects. It arranges the study content in such a way that pupils see the link among different fields of school subjects and their link with real life. The mathematics content within thematic approach includes the skills to be developed in practical work, the knowledge to be mastered about the relationships included in the organizing theme or concept, the skills for applying this knowledge in lifetime activities, attitudes as personally significant values and the aim.

The thematic approach has to be implemented in the following successive levels: the 1st or object level, the 2nd or information and event level, the 3rd or topic level, the 4th or thematic level. The levels of the implementation of thematic approach are closely connected with the content saturation of the chosen thematic aspect. In the thematic approach in mathematics content, we must use such thematic aspects which pupils could encounter in real life associating them with happenings in private, community life, socio-economic processes or also, with scientific context, for example: pupils' personal experience and situations, socio-economic processes, calendar time, scientific and technological processes, topics related to the content of other school subjects.

The following thematic aspects predominate in mathematics textbooks in primary school: pupils' personal experience and situations, socio-economic processes, however, such thematic aspect as scientific and technological processes has been used the least, also, the aspect of adjusting topics to the content of other school subjects in the National Standard of Basic Education and also, in mathematics textbooks in primary school, object and information level predominates, a common thematic aspect in themes and topics is not used or used rarely.

## Bibliography

1. Boaler J. (1993). Encouraging the Transfer of 'School' Mathematics to the 'Real World' Through the Integration of Process and Content, Context and Culture. *Educational Studies in Mathematics*, Vol. 25 (4), pp. 341 – 373.
2. Cooper D.D. (1998). Reading, Writing and Reflections. In Wehlburg C.M. (Ed.) *New Directions for Teaching and Learning*, Vol. 73, pp. 47 – 56.
3. De Lange J. (2003). Mathematics for Literacy. In B.L. Madison, L.A. Steen (Eds.). *Quantitative Literacy: Why Numeracy Matters for Schools and Colleges*, pp.75 – 89. Princeton: National Council on Education and Disciplines.
4. Freeman C.C., Sokoloff J.H. (1995). Children Learn to Make a Better World: Exploring themes. *Childhood Education*, Vol. 73, pp. 17 – 22.
5. Graumann G. (2011). Mathematics for Problems in the Everyday World. In J. Maasz, J. O' Donoghue (Eds.), *Real-World Problems for Secondary School Mathematics Students: Case Studies*, pp. 113 – 122. Rotterdam: Sense Publishers.
6. Handal B. (2000). Teaching in Themes: is that Easy? *Reflections*, Vol. 25(3), pp. 48 – 49.
7. Handal B., Bobis J., Grimison L. (2001). Teachers' Mathematical Beliefs and Practices in Teaching and Learning Thematically. Proceedings of the Twenty-Fourth Annual Conference of the *Mathematics Education Research Group of Australasia Inc.*, pp. 265 – 272. Sydney: MERGA.
8. Helmane I. (2011). Aspects of Thematic Choice within the Mathematics Based on Thematic Approach in Primary School. In Proceedings of the International Scientific Conference *Society, Integration, Education*, Vol. II. Rēzekne: Rēzeknes Augstskola, pp. 169 – 177.
9. Helmane I. (2012). Thematic Approach for Mathematics Textbooks. In Proceedings of the International Scientific Conference *Society, Integration, Education*, Vol. I. Rēzekne: Rēzeknes Augstskola, pp. 169 – 178.
10. Helmane I. (2014). Themes of Pupils' Choice for Thematic Approach in Mathematics in Primary School. In Proceedings of the 14th International conference *Children's Mathematical Education CEM 14*. Rzeszow: WUR, pp. 125 – 133.
11. Helmane I., Dāvida A. (2013). *Matemātika 1.klasei (Mathematics for Form 1)*. Lielvārde: Lielvārds. (in Latvian)
12. Helmane I., Dāvida A. (2014). *Matemātika 2.klasei (Mathematics for Form 2)*. Lielvārde: Lielvārds. (in Latvian)
13. Helmane I., Dāvida A. (2015). *Matemātika 3.klasei (Mathematics for Form 3)*. Lielvārde: Lielvārds. (in Latvian)
14. *Mācību literatūra vispārējās izglītības iestādēm (Textbooks for General Educational Institutions)*. (2016). Rīga: VISC. [online] [06.09.2016]. Available at <http://visc.gov.lv/saturs/vispizgl/maclit.shtml> (in Latvian)
15. *Mathematics Education in Europe: Common Challenges and National Policies* (2011). European Commission, Education, Audiovisual and Culture Executive Agency: Eurydice. [online] [31.01.2017]. Available at [http://eacea.ec.europa.eu/education/eurydice/documents/thematic\\_reports/132EN.pdf](http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/132EN.pdf)
16. Mencis J. (sen.), Krastiņa E., Mencis J. (jun.), Cine I., Oliņa D. (1997). *Matemātika 1.klasei (Mathematics for Form 1)*. Rīga: Zvaigzne ABC. (in Latvian)
17. Mencis J. (sen.), Krastiņa E., Mencis J. (jun.), Oliņa D. (1998). *Matemātika 2.klasei (Mathematics for Form 2)*. Rīga: Zvaigzne ABC. (in Latvian)
18. Mencis J. (sen.), Krastiņa E., Mencis J. (jun.), Oliņa D. (1999). *Matemātika 3.klasei (Mathematics for Form 3)*. Rīga: Zvaigzne ABC. (in Latvian)
19. Muller E., Burkhardt H. (2007). Applications and Modelling for Mathematics - Overview. In W. Blum, P.L. Galbraith, H.W. Henn, M. Niss (Eds.), *Modelling and Applications in Mathematics Education: The 14th ICMI study*, pp. 267 – 274) New York: Springer.
20. Niss M., Blum W., Galbraith P. (2007). Introduction. In W. Blum, P.L. Galbraith, H.W. Henn, M. Niss (Eds.). *Modelling and Applications in Mathematics Education: The 14th ICMI study* (pp. 3 – 32). New York: Springer.
21. Sousa A. (2001). *How Brain Learn*. (2<sup>nd</sup> ed.). Thousand Oaks: Corvin.

22. Valsts Pamatizglītības standarts. *Mācību priekšmetu programma pamatizglītībā (State Curricula. Programme for Teaching Subject Mathematics)*. (2006). Rīga: VISC. [online] [06.09.2016]. Available at <http://visc.gov.lv/saturs/vispizgl/programmas.shtml> (in Latvian)
23. Van den Heuvel-Panhuizen M. (2001). *Realistic Mathematics Education in the Netherlands. Principles and Practice in Arithmetic Teaching. Innovative Approaches for the Primary Classroom*. Buckingham: Open University Press.
24. Valtasa I. (2005). *Matemātika 1.klasei (Mathematics for Form 1)*. Rīga: Pētergailis. (in Latvian)
25. Valtasa I. (2008). *Matemātika 2.klasei (Mathematics for Form 2)*. Rīga: Pētergailis. (in Latvian)
26. Valtasa I. (2009). *Matemātika 3.klasei (Mathematics for Form 3)*. Rīga: Pētergailis. (in Latvian)
27. Volša K. B., Konflina P. (1998). *Soli pa solim programma bērniem un vecākiem (Programme Step by Step for Pupils and Parents)*. Rīga: Sorosa fonds Latvija. (in Latvian)
28. Wijaya A., Van den Heuvel-Panhuizen M., Doorman M. (2015). Opportunity-to-Learn Context-Based Tasks Provided by Mathematics Textbooks. *Educational Studies in Mathematics*, Vol. 89 (1), pp. 41 – 65.
29. Абрамова Г.С. (2003). *Возрастная психология (Development Psychology)*. Москва: Академический Тракт. (in Russian)

## Information and Communication Technology in Education of Prospective Teachers of non-ICT Fields of Studies

Lukáš Herout Ing., Ph.D.

Czech University of Life Sciences Prague

Institute of Education and Communication, Czech Republic

[lukas.herout@gmail.com](mailto:lukas.herout@gmail.com)

**Abstract:** Formal education in the Czech Republic has seen some notable changes during the recent years. One of the most significant ones may be the implementation of curricular documents which are essential for pre-school (ISCED 0), primary (ISCED 1, ISCED 2) and secondary (ISCED 3) education. These documents made it possible for schools to give up obligatory syllabus and to introduce their own educational programs. Some schools have modernised their previous plans while others have created new – i.e. alternative concepts. The second, no less important, change, which has influenced all areas of human life, has been massive development of information and communication technologies (ICT) in recent twenty years. Current generation is starting their education with more experience and competencies than their teachers possess. However, the support and application of information and communication technologies is – despite the novelty of curricular documents – still being underestimated or not suitably grasped point.

In spite of that, the educational system is changing rapidly and the pace of this transformation is unprecedented. Modern technologies are being used by the youth on common – everyday basis – as a source of entertainment or as means of communication with peers. It is obvious that these changes must be reflected even by pedagogical faculties which educate prospective teachers. These institutions shall innovate their curriculum in order to enable the teachers to use these tools efficiently.

This paper aims to conduct a survey concerning utilization of information and communication technologies within university studies of aspiring teachers of selected majors and pedagogic faculties in the Czech Republic. The survey is interested in the practical implementation of ICT into lessons of these teacher-trainees. From the viewpoint of curricular documents, this concerns the approaches to ICT and their efficient application in common classroom situations in the context of specific methods and forms of university education. However, the issue will not be researched as educational content included into the specific subjects.

**Keywords:** University education, teachers' education, education technology, ICT, Czech Republic.

### Introduction

The information and communication technologies (ICT) have reached impressive development in the recent 20 years and they have positively influenced almost all the aspects of human life, including the education. In keeping with the contemporary knowledge base and the term base utilised in education, a more general term of "digital technologies" may also be used in referring to information and communication technologies. The ability to utilize these technologies, namely in terms of search for information, its evaluation, production, and distribution, is then referred to as digital literacy (Herout, 2016). The level of integration of digital technologies into the education process becomes one of the key factors of successful modern education; this integration occurs in response to the requirements and needs of our times. It is becoming more and more common for students to encounter methods, forms, and tools that utilize ICT. The growing trend of using the e-learning tools in the combined, but also in the full-time type of study, can serve as an example. The reason for this may be the pressure exerted by the students who demand more extensive use of digital technologies, the thereby implied requirement of further education of teaching staff, and the socio-economic situation that forces the students to work on daily basis in order to secure the funds required to pay for their studies and to support themselves even while participating in the full-time study programmes. Documented by many research studies, the positive influence of efficiently used digital technologies on educational processes may be considered another reason (Garrison, 2011).

There are many organizations (UNESCO, OECD) and government bodies that focus on implementation and support of information and communication technologies. For example, a portion of resources

coming to the Czech Republic from the EU funds during the 2007-2013 period has been dedicated to purchases, implementation, and use of digital technologies in education. In terms of concept, namely the "Strategy for Digital Education" arising from the "Strategy of Education Policy of the Czech Republic until 2020" is dedicated to this issue. As opposed to the preceding concepts and intents of the curricular documents concerned with education of students within elementary (ISCED 1, ISCED 2) and secondary (ISCED 3) education sector, this strategy primarily focuses on integration of information and communication technologies into the education process in general, without a regard to any specifics of particular areas of education. Thus, the aim is to support the use of ICT across the education sector, not to reserve it for the practice of specific isolate subjects as has been the case until now. It is obvious that such change of approach shall not occur instantly, but its stipulation in the official government documentation may be perceived as a step in the right direction.

Pedagogical faculties that educate the prospective teachers also need to react to these changes of approach towards the use of digital technologies in education. Since the expert circles have been demanding this for several years now, the pedagogical faculties are among the first places where this change can be expected to take place, or rather, where it should have occurred already.

The aim of this paper is to conduct a survey concerning utilization of information and communication technologies within university studies of aspiring teachers of selected majors and pedagogic faculties in the Czech Republic.

### Methodology

Usage of digital technologies is not only in the hands of enthusiastic and technologically proactive teachers who, since the very beginning, have seen them as versatile and useful didactic aids. However, ICT are becoming more and more universal tools and means of modern education. The use of ICT in the education is not viewed just as competitive advantage with a "wow-effect", but it is considered to be a common part of educational processes which has positive influence on their quality (Herout, 2015).

The aim of this entry is to provide an insight into the matters of the use of information and communication technologies during the preparation of prospective teachers – students of selected education programmes and pedagogical faculties in the Czech Republic. Our main research tool is a survey that aims to determine the extent to which the digital technologies are used by the tutors of the faculties that focus on the preparation of the teachers of elementary and secondary schools (ISCED 1-3).

The respondents participate in pedagogically oriented education programmes of three selected universities, and they are full-time students of third year and beyond. Among the respondents, there are students of Pedagogical Faculty of South Bohemian University in Budweis (S1), Pedagogical Faculty of Charles University (S2), and Pedagogical Faculty of Masaryk University in Brno (S3). The basic data are presented in Table 1.

Table 2

**Number of Respondents and Return Rate of the Survey**

School ID	Reach	Return	Return in %
S1	75	51	68 %
S2	100	64	64 %
S3	100	71	71 %
Total	275	186	68 %

The respondents have been aged between 19–27 (the average age being 22.4 years). Out of the total of 186 respondents, there have been 72 % women and 28 % men. The higher number of females corresponds to the higher ratio of their representation in the pedagogically oriented education programmes. The survey aimed to determine the extent of usage of material didactic aids in the academic environment. The respondents have been asked to evaluate the extent of usage of specific material didactic aids and study materials across all the subjects they have participated in during the past academic year 2015/2016 – subjects that relate directly to their academic orientation (field of expertise), and take place on the faculty premises.



The survey has consisted of two basic categories (questions). In the first category, the respondents expressed their opinion on the extent to which the tutor uses didactic aids (computer, projector, tablet, visualizer, voting equipment, board, flip-chart, interactive whiteboard, recording equipment...) during direct, face to face tuition. The second category consisted of evaluation of the extent of usage of material didactic aids that aim primarily to convey the information that is the object of the tuition process (e-learning, slide-show, mind map, printed study material, electronic study material, audio-visual study material, textbook, book, education program, education application, education website, social network...). When the respondents answered this question, three viewpoints have been used: to what extent are these aids used by the tutor, by the students during the tuition, and by the students during their individual learning sessions.

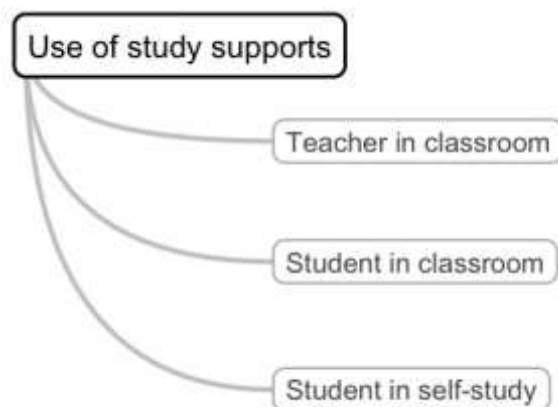


Figure 1. The different perspectives in the Question nr. 2.

The individual items within those categories have been created as a result of pilot testing. It has been nonetheless possible to add additional items at will. No respondents have taken advantage of this option.

## Results and discussion

The research has been conducted in October 2016, and among the invited respondents there have been students of all education programmes, with an exception of IT and physical education oriented programmes. The exclusion of IT students has been intentional — the main reason being their more intense preparation in the area of didactic aids, or, more precisely, educational technologies. The physical education students have been excluded namely because of the high number of skill-oriented subjects in their curriculum, which are usually taught on the sporting premises of the faculty rather than in standard classrooms. The replies of respondents within the first category are listed in the Table 2.

Based on the results, it is possible to infer that the most frequently used didactic technical aids include the Computer (75 %), the Projector (75 %), and the Blackboard (55 %). The Voting Equipment (2 %), the Recording Equipment (7 %), and the Interactive Whiteboard (8 %) may be subsequently included with the least utilized technical aids.

From the perspective of the usage of modern didactic technologies, it is important to mention the use of the Interactive Whiteboard (8 %) and the Tablet (10 %) by tutors during tuition. To a great extent, the resources coming from the European Structural Funds have particularly been invested into such devices, and these devices also constitute one of the pillars of the Strategy for Digital Education.

Nevertheless, it seems that the prospective teachers only encounter the possibility of using them during their teaching practice at schools that have been so equipped during the recent years. Especially the tablet constitutes a device easily accessible to the pupils – in the Czech Republic, as much as 95 % of children aged between 6–7 years have a tablet or a mobile phone with internet access at their disposal (Herout, 2016).

Table 2

**The respondents' replies to the first question (%)**

	<b>S1</b>	<b>S2</b>	<b>S3</b>	<b>Total</b>
Computer	75	81	68	75
Projector	71	86	68	75
Tablet	4	9	15	10
Visualizer	16	11	23	17
Voting equipment	2	0	4	2
Board	42	74	47	55
Flipchart	25	17	30	24
Interactive whiteboard	8	15	0	8
Recording equipment	0	6	14	7

The second category (question) aimed to examine the extent to which the material didactic aids used to convey the communicated information to students are utilized. In consistency with the preceding instance, the students have been able to choose one of the categories created as a result of the survey pilot testing.

Table 3

**The respondents' replies to the second question (%)**

	<b>Teacher in classroom</b>	<b>Student in classroom</b>	<b>Student in self-study</b>
E-learning	15	28	45
Slideshow	63	8	64
Mind maps	11	0	4
Printed study material	27	32	38
Electronical study material	38	6	42
Audio-visual study material	16	2	12
Textbook	4	5	37
Book	0	8	39
Education program	6	8	10
Education application	0	0	14
Education website	12	8	25
Social network	0	0	36

Based on the information the respondents have provided when answering the second question (Table 3), it is possible to infer that a presentation is the aid a tutor uses most frequently (63 %). That corresponds to the results obtained through the first question, more specifically to the data on the use of the Computer and the Projector (75 %). The difference between the above-listed figures can be reasonably explained by the use of visualizer or other devices that also need a computer and a projector in order to function. From the tutor's perspective, the Electronic Study Materials (38 %) and the Printed Study Materials (27 %) also belong among the most frequently used aids. It is worth mentioning that some of the options have not been chosen by any of the respondents. These are in particular the Books, the Educational Applications, and the Social Networks.

In terms of students and of the study materials they use, the responses have been divided into two categories. Materials the students use in the course of tuition and materials that primarily serve the purposes of individual learning. According to their responses, the students most frequently use the Printed Study Materials (32 %) and the E-learning (28 %). On the other hand, the least frequently used aids are the Mind Maps, the Educational Applications, and the Social Networks. The results obtained about the use of educational applications and social networks also correspond to what the respondents have indicated regarding the tutor.

The results about the materials primarily intended for individual learning are more varied. Among the most frequently used ones are the Slide-shows (64 %) and the E-learning (45 %). From the large discrepancy in the use of e-learning, which has been used by the tutors during their tuition only in 15 % of cases but has gained 45 % from the students, it is possible to infer that schools use it to support the learning process in controlled individual learning rather than in common (direct or face to face) tuition.

The difference has been apparent also in the use of social networks, which have not appeared in the common tuition at all — even though a survey conducted with 300 students from three different universities in the year 2012 has revealed that as many as 279 (93 %) respondents have a Facebook account, and are also its active users. 34% of the respondents spend more than an hour a day using a social network, and surprising 62 % spend over 30 minutes a day using it (Herout, 2013). The high popularity of social networks among students and the time they spend using them each day provokes a question whether they could be used for the purposes of formal education. Nowadays, the Czech colleges and universities have their own Facebook profiles, which they use largely for marketing purposes. The situation is different abroad where researches are conducted to examine this topic; more specifically, there is — for example — a research aiming to identify both the potential of social networks and the ways they could be used to improve communication between the tutor and the student, collaboration and co-operation among students, and engagement of students in the activities organized by their school or tutor (Selwyn, Mcgrath-Champ, 2009).

Conversely, students use the least the Mind Maps (4 %), the Education Applications (10 %), and the Audio-visual Study Materials (12 %) in their individual studies. Again, these results correspond to tutor's choice of study materials he/she provides and uses.

An interesting insight into the matters relating to distribution of study materials is provided by an examination of distribution of responses viewed through the perspective of the usage of modern information and communication technologies (Figure 2).

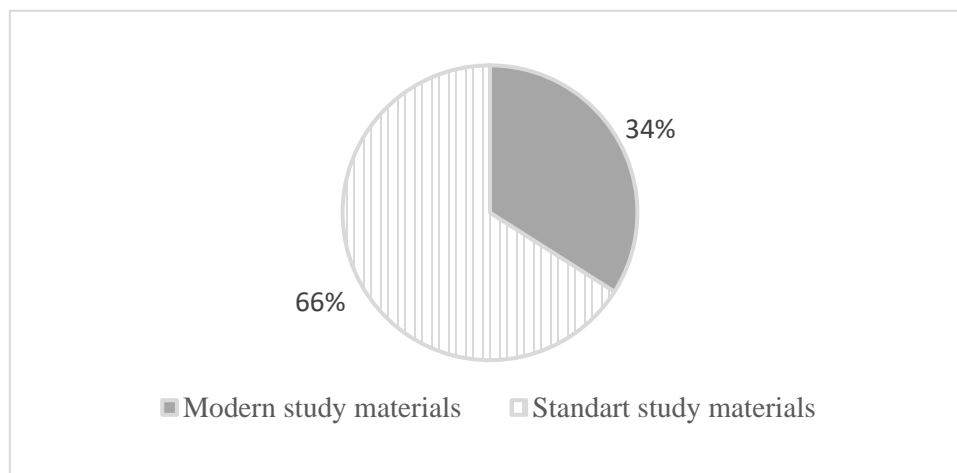


Figure 2. Proportional representation of Digital and Standard Materials.

E-learning, mind maps, electronic study materials, audio-visual study materials, social networks, education programs, applications, and websites can all be perceived as belonging to the aforementioned group. It is possible to indicate all other materials as standard because of the long time periods they have been used for, the low interactivity level they offer, and also other factors.

## Conclusions

It has been the aim of this entry to examine the use of the modern information and communication technologies in academic environment, more specifically in the training of the students of pedagogy. It is possible to infer from the results that the tutors prefer to use traditional didactic aids such as board, computer and projector. This is matched also by the high ratio of the use of presentation that constitutes a tool through which the conveyed information is administered.

Although the pedagogical faculties and their tutors who educate the prospective teachers should set the example by demonstrating effective integration and use of modern information and communication

technologies into the education process, the situation is rather different. 66 % of the materials used by tutors in direct tuition may be designated standard rather than modern.

If one looks at the curriculum of pedagogical faculties, it is possible to come across subjects that aim to enable the students to acquire competencies in the area of educational technologies and their use. Pedagogical faculties should aim to prepare their students for the professional teaching practice, and a practical example of the use of acquired competencies provided by the tutors themselves is one of the best ways to do so.

Conversely, from the perspective of the students it is apparent that a wide range of study materials is being used. Since an analysis of these materials has not been the objective of this entry, it does not concern itself with their origin either. They can therefore include materials acquired from one's tutor or classmates, as well as materials that are freely available on the Internet. Nevertheless, the trend of digitalization and a tendency to use the modern information and communication technologies in education are obvious. Looking abroad, the situation is similar. For example, American Duke University has equipped its students with iPod players as early as in the year 2004, and it has thereby provided them with an option to access the vast amount of online audio and video content it has prepared. This included tuition materials, lecture records, information channels, and other resources. Given the massive progress the ICT has seen during the past twenty years; this trend can be expected to develop further also in Czech Republic.

To finish with, it is important to emphasize, that these results are not possible to generalize in any way. These data are valid only for the environment of the researched reality. This paper is intended as one of the contributions for opening a discussion about the necessity of implementation new approaches and standards in teacher education at least within the Czech Republic.

### Bibliography

1. Garrison R.D. (2011). *E-learning in the 21st century: a framework for research and practice*. (2nd ed.). New York, NY: Routledge. ISBN 978-020-3838-761
2. Herout L. (2013). Využití sociálních sítí ve vzdělávání (Using Social Networks in e-Education). In *Sborník konference: Interdisciplinární mezinárodní vědecká konference doktorandů a odborných asistentů QUAERE 2013*. ISBN 978-80-905243-7-8. (in Czech)
3. Herout L. (2015). Reflexion of the Methods and Forms of University Education in Economy Oriented Study Programmes in the Czech Republic. In *Proceedings of the Annual International Conference Education, Research and Innovation ICERI2015*, Vol. 8. ISBN 978-84-608-2657-6
4. Herout L. (2016). Use of the information and communication technologies with the internet access by the pupils of elementary schools. In *Proceedings of the International Conference Education and New Learning Technologies EDULEARN2016*, Vol. 8. ISBN 978-84-608-8860-4
5. Selwyn N., Mcgrath-Champ S., Clarkeburn H. (2009). Face-working: exploring students' education-related use of Facebook. *Learning, Media and Technology*. Vol. 34 (2). ISSN 1743-9884.

## Using Critical Incident Analysis to Develop Form 11 English as a Foreign Language Students' Self-Reflection Skills and Conditional Phrase Usage Incident

Joseph Jack Horgan Mg. ed.  
Latvia University of Agriculture, Latvia  
[josephhorgan@gmail.com](mailto:josephhorgan@gmail.com)

**Abstract:** The author aimed to explore how critical incident analysis could be adapted for form 11 English as a foreign language (EFL) students in Latvia to improve their critical self-reflection skills. A case study of twenty-two form 11 students and one teacher was carried out over one month. Data collection methods included a questionnaire, individual and group interviews, student reflection journals, and written student feedback. Critical incident analysis, originally developed by J.C. Flannagan and D. Tripp as a series of procedures to improve an organization's activities, was adapted to develop form 11 students' self-reflection skills as well as their competence in using third and mixed conditional phrases in EFL class. Analysis of students' reflection journals using the J.D. Bain scale showed that a majority of students' levels of self-reflection decreased or stagnated between their first and final journal entries, and most students did not receive high scores on a summative assessment testing their abilities in using third and mixed conditional phrases following the unit. Students self-reported a perceived increase in self-reflection skills, though modifications are required in order for the technique to satisfactorily improve self-reflection skills and use of conditional phrases.

**Keywords:** English as a foreign language, secondary school education, critical incidents, conditional phrases, reflection skills.

### Introduction

On 21 May 2013, the Latvian Cabinet of Ministers adopted *Regulations on the National General Secondary Education Standards, Study Subject Standards and Curriculum Samples* (Noteikumi par valsts..., 2013), a set of guidelines that establishes overall goals, standards, evaluation procedures, and sample curriculum for state-funded secondary schools (forms ten through twelve, generally ages sixteen through nineteen). Section II, titled, "General Secondary Education Programme Main Objectives and Tasks", sets out four major "objectives" for Latvian secondary education. Objectives 2.1, 2.2, and 2.4 are worded in the following way:

*2.1. to provide students with the knowledge and skills necessary for personal growth and development, civic participation, employment, social integration and continuation of education*

*2.2. to promote the improvement of students' spiritually, emotionally and physically developed personality and to cultivate healthy lifestyle habits*

*2.4. to develop students' ability to learn and improve independently, motivating lifelong learning and the choice of a career* (Noteikumi par valsts..., 2013).

In these three objectives, there are a few key words and phrases that are closely inter-related: "personal growth and development", "improvement of a student's... emotionally... developed personality", and "students' ability to... improve independently, motivating lifelong learning". One crucial ability that students must have to succeed in all of these ways is that of self-reflection, by which is meant *A mental process in which one gives active and careful thought to their past, present, or future actions or situation*. The ability for students to properly reflect on their actions and experiences has been promoted by teacher trainers and education authors, often in the form of "reflection journals" or post-assignment feedback.

It can be difficult for students and adults alike to find the time to properly and deeply reflect on one's past, present, and potential future. In the exam-based drive to prepare students for the workplace or academia after the completion of secondary school, it is the author's fear that not enough time is spent in class teaching students how to engage in meaningful reflection about their school work, their past experiences, and the future directions of their lives. With so much material for students to learn and retain that is required to pass their final exams and move on to post-secondary education, the skill of self-reflection which is so critical in achieving the Latvian government's goal of creating "life-long learners" might not be adequately addressed.

There already exist myriad models of self-reflection that can be used in the secondary school foreign language classroom, but one interesting method that to the author's knowledge had not yet been adapted to that context is the classic "critical incident analysis" technique first proposed and outlined by J.C. Flanagan (1954) and modified for the field of education by D. Tripp (1993). Although this technique was originally designed as a psychological method to research and analyse issues of organizational failure in distressful situations, it has previously been successfully adapted for personal self-reflection use in teacher and nurse education programs.

The goal of J.C. Flanagan's work was to develop a flexible system, adaptable to many different situations, which organizations could use to objectively collect data about the behaviour of their members or employees in certain defined situations and use the data to make improvements in some way. J.C. Flanagan (1954) laid out five steps for authors to use the technique to find out about a certain situation (Figure 1). Possible applications that J.C. Flanagan suggested were as diverse as determining job responsibilities, designing operating procedures, measuring proficiency or performance, and psychotherapy (Flanagan, 1954, 48-355).

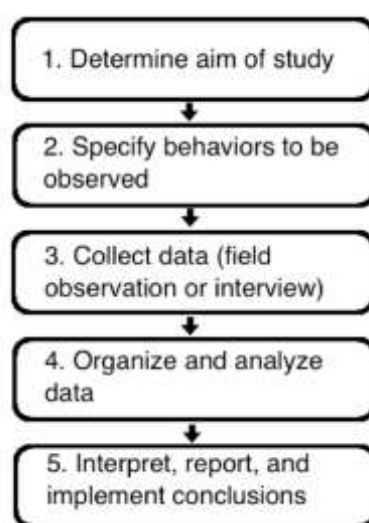


Figure 1. Steps of critical incident analysis (Flanagan, 1954).

In J.C. Flanagan's initial form, there's little conceivable use for critical incident technique as a method to teach self-reflection in the English as a second language classroom. However, the core underlying principles of the technique have been adapted and heavily modified for usage in a number of contexts. D. Tripp (1993) did the first major work in adapting the technique to the field of education, beginning with redefining exactly what critical incidents are and are not. According to D. Tripp, "critical incidents are not 'things' which exist independently of an observer and are awaiting discovery like gold nuggets or desert islands, but like all data, critical incidents are created. Incidents happen, but critical incidents are produced by the way we look at a situation: a critical incident is an interpretation of the significance of an event" (Tripp, 1993, 8).

D. Tripp (1993) believed that critical incidents need not be dramatic life-turning moments, but ones that upon analysis gain new meaning that is transformative in some way. People "create" critical incidents through the process of analysis of moments that often seem very ordinary to begin with. He saw critical incidents as more than a way to analyse organizational practices, instead creating various frameworks of "critical incident analysis" to take such incidents and derive meaning from them. Various scientists since D. Tripp have applied critical incident analysis in a variety of situations, such as G. Kilianska-Przybylo (2009) who wrote about using the process to enhance the inter-cultural competence of students in her teacher training program. Like G. Kilianska-Przybylo, the wide majority of those who have done field and theory work with critical incident analysis have done so in the context of post-secondary education, especially teacher education programs. While the value of critical incidents for teachers and university students has been recognized for a significant period of time, use of this valuable technique with secondary school students has largely been overlooked.

Although there is no universally agreed upon framework for writing critical incident analyses, most frameworks involve answering certain prompt questions that describe and analyse a critical incident in great detail. Critical incident analysis frameworks are usually designed with specific audiences and purposes in mind (Tripp, 1993; Green-Lister, Crisp, 2007; Nygren, Blom, 2001). The information for critical incident analyses often comes from reflective journals that are written in on a regular basis (Farrell, 2012), but the analyses themselves can also be a part of a regular journal. A.M. Priest and P. Sturgess (2005), J.E. Dymont and T.S. O'Connell (2003), and M. Farrah (2012) all argue that reflective journal writing promotes high school students' critical thinking skills and engages the learner in self-assessment, developing confidence and writing competence.

This aim of the present research was to explore how critical incident analysis can be adapted for form 11 English as a foreign language (EFL) students to perform critical self-reflection and develop self-reflection skills.

## Methodology

Based on review of the available literature, the author decided to create a critical incident framework that was appropriate for the level of form 11 English as some foreign language students that also practiced the difficult grammar of third and mixed conditional phrases. A sample of fourteen form 11 students at Jelgava Spidola Gymnasium in Jelgava, Latvia were asked to keep a reflection journal in which every Friday, Sunday, Monday, and Wednesday, the students would make a list of ten things that they remembered happening since writing the previous entry. In accordance with D. Tripp's (1999,3) definition of critical incidents discussed earlier, the events could be dramatic or mundane, faraway or personal; simply the first ten things that came to their mind that they remembered. After completing the list, students would look over the list of events and pick one that seemed particularly memorable or "stuck out" to them for some reason. Then students would answer the following series of prompts:

1. *One good thing about \_\_\_\_\_ is that...*
2. *One bad thing about \_\_\_\_\_ is that...*
3. *One interesting thing about \_\_\_\_\_ is that...*
4. *If I had(n't) \_\_\_\_\_, I would(n't) have \_\_\_\_\_*
5. *If I had(n't) \_\_\_\_\_, I would(n't) \_\_\_\_\_ (use mixed conditional, first part in the past second part in the present)*
6. *If \_\_\_\_\_ had \_\_\_\_\_ instead, I would(n't) \_\_\_\_\_ (this is for if something else had happened instead, what would be different?)*
7. *If I was/did(n't) \_\_\_\_\_, \_\_\_\_\_ would(n't) have \_\_\_\_\_ (if something about you was different, how would this event have been different, or have affected you differently)*

To answer the first three prompts, students responded using the past simple tense and described the incident as it really happened. The final four prompts all regarded hypothetical alternative scenarios. Question #3 required students to use a third conditional phrase, #4 required the mixed conditional, #6 required either the third or mixed conditional to describe what could be (or could have been different) if something else had happened instead, and #7 required a less common form of the mixed conditional in which they had to explain how something else could have happened if they were (or something about the situation was) different in some way. The author personally demonstrated the process during two lessons to make sure that students understood how it worked, and had students go through the process once themselves in class before assigning the journal as homework. The author also uploaded instructions and examples to the class website which had been previously used throughout the year as a means of communication between students and the author regarding assignments and other important information.

Students by the end of the unit had to write nine entries altogether, each one counting as a separate homework assignment. The completion or lack of completion of each assignment was recorded into the national E-Class (E-klase) system (the system used by Latvian schools to record grades and attendance

and report them to students and parents instantly) and were graded like any other homework assignment that was given throughout the year.

N. Hatton and D. Smith (1995) found that discussion of reflection journals with a partner led to higher levels of self-reflection. R. Ballantyne and J. Packer (1995) concurred with this idea, finding that one of the major weaknesses of journal writing is that it is essentially solitary and concluded that sharing or discussing their journals with peers or mentors could enhance the process. Though J.D. Bain, R. Ballantyne, J. Packer, and C. Mills (1999) pointed out that there is no concrete data to prove that such a link between peer discussion and deeper level of reflection exists, these researchers decided to include discussion as an aspect of the reflective process. In three of the lessons, students would get into pairs and take turns reading their most recent journal entry to their partner. After finishing reading the entry, the partner would ask the following questions:

- 1. Why did this incident stand out to you?*
- 2. What else was going on at the time?*
- 3. Do you think that you have a personal opinion or bias that influenced how you interpreted it?*
- 4. Could you have interpreted this incident from a different point of view?*
- 5. What did/can you learn from this incident?*

The partner would then give their own opinion or interpretation of the incident that was described, and after some discussion the roles would be reversed and the partner would read about their critical event while the original student would ask the questions and then give their opinion afterwards.

At the end of the unit, students wrote a final reflection on the entire process by answering the following series of seven questions:

- 1. What three things did you learn or understand better about yourself from doing this project?*
- 2. What was challenging about doing this project?*
- 3. What was useful about doing this project?*
- 4. What didn't you like about doing this project?*
- 5. Compared with before doing this project, do you think that you are better, worse, or just as good at reflecting about yourself?*
- 6. Compared with before doing this project, do you think that self-reflection is more important, less important, or just as important as you thought it was?*
- 7. What is one thing you will remember from doing this project?*

This final series of reflection questions would serve a variety of purposes. First of all, it would give a more meaningful sense of closure to the unit than a simple grammar test on conditional sentences. Secondly, it would serve as a data collection tool to provide valuable information to the author concerning students' experiences with the curriculum unit that could be analysed. The author chose to rely on these questions as opposed to a second questionnaire as previously planned, as he believed that this assignment would gain the same information that a second questionnaire would be designed to do and that another questionnaire might be too much of a bother for students to take seriously and give quality answers in response to. Finally, it would serve as a second summative assessment that would be graded on a scale from 1 to 10 and count towards the students' semester grades. As the questions would be graded on a scale from 1-10 and recorded into the E-Class (E-klase) system just like every other grade, the author thought that the students might have more motivation to contribute detailed and useful responses that could be analysed as data.

Since the unit had a grammar focus as well (third and mixed conditional phrases), a short grammar test was planned and announced to students as part of the unit. The test followed the same format for grammar tests that the students had taken throughout forms 10 and 11, and practiced the grammar in the forms of listening tasks as well as writing tasks. The research location required that teachers utilize a traditional test in addition to any project work that an English unit might use as an alternative summative assessment. In total, there were thirteen 40-minute lessons during the unit which lasted from Tuesday, February 23, 2016 until Tuesday, March 22, 2016.



The unit was designed so that students should have written a new critical incident before each lesson so that they would be able to share them with classmates using the questions discussed above. If students had not recently written a critical incident and had nothing to discuss, then instead of speaking with a classmate they would use the time allotted to go through the critical incident writing process in class.

Students' reflections were evaluated through content analysis using the five-point hierarchical scale developed by J.D. Bain, R. Ballantyne, J. Packer and C. Mills (1999) which is outlined in the Table 1 below:

Table 1

**Five-point level of reflection scale (Bain, Ballantyne, 1999, 60)**

<b>Reflection Level</b>	<b>Description</b>
Level 1 (reporting)	The student describes, reports, or re-tells with minimal transformation, no added observations or insights
Level 2 (responding)	<p>The student uses the source data in some way, but with little transformation or conceptualization</p> <p>The student makes an observation or judgment without making any further inferences or detailing the reasons for the judgment</p> <p>The student asks a "rhetorical" question without attempting to answer it or consider alternatives</p> <p>The student reports a feeling such as relief, anxiety, happiness, ect.</p>
Level 3 (relating)	<p>The student identifies aspects of the data which have personal meaning or which connect with prior or current experience</p> <p>The student seeks a superficial understanding of relationships</p> <p>The student identifies something they are good at, something that they need to improve, a mistake they have made, or an area in which they have learned from their practical experience</p> <p>The student gives a superficial explanation of the reason why something has happened or identifies something they need or plan to do or change.</p>
Level 4 (reasoning)	<p>The student integrates the data into an appropriate relationship, e.g. with theoretical concepts, personal experience, involving a high level of transformation and conceptualization</p> <p>The student seeks a deep understanding of why something has happened</p> <p>The student explores or analyzes a concept, event, or experience, asks questions and looks for answers, considers alternatives, speculates or hypothesizes about why something is happening</p> <p>The student attempts to explain their own or others' behavior or feelings using their own insight, inferences, experiences, or previous learning, with some depth of understanding</p> <p>The student explores the relationship between theory and practice in some depth</p>
Level 5 (reconstructing)	<p>The student displays a high level of abstract thinking to generalize and/or apply learning</p> <p>The student draws an original conclusion from their reflections, generalizes from their experience, extracts general principles, formulates a personal theory, or takes a position on an issue</p> <p>The student extracts and internalizes the personal significance of their learning and/or plans their own further learning on the basis of their reflections</p>

## Results and discussion

The author evaluated the students' journals by applying the aforementioned five-point reflection level scale to the first and last journal of each student to see if there was an increase in the level of reflection between the first and last entry. While the author predicted that there would be an increase in the students' level of reflection as they would improve their reflection abilities over the course of doing the journal project, the data in Figure 2 shows the opposite:

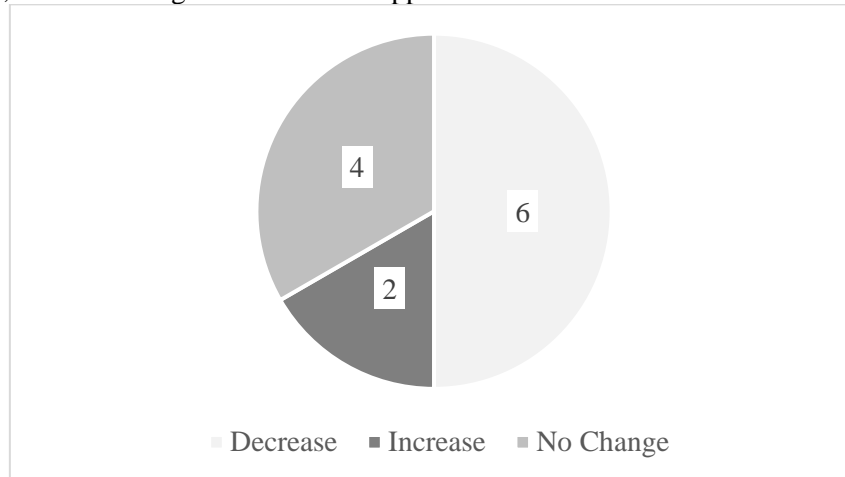


Figure 2. Change in students' reflection levels (amount of students).

The final reflection assignments were also analysed using the five-level scale. For students whose responses showed certain aspects of one level and certain aspects of another, the author assigned a level with a decimal of ".5". For example, a student whose response showed some aspects of Level 2 and some aspects of level three, a level of 2.5 was assigned to their response. As can be seen in Figure 3, half of the students' responses displayed a Level of 2.5 or below. Only one student displayed a level of 4.5, as that student reported planning to change specific aspects of their life after completing the assignment which is a sign of Level 5 self-reflection. Although that student displayed more signs of Level 3 self-reflection than level 4, the author still decided to label it Level 5 due to the specific plans to carry out action. The fact that half of the students displayed a self-reflection Level of 3 or higher represents some level of success for the research, as those levels are considered high levels of self-reflection by J.D. Bain, R. Ballantyne, J. Packer and C. Mills (1999) and the students displayed evidence of being able to do self-reflection at those levels after completing the unit.

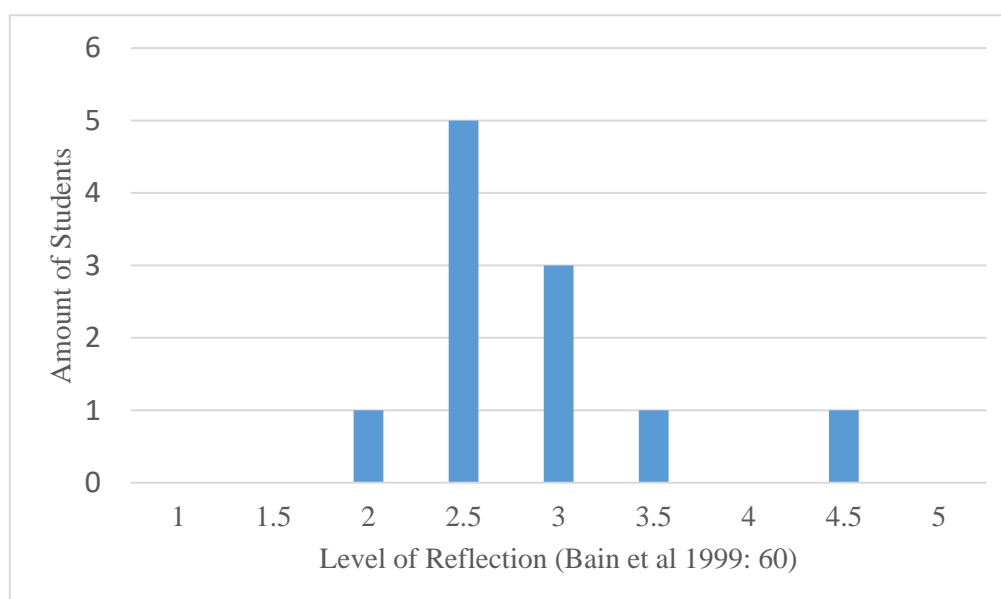


Figure 3. Level of self-reflection observed in final reflection assignments.

Only two of the twelve students who completed the assignment showed an increase in level on the five-point reflection scale between the first and last entries. Four of the students showed no increase in level, and six students showed a decrease in their level of reflection. This data shows that the reflection journals did not work as the author had intended them, and that there might have been an issue in the design of the unit that could be discovered through the students' responses to their final reflection assignments and their responses to the group interview.

On the unit grammar quiz, the mean grade for the class was 5.69 on a ten-point scale, which rounds up to a grade of "6". The E-Class (E-klase) system further categorizes the results as "high" (9-10), "optimal" (6-8), "sufficient" (4-5), and "insufficient" (1-3). The grades broken into these categories can be seen in Figure 4 below.

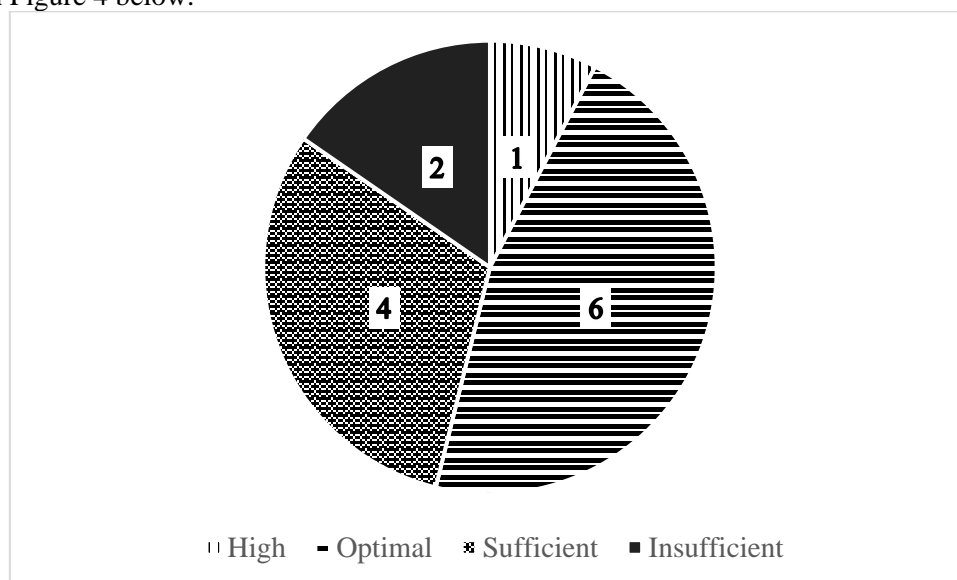


Figure 4. Students' learning results in unit grammar quiz (amount of students).

While more than half of the class scored at least "optimal", the author was disappointed that four students scored "sufficient" and three students scored "insufficient", almost half of the class altogether. This would indicate that knowledge of the usage of conditional phrases was still fairly inconsistent among the students who took part in the unit. This might indicate that more work should have been done practicing these conditional phrases outside of the self-reflection journal project, or that the author should have checked the journal entries more frequently to see that common mistakes were being made and help the students with the mistakes before they became internalized and were made on the final grammar quiz.

## Conclusions

Based on analysis of students' reflection journal entries, unit grammar tests, and final reflection assignments, the self-reflection unit designed and taught by the author was only partially successful in improving students' self-reflection skills and abilities in using third and mixed conditional phrases. Analysis of the first and last journal of each student showed a general decline or stagnation on the J.D. Bain, R. Ballantyne, J. Packer and C. Mills (1999) scale, contrary to the author's hope that students' level of reflection would improve. Since the author did not analyse the level of every entry that each student wrote it is impossible to conclude whether there was an improvement of level before a decrease towards the end of the unit, and future research should include more analysis of each journal entry. Students also struggled on the unit grammar test even after completing the self-reflection unit, and since the author did not make use of pre-testing it is impossible to know whether or not the students' knowledge and abilities improved in any way. Future research should include the use of pre- and post-testing of students' abilities in using conditional phrases.

In analysing students' experiences during the self-reflection unit based on their reflection journals and group interviews, the author would make changes to the curriculum were it to be taught again. Students were asked to write journal entries too frequently over a short period of time, and did not receive enough

support in the form of having their reflection journal entries reviewed and given feedback regarding. Students also felt uncomfortable in their abilities to do reflection, although they believed that their abilities in using conditional phrases improved. The author would modify the unit to provide more support in the self-reflection itself, possibly making use of the five-point scale so that students have objective criteria on how to self-evaluate their own self-reflection. A grading system which made use of the five-point scale or a similar system might motivate students to provide more thorough self-reflection than pass or fail grading criteria.

The author concludes that while critical incident analysis remains a promising technique to teach reflection skills as well as conditional phrase usage, further modifications must be made to realize its full potential.

### Bibliography

1. Bain J.D., Ballantyne R., Packer J., Mills C. (1999). Using Journal Writing to Enhance Student Teachers' Reflectivity During Field Experience Placements, *Teachers and Teaching: Theory and Practice*, Vol. 5(1), pp. 51 – 74.
2. Ballantyne R., Packer J. (1995). *Making Connections*. Canberra: Higher Education & Development Society of Australia.
3. Dymont J.E., O'Connell T.S. (2003) *Journal Writing in Experiential Education: Possibilities, Problems, and Recommendations*. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools.
4. Farrah M. (2012). Reflective Journal Writing as an Effective Technique in the Writing Process. *Humanities*, Vol. 26(4), pp. 998 – 1025. [online] [14.03.2016]. Available at [https://journals.najah.edu/media/journals/full\\_texts/reflective-journal-writing-effective-technique-writing-process.pdf](https://journals.najah.edu/media/journals/full_texts/reflective-journal-writing-effective-technique-writing-process.pdf)
5. Farrell T. S. C. (2012). Critical Incident Analysis Through Narrative Reflective Practice: A Case Study, *Iranian Journal of Language Teaching Research*, Vol. 1(1), pp. 79 – 89.
6. Flanagan J.C. (1954). The Critical Incident Technique. *Psychological Bulletin*, Vol. 51(4), pp.1229 – 1238.
7. Green-Lister P., Crisp B. R. (2007). Critical Incident Analyses: A Practice Learning Tool for Students and Practitioners. *Practice*, Vol. 19(1), pp. 47 – 60. [online] [20.01.2016] Available at <http://dx.doi.org/10.1080/09503150701220507>
8. Hatton N., Smith D. (1995). Reflection in Teacher Education: Towards Definition and Implementation, *Teaching and Teacher Education*, Vol. 11(1), pp. 33 – 49.
9. Kilianska-Przybylo G. (2009). The Analysis of “Critical Incidents” as a Way to Enhance Intercultural Competence. *Humanising Language Teaching*, Vol. 11(3).
10. *Noteikumi par valsts vispārējās vidējās izglītības standartu, mācību priekšmetu standartiem un izglītības programmu paraugiem (Regulations on the National General Secondary Education Standards, Study Subject Standards and Curriculum Samples)*. (2013). Cabinet of Ministers Regulations Nr.281 [01.11.2016]. Available at <http://likumi.lv/doc.php?id=257229&cs=f521ff1e> (in Latvian)
11. Nygren L., Blom, B. (2001). Analysis of Short Reflective Narratives: A Method for the Study of Knowledge in Social Workers' Actions. *Qualitative Research*, Vol. 1(3). pp. 369-384. [online] [16.02.2016]. Available at <http://dx.doi.org/10.1177/146879410100100306>
12. Priest A.M., Sturges P. (2005). “But is it Scholarship? Group Reflection as a Scholarly Activity.” *Studies in Learning, Evaluation, Innovation and Development*. Vol. 2(1). pp. 1 – 9. [online] [26.03.2016] Available at <http://acquire.cqu.edu.au:8080/vital/access/services/Download/cqu:1604/DS1?open=true>
13. Tripp D. (1993). *Critical Incidents in Teaching: Developing Professional Judgement*. London: Routledge.

## Formative Assessment as Three-sided Process in Higher Education

Anžela Jurāne-Brēmane Mg. paed., Mg. comp.  
Vidzeme University of Applied Sciences, Latvia<sup>1</sup>  
[anzelajb@gmail.com](mailto:anzelajb@gmail.com)

**Abstract:** Adequate assessment promoting learning and growth of competence of the students is a topical problem for the 21st century higher education. Formative assessment is actually in all the levels of education, starting from the end of the last century. However, it is still not a generally accepted part of the study process. The aim of the study was to indicate ways how to change the work of lecturers in order to promote learning and growth of competence through assessment. It was theoretical study as there is so broad research base for the emergence of the new ideas. Certainly most of the research refers to lower educational levels, but it is possible to apply this approach to higher education, too. The result obtained is a theoretical model of formative assessment as three-sided process that includes self-assessment, peer assessment and assessment made by lecturer. This model integrates teaching and learning making them equal. The significance of this model is idea that formative assessment is not extra work, but a different approach to the study process that increases ownership and involvement of the students in their learning. This model was a basis point for further empirical research on formative assessment practice in the higher education of Latvia.

**Keywords:** learning, higher education, formative assessment, feedback, peer and self-assessment.

### Introduction

Society awaits the education where the possibility to learn and gain achievements will be to each and every student rather than just get ranked and compared. Measurement made the assessment on intimidation instead of support and learning tools (Stiggins, 2005). There are significant changes in lecturer's activities in the study process when changing paradigm from subject-centred to student-centred occurs. The role of lecturer's pedagogical professionalism increases as well as the need to improve it in further education, first through the identification of needs followed by selection of appropriate approaches (Baranova, 2012).

There are several researches about linking of theory and practice indicating the lack of coherence between sciences explored and realized in practice (Bell, Cowie, 2000; Bennett, 2011; Christoforidou, Kyriakides et al., 2014; Ecclestone, Davies, 2010; Yorke, 2003). It is noted that there is a risk of losing the idea of formative assessment as a teaching and learning promoter, because in some places it is seen as another measuring tool, rather than fundamental process of teaching and learning (Heritage, 2010).

*The aim of the study* is to find out a way to formative assessment can promote learning in the study process. The aim of the article is to represent a part of the results of theoretical studies that shows the creation of the theoretical model of formative assessment.

### Methodology

Study is based on analyse of learning theories such as constructivist approach (L. Vygotsky) and connectivism (G. Siemens), transition to formative assessment (P. Black and D. Williams, D. Carless, S. Swaffield, A. Irons, I. Clark) then focusing on self-assessment and peer-assessment (J. Nicol and D. Macfarlane-Dick, N. Falchikov, D. Carless and N. F. Lui, S. Bloxham and P. Boyd) concluding with the evaluation of lecturer role (A. Rae, D. Cochrane, K. D. McConnell, P. E. Doolittle, T.A Angelo and K.P. Cross) and theoretical model.

Research question of the investigation: what the conditions of study process organization supporting formative assessment are.

Method of the research: study, analysis and evaluation of scientific literature.

### Results and discussion

There is so different use of the terms "assessment" and "evaluation" in literature. This article used the term "assessment" relating to activities in the study process, but "evaluation" only in some parts

speaking about more general processes. Also about teachers in higher education institutions is different use of terms: “university teacher”, “lecturer”, “teacher at university”, but this article used “lecturer”.

**Learning theories.** Linking with the constructivist approach observed in researches on learning and assessment, characterized by the terms "zone of proximal development", "scaffolding" according to the theoretical settings of L. Vygotsky (Clark, 2011; Hassan, 2011; Heritage, 2010; Kiralijs, 2004). L. Vygotsky analyses relations between the learning and development and rejects a variety of previous theories about their correlations, developing the theory of two levels of development: the first is the actual level of development which characterizes the current level of development of the mental function, formed as a result of the previous completed cycle. Whereas the second is a potential level of development, and the distance between these two levels is a zone of proximal development, defining the functions being in ripening process, illustrated by L. Vygotsky (Vygotsky, 1978) by words “buds” or “flowers”, not “fruits”. Zone of proximal development offers a new formula, namely good teaching that is slightly in front of development. L. Vygotsky emphasizes that learning is not a development, but learning is a necessary and universal aspect in the development process of psychological functions in organized culture. The process of development does not coincide with the process of learning; rather, it followed behind learning, this sequence results in a zone of proximal development (Vygotsky, 1978). In the context of the evaluation it should be noted that the zone of proximal development has been determined and this can be done only when assessment of the current level of development is done and then moving the learning, complying with zone of proximal development. Characterizing the support to learning in the next development zone formed the concept of "scaffolding" that illustrates this theoretical approach. L. A. Shepard (Shepard, 2005) with scaffolding characterizes the concept of support providing process to help students try and then acquire the increasingly complex tasks by themselves.

O. A. B. Hassan (Hassan, 2011) reveals the socio-cultural aspect of the theory of L. Vygotsky and emphasizes that a substantial characteristic of learning is the creation of this nearest development zone - learning stimulates a variety of processes of internal development that is activated only in interaction with other students or in collaboration with lecturers. Z. Rubene (Rubene, 2008) explains constructivist didactic model in which a student by himself forms and structures his knowledge and develops skills, working with tasks offered by lecturer. The student himself organizes his own learning, while the lecturer creates challenging learning situations, allowing to take risks and make mistakes, then letting correct these errors. The author emphasizes meaning of understanding as the core of study.

K. Illeris (Illeris, 2014) discusses on ideas of social constructivist and transformative learning that essentially are very different, because the social constructivist approach provides learning as an act of social interaction, while transformational learning is an individual process with changes in individual interest perspective and mental habits. However, learning can happen in both social and individual levels, besides simultaneously. The author links the Vygotsky's theory of learning the nearest development zone with transformative learning, as well as it is a kind of learning from the change (Illeris, 2014). In terms of the development of learning environment, it should be noted, that the social constructivists approach supports the learning from the nearest environment to the future.

**Formative assessment.** The idea of formative assessment linked with D. Kolb (Kolb, 1984) experiential learning theory where learning is seen as a cyclical process integrating perception, thinking, actions and feelings. Concepts created in this process were used for the creation of new experiences. Four aspects of the learning process are underlined in this theory: reliance on specific expertise, reflective observation, creation of abstract concepts, active experimentation.

Collaboration based learning approach which also connects with formative assessment, is ground for connectivism learning theory. It is based on the idea of learning not only from own, but also the experience of others, actively involving it in the learning process, conducted at time when the amount of information and technological opportunities, as well as the usability in the process of learning is growing rapidly (Siemens, 2004).

S. Swaffield indicates the origins of the English term “assessment” from the Latin term “assidere” meaning "sit down beside" that has disappeared from the assessment concepts, giving more importance to inspection and testing (Swaffield, 2011). To sit beside, so - to help students to learn, emphasizing the supporting role of teacher and lecturer.

M. Heritage underlines the necessary transition from the measurement paradigm to the learning paradigm, providing not to discuss formative assessment within measurement paradigm, but rather to focus on formative assessment's strong position in the learning paradigm (Heritage, 2010). The shift of the student role from reactive to pro-active, creating and using feedback, significant impacts the way how the lecturer organizes assessment and supports learning (Nicol, Macfarlane-Dick, 2006). Effective pedagogy is when the teaching activities focus on participation, for example, asking questions, giving feedback on the responses and actions, and developing special forms of dialogue between lecturers and students, as well as among students (Ecclestone, Davies, 2010).

I. Clark (Clark, 2014) uses the term "formative learning environment", where, as demonstrated by the researches, the student is actively involved and thus helping to prevent academic failure. Before that P. Black and D. Williams (Black, Wiliam, 2009) indicated, that the lecturer is responsible for the creating and implementation of the effective learning environments whereas the student is responsible for learning in this environment. Consequently, both the lecturer and the student are responsible to make every effort to minimize the impact of any failure, it is joint and has several liabilities.

D. Carless (Carless, 2009) characterizes learning-oriented assessment which includes three compatible dimensions: the assessment tasks as learning tasks, student involvement assessment and closed feedback loop (information from feedback is used in further activities and improvement of process). Feedback on progress is an essential aspect of the formative assessment for both students and lecturers. Researchers emphasize the feedback link with feed-forward that provide guidance for improvements in future activities and it is also important for both students and lecturers (Frey, Fisher, 2011; Wheatley, McInch et al., 2015). It is important that the teacher is able to react on student feedback about the ongoing process of learning.

Talking about assessment in general the author indicates the tensions and compromises the assessment process, for instance, assessment for productive learning and learning better on the one hand, and assessment as a judgment, aggregation of student achievement, assessment for accountability on the other hand; technical side of assessment and emotional side of assessment (both lecturer and student); assessment is on what students can do now, opposite of assessment, which prepare students for the future - sustainable assessment (Carless, 2009). There the author does not distinguish aspects of the typical formative assessment and typical summative assessment precisely, setting assessment as the top priority goal - promoting learning, according to this teaching approach - learning-oriented assessment.

A. Irons (Irons, 2007) stresses that formative assessment is not simply a series of tasks where the students receive feedback. Formative assessment and feedback are integrated in the student's learning process and learning experience and so they are the main aspects of teaching and learning.

I. Clark (Clark, 2011) indicates a theoretical ideal of formative assessment that allows students to develop their ability to accumulate evidence for their own learning and to interpret them, then use it to plan the next steps in their learning process. D. R. Sadler (Sadler, 1989) writes about the concept of the quality that must be as the basis assessment of the student's work or achievements; also a student should be able to see this quality concept similarly to lecturer's, as well as to be able to regulate the quality of his work. The author emphasizes three significant conditions for the formative assessment, when students: 1) focus their actions intended to the target standard; 2) compares the current performance level with the standard; 3) take appropriate action to prevent inadequacy.

A number of researchers characterize formative assessment as an important part in study process in higher education institutions (Gedye, 2010; Irons, 2007; Yorke, 2003). A. Irons (Irons, 2007) indicate that the justification for the formative assessment to be viewed in the context of higher education is the recognition that the appropriate use of feedback can promote student learning. Also S. Gedye (Gedye, 2010) indicates that the formative assessment is considered to be as one of the most important tools to improve student learning. M. Yorke (Yorke, 2003) described formative assessment as vital for students to learn. It is essential cooperation between staff and students, whose primary goal is to improve students' abilities to as fully as possible. However, a theoretical construct of formative assessment is not widely appreciated of university lecturers and there is too big impact of summative assessment, lecturers like their traditional role as assessor of achievements.

O. A. B. Hassan (Hassan, 2011) indicates that the formative assessment is designed to optimize students' knowledge and support student' learning, students reflect on their own learning and understand what

should be developed, expanded or improved. M. Heritage (Heritage, 2010) indicates five critically important components that may help lecturers in effective use of formative assessment: the progress of learning; learning goals and criteria for success; descriptive feedback; self-assessment and peer-assessment; cooperation.

***Self-assessment and peer-assessment.*** Reflection is one of the key concepts in researches on the self-assessment and peer-assessment (Grundmane, 2005; Illeris, 2014; Irons, 2007). By reflection on what has happened, on what has been learned or has not been learned, what to improve and how to continue, can significantly improve learning, since the students discuss and evaluate the results and it is particularly valuable in the development of competence (Illeris, 2014). Dz. Grundmane (Grundmane, 2005), describing the results of empirical research, indicates that reflection is an incentive for further learning activity as improvement of self-imposed experience occurs by reflecting the creation of new knowledge and skills. A. Irons (Irons, 2007) mentions reflective learning, pointing out that it is particularly strong when the lecturer or peer feedback is compared to the self-assessment concluded. It also facilitates a choice of deep learning strategies for students.

In researches the concept of self-assessment is related to self-regulation concept. For example, D. J. Nicol and D. Macfarlane-Dick (Nicol, Macfarlane-Dick, 2006) describes as monitoring and control of different components in the learning process such as setting of training target and progress towards them, management of resources, effort intensity, response to external feedback, the result of work.

In literature self-assessment and peer-assessment occasionally are mentioned as alternatives to the traditional assessment methods - assessment done by teacher or lecturer, as well as promoting the students' involvement (Carless, 2009; Clark, 2014; Khonbi, Sadeghi, 2013). Students' involvement in the mutual learning and mutual assessment develops students' autonomy in learning environment (Boud, Falchikov, 2007, Kingsley, 2010).

Unfortunately in research literature the self-assessment and peer-assessment are mostly viewed in the context of summative assessment, where students assess colleagues' work by points, levels or grades, sometimes making comments. At the same time the researchers point to the diverse problems that arise, when students are invited to assess themselves or their colleagues in a summative way such as doubts about the objectivity and fairness (Basnet, Brodie, 2010; Carless, Lui, 2006; Falchikov, 2003). D. Carless and N. F. Lui (Carless, Lui, 2006) conducted research at the Universities in Hong Kong surveying 1,740 students and 460 academics on a grade in peer-assessment identifying that grade discourages the peer-assessment and may threaten the potential of formative assessment to promote learning. B. Kingsley (Kingsley, 2010) surveyed students for experience of summative peer-assessment, the results were grouped in positive and negative aspects, and negative quantifiable were more. It has been concluded that the reliability of the results of summative peer-assessment, however, is doubtful, confirming the benefits of formative peer-assessment.

P. Black (Black, 2003) points out that the peer-assessment is an important addition to the self-assessment. Several researchers emphasize the substantial value of peer-assessment - it occurs in an easily understandable language for students, thereby comments and recommendations for further work are better understood (Basnet, Brodie, 2010; Black, 2003; Falchikov, 2003). Besides mutual discussions revealing perspective of solutions and alternative strategies, as well as developing students' capability of judgments, decisions formulation can be motivating to continue the engagement, in addition, it may be easier for the student to accept criticism of his work from colleagues, not from the lecturer (Nicol, Macfarlane-Dick, 2006). For the student it is simply to clarify the comment, interrupting other students, rather than interrupting lecturers if comment is incomprehensible (Black, 2003; Sadler, 1998). Peer groups are expected to have a higher level of expertise than that of a student working alone. Students learn among themselves and within co-operation to overcome the problems and to find appropriate solutions mutually assessing each other's work. More diverse perspective on things that is possible working in groups, helps to see problems in a more adequate way (Kiralijis, 2004).

As a practical recommendation N. Falchikov mentioned a method when during the work presentation students are asked to write their feedback as positive findings about the colleague at work, and to provide recommendations. The feedback the colleague receives after the completion of the presentation; always starts with a positive message, and includes recommendations for further work (Falchikov, 2003).



Sometimes peer-assessment is recommended as one of the solutions for the realization of formative assessment in large groups of students, where the lecturer is not able to provide a valuable feedback to each and every student. For instance, O. A. B. Hassan (Hassan, 2011) analyses the learning in group and its assessment, where great attention should be paid to be assessed in each individual learning, what can be done when a group is having discussion on the progress of each participant, as well as discussion on the recommendations. Receiving feedback from the lecturer, students can help each other to understand this feedback and then jointly develop and monitor the plan for further improvements, to develop their own learning activities (Van Aalst, 2013).

Not only one-way feedback from lecturer – to student is perceptible as an essential feature of formative assessment, but effective formative assessment is characterized by self-assessment and peer assessment, because a lecturer's feedback, even if it is regular, detailed and supportive, is not enough, to students to improve their results (Ecclestone, Davies, 2010). Also S. Bloxham and P. Boyd (Bloxham, Boyd, 2007) emphasizes that self-assessment and peer-assessment are essential components to help students to learn from assessment and become autonomous in their learning.

**Role of the lecturer.** The lecturer is the main mediator promoting students' learning and improvements in the implementation of formative assessment depend on the lecturer's understanding of formative assessment principles and practices (Carless, 2007). In addition to self-assessment and peer-assessment skills, raising awareness of feedback is one of the lecturer's tasks. Researching students' experiences and views on the written feedback, it has been concluded that students expected quite explicit assessment tasks, assessment criteria to discuss before the start of the task, as well as instructions on how best to use the feedback (Rae, Cochrane, 2008). N. Falchikov (Falchikov, 2003) points to the importance of lecturer's knowledge on psychology because knowledge on learning theories and knowledge about how students learn can help the lecturers to use activities that involve students as active agents in their learning process.

P. Black and D. Wiliam (Black, Wiliam, 2003, 7) emphasize that for the development of formative assessment lecturers need to change their daily teaching practice. As an important factor in the development of formative assessment authors state "a true acceptability" of lecturers. Authors conclude after an extensive research in various British schools that the question is no longer 'Does it work? "but" What we need to do to make this happen? ".

Lecturers need to obtain the information on students' prior knowledge and skills at the beginning of the course in order to effectively offer for students to improve their knowledge. This can be realized in different ways - multiple choice tests, reflective questions, discussions in groups. This information helps both to identify students' knowledge strengths and weaknesses, as well as to plan accordingly further learning (McConnell, Doolittle, 2011).

Since the end of the 20th century, assessment techniques applied in lessons, are well-known in the world, collected and analysed by T. A. Angelo and K. P. Cross (Angelo, Cross, 1993). The authors compiled 50 valuation techniques and grouped them into three groups: assessment techniques of knowledge and skills related to the study course; assessment techniques of students' attitudes, values and self-confidence; assessment techniques on the students' reactions to the teaching. The authors provide a description of each technique, indicating the objectives and related learning outcomes, offering recommendations for use, as well as examples, then pointing to the possibilities for use the data obtained by analysing the advantages and disadvantages of each evaluation method, warning of the risks (Angelo, Cross, 1993). Choices of appropriate techniques depends on the lecturer's pedagogical proficiency.

Research shows that the biggest barriers to formative assessment be implemented in practice is the size of group and workload, which form an idea that formative assessment is theoretical concept, that is impractical, laborious and inconsistent with the educational requirements (Carless, 2007; Hassan, 2011; Gedye, 2010). The workload of lecturers and students involved in the formative assessment researched a group of scientists lead by Lopez-Pastor, that formative assessment strategies require constant contribution into work during the semester, conversely summative assessment require more work before exams (López-Pastor, Pintor et al., 2012). Consequently, there are the need for discussions with both students and lecturers to discuss and explain the balance of the workload.

Many researchers emphasize the planning of the course to start with learning outcomes linking with different types of tasks as a significant resource for the realization of appropriate assessment. Only then the course content is adjusted (Fink, 2005; McConnell, Doolittle, 2011).

**Theoretical model.** This model (Figure 1) shows the formative assessment as the three-sided process. Therein all three sides are actively involved – lecturer, student and other students (colleagues). Feedback and feed-forward maintains the formative assessment process, besides, these links are active among all the three sides, as well as they are double-sided.

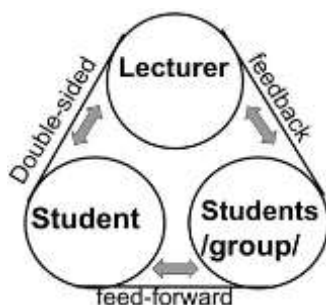


Figure 1. Model of study process organization supporting formative assessment.

Thereby formative assessment promotes learning and growing because anyone is involved and responsible in the process.

## Conclusions

Formative assessment in higher education institutions should be three-sided process to indeed promote learning. Theoretical model includes self-assessment, peer assessment and assessment made by lecturer, as well as integrates teaching and learning making them equal. To ensure all the students' engagement and cooperation is a task for the lecturer pedagogical proficiency. It is essential to be aware that formative assessment is not extra work, but different approach to the study process that increases ownership and involvement of the students in their learning. Feedback and feed-forward in this process are among all involved sides and they are double-sided. Whereas formative assessment is regarded as a three-sided process, then increase the responsibility of every involved side.

## Bibliography

1. Angelo T., Cross K. (1993). *Classroom Assessment Techniques: A Handbook for College Teachers* (2<sup>nd</sup> ed.). San Francisco: Jossey-Bass.
2. Baranova S. (2012). *Augstskolu docētāju profesionālā pilnveide tālākizglītībā* (Professional Development of Academic Staff of the University in Further Education). Promocijas darbs. Rīga: LU. (in Latvian)
3. Basnet B., Brodie L., Worden J. (2010). Peer Assessment of Assignment. *40th ASEE/IEEE Frontiers in Education Conference*. Washington: IEEE (e-resource). [online] [14.11.2016]. Available at: <https://core.ac.uk/download/pdf/11041309.pdf>
4. Bell B., Cowie B. (2000). The Characteristics of Formative Assessment in Science Education. *Science Education*, Vol. 85, pp. 536 – 553. [online] [14.11.2016]. Available at <http://www.duluth.umn.edu/~kzak/documents/BellSciEd01Assessment.pdf>
5. Bennett R.E. (2011). Formative Assessment: A Critical Review. *Assessment in Education: Principles, Policy & Practice*, Vol. 18(1), pp. 5 – 25.
6. Black P. (2003). The Nature and Value of Formative Assessment for Learning. *Improving Schools*, Vol. 6(3), pp. 7 – 22.
7. Black P., Wiliam D. (2003). 'In Praise of Educational Research': Formative Assessment. *British Educational Research Journal*, Vol. 29, pp. 623 – 637. [online] [14.11.2016]. Available at <https://core.ac.uk/download/pdf/82510.pdf>
8. Black P., Wiliam D. (2009). Developing the Theory of Formative Assessment. *Educational Assessment, Evaluation and Accountability*, Vol. 21(1), pp. 5 – 31.
9. Bloxham S., Boyd P. (2007). *Developing Effective Assessment in Higher Education: A Practical Guide*. Maidenhead, UK: Open University Press.

10. Boud D., Falchikov N. (2007). Assessment for the Longer Term. In D. Boud, N. Falchikov (Eds.) *Rethinking Assessment in Higher Education: Learning for the Longer Term*. London: Routledge, pp. 3 – 13. [online] [14.11.2016]. Available at [https://www.researchgate.net/publication/282240785\\_Introduction\\_Assessment\\_for\\_the\\_longer\\_term](https://www.researchgate.net/publication/282240785_Introduction_Assessment_for_the_longer_term)
11. Carless D. Liu N. F. (2006). Peer Feedback: The Learning Element of Peer Assessment. *Teaching in Higher Education*, Vol. 11(3), pp. 279 – 290. [online] [14.11.2016]. Available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.708.2822&rep=rep1&type=pdf>
12. Carless D. (2007). Conceptualizing Pre-emptive Formative Assessment. *Assessment in Education*, Vol. 14(2), pp. 171 – 184. [online] [14.11.2016]. Available at [http://web.edu.hku.hk/f/acadstaff/412/2007\\_Conceptualising-pre-emptive-formative-assessment.pdf](http://web.edu.hku.hk/f/acadstaff/412/2007_Conceptualising-pre-emptive-formative-assessment.pdf)
13. Carless D. (2009). Learning-oriented Assessment: Principles, Practice and a Project, In L. H. Meyer, S. Davidson, H. Anderson, R. Fletcher, P. M. Johnston, & M. Rees (Eds.), *Tertiary Assessment & Higher Education Student Outcomes: Policy, Practice & Research*. Wellington, New Zealand: Ako Aotearoa, pp. 79 – 90. [online] [14.11.2016]. Available at <https://ako.aotearoa.ac.nz/download/ng/file/group-4/n3380-learning-oriented-assessment---principles-practice-and-a-project.pdf>
14. Christoforidou M., Kyriakides L., Antoniou P., Creemers B. P. M. (2014). Searching for Stages of Teacher's Skills in Assessment. *Studies in Educational Evaluation*, Vol. 40, pp. 1 – 11. [online] [14.11.2016]. Available at [https://www.researchgate.net/profile/Bert\\_Creemers/publication/259511582\\_Searching\\_for\\_stages\\_of\\_teacher's\\_skills\\_in\\_assessment/links/53dfd3c50cf2aede4b49497d.pdf](https://www.researchgate.net/profile/Bert_Creemers/publication/259511582_Searching_for_stages_of_teacher's_skills_in_assessment/links/53dfd3c50cf2aede4b49497d.pdf)
15. Clark I. (2011). Formative Assessment and Motivation: Theories and Themes. *Prime Research on Education*, Vol. 1(2), pp. 27 – 36. [online] [14.11.2016]. Available at <https://www.primejournal.org/PRE/pdf/2011/may/Clark.pdf>
16. Clark I. (2014). Equitable Learning Outcomes: Supporting Economically and Culturally Disadvantaged Students in 'Formative Learning Environments'. *Improving Schools*, Vol. 17(1), pp. 116 – 126. [online] [14.11.2016]. Available at <http://journals.sagepub.com/doi/pdf/10.1177/1365480213519182>
17. Ecclestone K., Davies J., Derrick J., Gawn J. (2010). *Transforming Formative Assessment in Lifelong Learning*. Berkshire, England: Open University Press.
18. Falchikov N. (2003). Involving Students in Assessment. *Psychology Learning Teaching*, Vol. 3(2), pp. 102 – 108. [online] [14.11.2016]. Available at [https://pes.concordia.ca/docs/involving\\_students.pdf](https://pes.concordia.ca/docs/involving_students.pdf)
19. Fink L. D. (2005). Integrated Course Design. *IDEA PAPER*, 42. [online] [12.11.2016]. Available at [online] [14.11.2016]. Available at [https://events.educause.edu/sites/default/files/library/presentations/E08/SEM09P/Idea\\_Paper\\_42.pdf](https://events.educause.edu/sites/default/files/library/presentations/E08/SEM09P/Idea_Paper_42.pdf)
20. Frey N., Fisher D. (2011). Feedback and Feed Forward: Giving Specific, Constructive Feedback to Individual Students Yields Deeper Understanding, and Using Student Data to Look for Patterns Across Students Allows Teachers to Make Good Instructional Decisions. *Principal Leadership*, Vol. 11(9), pp. 90 – 93.
21. Gedye S. (2010). Formative Assessment and Feedback: A Review. *Planet*, Vol. 23(1), pp. 40 - 45.
22. Grundman Dz. (2005). Darbības pieredzes nozīme pašnoteiktas mācīšanās pilnveidē (The Role of Operational Experience in Improvement of Self-imposed Learning). Koķe T. (Red.). *Pētījumi pieaugušo pedagoģijā*. Rīga: LU Akadēmiskais apgāds, 112. – 119.lpp. (in Latvian)
23. Hassan O. A. B. (2011). Learning Theories and Assessment Methodologies – an Engineering Educational Perspective. *European Journal of Engineering Education*, 36(4), pp. 327-339.
24. Heritage M. (2010). *Formative Assessment and Next-Generation Assessment Systems: Are we Losing an Opportunity?* Washington: The Council of Chief State School Officers. [online] [14.11.2016]. Available at [https://www.edpolicyinca.org/sites/default/files/Formative\\_Assessment\\_Next\\_Generation\\_2010.pdf](https://www.edpolicyinca.org/sites/default/files/Formative_Assessment_Next_Generation_2010.pdf)
25. Illeris K. (2014). *Transformative Learning and Identity*. London: Routledge.
26. Irons A. (2007). *Enhancing Learning through Formative Assessment and Feedback*. London and New York: Routledge.
27. Khonbi Z. A., Sadeghi K. (2013). The effect of assessment type (self vs. peer) on Iranian University EFL Students' Course Achievement. *Procedia - Social and Behavioral Sciences*, 70, pp. 1552 – 1564.

28. Kingsley B. (2010). But I'm No Expert! Peer Assessment by First-Year Psychology Undergraduates. *Psychology Learning and Teaching*, Vol. 9(1), pp. 7 – 15.
29. Kiralijs D. (2004). Par kvalitatīvu kooperatīvās mācīšanās novērtējumu tulkotāju izglītībā - konstruktīvisma pieeja (A Qualitative Assessment of Cooperative Learning in Education of Translators - Constructivist Approach). Plaude I. (Red.). *Kooperatīvā mācīšanās*. Rīga: Raka, 217. – 233.lpp. (in Latvian)
30. Kolb D. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, New Jersey: Prentice Hall.
31. López-Pastor V., Pintor P., Muros B., Webb G. (2012). Formative Assessment Strategies and their Effect on Student Performance and on Student and Tutor Workload: The Results of Research Projects Undertaken in Preparation for Greater Convergence of Universities in Spain within the European Higher Education Area (EHEA). *Journal of Further and Higher Education*, Vol. 37(2), pp. 1 – 18.
32. McConnell K. D., Doolittle P. E. (2011). Classroom-Level Assessment: Aligning Pedagogical Practices to Enhance Student Learning. In C. Secolsk, D.B. Denison (Eds.). *Handbook on Measurement, Assessment, and Evaluation in Higher Education*. Routledge, pp. 15 – 30.
33. Nicol D. J., Macfarlane-Dick D. (2006). Formative Assessment and Self-Regulated Learning: A Model and Seven Principles of Good Feedback Practice. *Studies in Higher Education*, Vol. 31(2), pp. 199 – 218.
34. Rae A.M., Cochrane D.K. (2008). Listening to Students: How to Make Written Assessment Feedback Useful. *Active Learning in Higher Education*, Vol. 9(3), pp. 217 – 230.
35. Rubene Z. (2008). *Kritiskā domāšana studiju procesā (Critical Thinking at the Study Process)*. Rīga: LU Akadēmiskais apgāds. (in Latvian)
36. Sadler D. R. (1989). Formative Assessment and the Design of Instructional Systems. *Instructional Science*, Vol. 18(2), pp. 119 – 44. [online] [14.11.2016]. Available at <http://michiganassessmentconsortium.org/sites/default/files/Formative%20Assessment%20and%20Design%20of%20Instructional%20Systems.pdf>
37. Shepard L. A. (2005). Formative Assessment: Caveat Emptor. In C. A. Dwyer (Ed.). *The Future of Assessment: Shaping Teaching and Learning* (pp. 279 – 303). Mahwah, NJ: Lawrence Erlbaum Associates. [online] [14.11.2016]. Available at <http://www.csa-online.com/sites/default/files/resource/imported/shepard%20formative%20assessment%20caveat%20emptor.pdf>
38. Siemens G. (2004). Connectivism: A Learning Theory for the Digital Age. [online] [15.11.2016] Available at <http://www.elearnspace.org/Articles/connectivism.htm>
39. Stiggins R. (2005). From Formative Assessment to Assessment FOR Learning: A Path to Success in Standards-based Schools. *Phi Delta Kappan*, Vol. 87(4), pp. 324 – 328. [online] [14.11.2016]. Available at [https://www.pearsonhighered.com/mediaproducts/ati/downloads/fromformat\\_k0512sti1.pdf](https://www.pearsonhighered.com/mediaproducts/ati/downloads/fromformat_k0512sti1.pdf)
40. Swaffield S. (2011). Getting to the Heart of Authentic Assessment for Learning. *Assessment in Education: Principles, Policy and Practice*, Vol. 18(4), pp. 433 – 449.
41. Van Aalst J. (2013). Assessment in Collaborative Learning. In C.E. Hmelo-Silver, C.A. Chinn, C.K.K. Chan, A.O'Donnell (Eds.). *International Handbook of Collaborative Learning*. New York: Routledge, pp. 280 – 296.
42. Vygotsky L. (1978). Interaction Between Learning and Development. In: M. Gauvain, M. Cole, (Eds.) *Readings on the Development of Children* New York: Scientific American Books, pp. 34 – 40. [online] [14.11.2016]. Available at [http://www.colorado.edu/physics/phys4810/phys4810\\_fa08/4810\\_readings/vygot\\_chap6.pdf](http://www.colorado.edu/physics/phys4810/phys4810_fa08/4810_readings/vygot_chap6.pdf)
43. Wheatley L., McInch A., Fleming S., Lord R. (2015). Feeding Back to Feed Forward: Formative Assessment as a Platform for Effective Learning. *Kentucky Journal of Higher Education Policy and Practice*, Vol. 3(2). [online] [19.11.2016] Available at <http://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1027&context=kjhepp>
44. Yorke M. (2003). Formative Assessment in Higher Education: Moves Towards Theory and the Enhancement of Pedagogic Practice. *Higher Education*, Vol. 45(4), pp. 477 – 501.

## Readiness for Applying Innovations Promoting Retardation of the Pace of Resources Transformation in Rural Areas

Joanna Kostecka<sup>1</sup> Prof. Dr. hab.; Maria Cyrankowska<sup>2</sup> MA

Department of Biological Basis of Agriculture and Environmental Education, Faculty of Biology and Agriculture, University of Rzeszów, Poland<sup>1</sup>

Foreign Languages Centre, University of Rzeszów, Poland<sup>2</sup>

[jkosteck@ur.edu.pl](mailto:jkosteck@ur.edu.pl)<sup>1</sup>; [m.cyrankowska@gmail.com](mailto:m.cyrankowska@gmail.com)<sup>2</sup>

**Abstract:** The article presents some aspects of sustainable development in rural areas, stressing the need for activation of local communities to take local initiatives moderating the adverse transformation of the ecosystems. The paper is a review article based on the literature analysis. Its goal was to highlight the role of the Polish rural areas in the protection of biodiversity and highlight the need for education of their residents, for making innovative solutions for the protection of the natural resources. The authors also requested students of Agriculture at the University of Rzeszów (Poland) to express their opinions about and attitude to the problem of innovation, as the basis for applying for EU funds in support of rural development for the period of 2014-2020. The questions concerning innovations referred especially to those which allow slowing down the pace of consumption of the resources. Interest in innovation was shown by 70 % of the students, who generally properly understand this issue. Respondents expected innovation mainly in agriculture (100 %). Students' interest in innovations in areas other than agriculture covered mainly medicine, investments, production of consumption goods and sustainable life style. Just under half (47 %) of the respondents were interested in innovations in the field of ecosystems and biodiversity protection. The results of the evaluation clearly indicate the need for further education in the scope of justifying the need to seek and introduce innovative measures to protect nature and its resources.

**Keywords:** biodiversity, innovations, retardation, Poland, university education.

### Introduction

Sustainable rural development is an economic process that consists in using natural resources in such a way as to meet the food needs of present and future generations. By introducing the environmentally friendly production technology, it aims to maintain and even increase the production potential of these areas. Sustainable agriculture must protect the soil, water and genetic resources of crops and livestock. It must also be understood by the local communities as a long-term strategy for the future by means of:

- using resources in a way that does not damage their ability to renew,
- acting for the food production increase only by increasing productivity of resources,
- acting for the symbiosis of both ecological and production goals,
- maintaining the high quality of the natural environment.

Implementation of those targets requires full approval of local communities, seeking a new lifestyle and innovative methods to improve the way they step toward balancing the social, economic and environmental aspects of their development.

Poland's integration with the European Union and the membership benefits received in the years 2004-2016, is a very good period for Polish rural areas and their inhabitants. As a result of the common agricultural policy and cohesion, there has been some improvement in the income and infrastructure as well as education. Rural areas have become more attractive places of residence, and the number of rural population and its share in the total population has been increasing in Poland since 2000 (Wilkin, Nurzyńska, 2016).

There are more and more enterprises being located in rural areas, but one must not forget that due to the variety of habitats and landscapes, these areas are primarily the main sanctuary of biodiversity of unique character in Europe.

The study highlights the role of the Polish rural areas in biodiversity conservation and the need to seek innovative solutions for not only economic and social spheres but also the natural one, which must be protected against excessive pressure from the former two. Undertaken innovative activities should be an interconnected group of initiatives aimed at the innovative decision of redirecting the reality of rural



areas towards sustainable development by making such choices promoting slowing down the conversion and use of natural resources (Poskrobko, 2010; Kostecka, 2010, 2013a) at the same time achieving socially friendly economic results.

The authors' objective was also to ask the students of Agriculture at the University of Rzeszow (Poland) about their opinions on the topic of innovation as an important basis for applying for EU funds in support of rural development, in view of the new funding for the period 2014-2020.

The results of this evaluation are very important for identifying or adjusting the specific objectives of education for the surveyed students in the next academic year.

### **Material and methodology**

This paper is a review article, based on a study of the problem and analysis of the literature. The authors educate the students of Agriculture at the University of Rzeszow (Poland) in the range of several environmental subjects (biological basis of agriculture, ecology, environmental protection and ecophilosophy) as well as specialized English language and their objective was to research the students' opinions concerning innovation. It is important that future farmers apply for the support of the EU funds in rural development and in view of the new funding for 2014-2020, the aspect of innovation is an important element.

Students were also asked to assess the state of ecosystems and biodiversity, and the need for innovation for sustainable lifestyles and slowing the rate of ecosystems destruction. The results of this evaluation will be useful for planning the content emphasis and expansion in the conducted courses.

There were two short surveys conducted in Oct./Nov. 2016. First, the young people (5 women and 15 men) were asked about the willingness to innovate in rural areas. Then they were asked to assess the state of ecosystems and biodiversity, as well as the need for innovation for sustainable lifestyles and slowing down the pace of destruction of the ecosystems.

### **Results and discussion**

#### ***Urgent need for halting biodiversity loss***

Conservation of biodiversity is essential from the economic, social and scientific point of view. Contact with properly functioning nature is essential for humans. Biodiversity determines the well-being based on broadly understood ecosystem services (Mizgajski, Bernaciak, 2014; Kostecka 2013a, 2013b). The Millennium Report constructed at the turn of the centuries (Guide to ..., 2015) points out that across the globe 60 % of ecosystem services is currently being degraded or used contrary to the objectives of sustainable development, which would allow these services to rebuild themselves. The extinction of species is most often associated with their natural habitat disappearance, introduction of species from other geographical areas or direct destruction of individuals. The disappearance of habitats results from the development of road networks, urbanization, eutrophication, wetland drainage, soil contamination, monoculture crops, and many other reasons, including the tourist industry pressure. The presence and extent of these problems is related with the increasing consumption, changes in the economy, delays in the implementation of environmentally friendly technologies, and others, but mainly due to the low ecological awareness of the communities.

To protect biodiversity, signatories to the Convention on Biological Diversity (CBD) (CBD-Biodiversity ..., 2015) introduce various practical solutions including an international initiative called: *Communication, Education, Public Awareness-CEPA / CBD* (Kalinowska, 2016). Established in Montreal CBD Secretariat was obliged by the Conference of the Parties to appoint CEPA's international team of experts - the Informal Advisory Committee (IAC) called CEPA / IAC (Meeting of the Informal Committee ..., 2016).

CEPA / IAC experts believe that it is necessary to put a greater emphasis not on the accumulation of knowledge but on the ability to act locally, create a sustainable lifestyle and build a conviction about the need for the linkages between the state of biodiversity and the welfare of people. This is important because, despite the considerable efforts undertaken in many countries to halt the loss of biodiversity, the evaluation of the implementation of the Strategy for Biodiversity for the period 2011-2020 (Global Biodiversity Outlook 4, 2014) is poor (Kalinowska, 2016). According to many indicators, at least until 2020, the pressures on biodiversity will continue and even grow, and its resources will decrease. This will be the

result of insufficient concern for biodiversity at the level of daily activities, ways of thinking, problem solving and resource management without prophylactic slowing down the conversion of ecosystems (Kostecka, 2010, 2013a, 2013b). Research results indicate that today the main factors (over 70 %) responsible for the loss of diversity are linked with agriculture and food production. It seems that it is largely due to the greater availability of natural values in rural areas than in cities and to thinking that commonly available goods are not valuable enough. So to slow down the rate of adverse changes, the key is not only the pursuit of sustainable agriculture, sustainable production and consumption, but also the development of new trends in lifestyle. It is hard to imagine such changes without the development of public awareness of all the social groups affecting ecosystems and using their services, namely decision-makers, producers and consumers all around the world. The *Convention on Biological Diversity*, adopted at the Earth Summit in Rio de Janeiro in 1992, is an international agreement comprehensively covering all aspects of our relationships with the natural resources.

### **What is innovation?**

The term "innovation" comes from Latin *innovatio* and means renewal. Since the term now and in the future is to decide on the granting of funding for many activities, including those in rural areas, its interpretation should be spread to the future beneficiaries of those funds in the most favourable sense (Kostecka, Kostecki, 2016).

While in science innovation should be understood as actually the first, original solution of a problem of a certain nature, showing a new manner of operation or solving a research problem, in practical areas, however, innovation for a particular social group may be understood as breaking the previously existing standard procedure, imitating better functioning solutions, "borrowing" solutions from other areas of life, industries, regions or even countries.

In social economics, innovation can be understood as new areas of business, new ways to support social entrepreneurship, or innovative tools, as well as a practical application of the principles of sustainable development, which have not been used in the area before.

According to A. Śpionek (2016) innovations can be divided into the following:

- according to the area of innovation: product innovation – i.e. improving the product; procedural one- changing methods of manufacture (or services); organizational and marketing,
- according to the degree of novelty: global, regional or local innovation, concerning a branch of industry or an enterprise,
- from the point of view of the changes they cause: radical - new products, technologies or way of management, recombination – using the existing technology, production and organization in order to create new products and modification –introducing minor changes to existing products, aiming to improve them.

According to R.K. Merton (2011) innovative actions in a given group consist in criticism of values, opinions and behaviours functioning in the group, and the introduction of a new quality. New quality - innovation - relates primarily to the means of accomplishing the objectives of the group, to which there is a consent. The new measures do not necessarily coincide with the system of values professed earlier. Initially, the action being innovative can be met with contempt or harsh criticism in a society or social group, but they often disseminate and finally become binding. According to J. Kostecka and A.W. Kostecki (2016) innovative solutions can be widely known, but used in a new way, or jointly with other activities. The condition is that this type of application and connection has not been previously widely used (especially in this area).

### ***Willingness to innovate in the Polish rural areas***

Most of the students of Agriculture, University of Rzeszow, were interested in innovation (70 % of the respondents) and properly understood (90 %) the notion of innovation as being associated mainly with something that makes life easier. The respondents (100 %) declared that they thought strategically about the future and a vast majority (72 %) considered themselves innovators. They expected innovations in agriculture (100 %), a few also mentioned other areas of life requiring innovation. They hoped that innovations would make their everyday life easier. These same students were asked to express their

opinions again after a couple of weeks. This time they were asked to assess the state of ecosystems and biodiversity (Table 1).

Table 1.

## Students' answers (%)

Questions	Answers				
	It is/They are in a good condition	It is/They are destroyed to the degree of			
		10-20 %	20-40 %	40-60 %	60-80 %
How do you assess <b>the state of ecosystems</b> in your area?	40	33	20	7	0
How do you assess <b>the state of ecosystems</b> on the Earth?	0	0	33	67	0
How do you assess <b>the state of biodiversity</b> in your area?	40	33	27	0	0
How do you assess <b>the state of biodiversity</b> on the Earth?	0	6	60	20	14

The state of both – the ecosystems and biodiversity of the students' surroundings were assessed better (40 % of the respondents) than the status of ecosystems and diversity of the Earth. This was probably the result of the assimilation of information contained in the Millennium Report (Guide to ... 2016). However, some of students of agriculture (Table 1) do not seem to have assimilated the knowledge well, as the authors of the Millennium Report, who researched the ecosystems of the Earth, stated that **60 % of the services (15 out of 24) provided by the ecosystems have been destroyed or used in an unsustainable way.**

Students' interest in innovations in areas other than agriculture covered mainly medicine, investments, production of consumption goods and sustainable life style (Table 2). Just under half of the respondents (47 %) were interested in innovations in the field of ecosystems and biodiversity protection. The fewest of the students pointed innovations in education, economics and law as very important, and what is interesting – the same refers to the innovations in obtaining energy (Table 2), although when asked to give examples of innovations that help to slow down the pace of the resource diversity use, the students mentioned innovations from that group (Table 3).

Table 2.

## Students' interest in innovations in areas other than agriculture. Question and students' choices (%)

If I was looking for innovation in the area other than agriculture, it would be connected with *			
area	%	area	%
Medicine	73	Economy	20
Sustainable life style	53	Law	27
Ecosystems protection	47	Production of consumption goods	60
Education	27	Energy generation	12
Protection of biodiversity	47	Investments	67

\* possibility of 5 most important choices



Table 3.

**Students' opinions concerning other issues (%)**

Questions	Answers				
	Definitely yes	Yes	I don't know	No	Definitely not
Do we need innovations?	40	60	0	0	0
Do we need slowing down the pace of consumption of natural resources?	47	47	6	0	0
Does excessive consumption of natural resources affect you?	20	67	0	13	0
Do we need innovations allowing for slowing down the pace of consumption of biodiversity resources	27	67	6	0	0
Give examples (other than using recycled materials)					
Do you support financial provision for pro-environmental innovations?	33	67	0	0	0

The respondents were asked about their opinion if we need to slow down the pace of consumption of natural resources (Table 3). Positive answer was given by 94 % of the respondents. Six percent of them did not know the answer to this question. Similarly, 94 % of those who responded felt that we need innovations that help to slow down the pace of the resource diversity use. Examples of the expected effective innovations included: solar panels and windmills, geothermal energy, ecologically friendly household power stations and motor engines powered by hydrogen. All the students opted for the financial support for pro- environmental innovations (Table 3).

In the survey (Table 1), 70 % of the students showed interest in innovation and they expected it primarily in agriculture (100 %). When later asked to define other areas where innovations were needed, they pointed out at medicine, investments, production of consumption goods and sustainable life style. Unfortunately, less than half of the respondents were interested in innovations in the field of ecosystems and biodiversity protection. Education scored the lowest.

### Knowledge and education

The student survey results should be evaluated in the context of importance of the ecosystem services and biodiversity described by many authors (Chichilnisky, Heal, 1998; Costanza, d'Arge, 1997; Lautenbach, Seppelt, 2012) as *a lack of knowledge*. In Europe, a similar situation was found in various cross-sectional social studies concerning biodiversity awareness (Kalinowska, 2014).

However, with a deluge of information and constant access to information technologies it is easy for everybody to overlook things that are really important. The world is changing and innovations are needed in every field of life. Common sense dictates that we should start with changes in and a different approach to education and upbringing.

We are born with great potential, which is often wasted throughout the process of socialization. As small children we are usually happy, creative, with an individual view of the world, curiosity, sensitivity and a lot of imagination. We are not afraid of making mistakes, we live here and now, and probably that is why we absorb knowledge quickly and learn effectively. At the same time our talents begin to develop, but unfortunately only a few of us manage to sustain them to be fully developed in adulthood, not only for the sake of the individuals but other people as well. The current system of education, the formal

framework of which was established in the nineteenth century to meet the needs of industrialism, despite many reforms, does not meet the expectations of the modern world because it is a completely different world. It seems that, in spite of the efforts of many great teachers, the school does not really value, is not capable of or is not fit for developing individual talents, encouraging enthusiasm, creativity, imagination, self-esteem and self-confidence. It should not be like that because students equipped with those strengths would feel greater empathy and responsibility for themselves and the world around. Instead, the main focus is placed on mistakes and what they do wrong. It turns out, however, that if we are not ready to be wrong and do not allow ourselves and others to make mistakes, which are an integral part of the learning process and a kind of a signpost, we will never create anything new or original (Robinson, 2006).

Moreover, the school usually does not teach us to build good relationships with ourselves, other people or nature. It seldom lifts us up but often discourages by criticism, complaining, threatening, punishing and rewarding, which is a kind of control, instead of caring, listening, supporting, encouraging and trusting (Glasser, 2005). Therefore, the above mentioned lack of knowledge and awareness concerning the importance of ecosystem services and biodiversity for individual people and the environment results from the fact that in the broadly defined education there is not enough time, effort and energy devoted to the things that are most essential for human well-being and survival of the world as we know it.

## Conclusion

The issues discussed in the paper are important for building sustainable development and improving the relations between man - ecosystems and man - biodiversity. The agricultural students' survey results should be assessed as the situation where further and broader education is definitely required. The indication of the need to create and implement innovations aimed at protecting ecosystems and biodiversity (less than half of those who responded) gives grounds to believe that at the time the United Nations General Assembly announced the period between 2011-2020 the United Nations Decade of Biodiversity, we must double our efforts to convince people of different professions and ages that ecosystems quality and biodiversity is the basis for our good life now and in the future. As the described assessment of students beliefs shows, it should also apply to the students supervised by the authors of the publication. Therefore, they suggest that every responsible teacher should carry out periodic evaluation of the effect of their actions by identifying the knowledge and attitudes of their students and adjust the conducted educational activities according to the obtained results.

It is urgent to slow down the pace of biodiversity degradation, and it remains in connection with accelerating a well-run and effective education. More emphasis should be put on the local activities, sustainable lifestyles and understanding of the relationship between the state of biodiversity and the welfare of people.

## Bibliography

1. *CBD-Biodiversity and the 2030 Agenda for Sustainable Development*. (2015). [online] [15.11.2016]. Available at <https://www.cbd.int/development/doc/sdg-sep2015-flyer.pdf>
2. Chichilnisky G., Heal G. (1998). Economic Returns from the Biosphere. *Nature*, Vol. 391 (2), pp. 629 – 630. [online] [15.11.2016]. Available at <http://www.chichilnisky.com/wp-content/uploads/2016/09/Economic-Returns-from-the-Biosphere-February-12-1998..pdf>
3. Costanza R., d'Arge R., de Groot R., Farber S., Grasso M., Hannon B., Limburg K., Naeem S., O'Neill R.V., Paruelo J., Raskin R.G., Sutton P., van den Belt M. (1997). The Value of the World's Ecosystem Services and Natural Capital. *Nature*, Vol. 387 (15), pp. 253 – 260. [online] [15.11.2016]. Available at [https://www.researchgate.net/publication/229086194\\_The\\_Value\\_of\\_the\\_World's\\_Ecosystem\\_Services\\_and\\_Natural\\_Capital](https://www.researchgate.net/publication/229086194_The_Value_of_the_World's_Ecosystem_Services_and_Natural_Capital)
4. Glasser W. (2005). Każdy uczeń może osiągnąć sukces (Every Student Can Succeed). *Pracownia Alternatywnego Wychowania*, pp. 9 – 26.
5. Global Biodiversity Outlook 4. (2014). *A Mid-Term Assessment of Progress Towards the Implementation of the Strategic Plan for Biodiversity 2011-2020*. Montreal: Secretariat of the Convention on Biological Diversity.
6. *Millenium Ecosystem Assessement. Guide to the Millenium Assessment Reports* (2015). [online] [15.11.2016]. Available at <http://www.millenniumassessment.org/en/index.html>

7. *Meeting of the Informal Advisory Committee on Communication, Education and Public Awareness.* (2016). Meeting documents. [online] [10.11.2016]. Available at <https://www.cbd.int/doc/?meeting=5595>
8. Kalinowska A. (2014). Biodiversity Loss and Public Opinion: What is the Situation in Central Europe? In: Vavra J., Lapka M., Cudlinowa E. (Eds.). *Current challenges of Central Europe: Society and Environment*. Prague: Univerzita Karlova in Prague, pp. 68 – 82.
9. Kalinowska A. (2016). How to Speed up the Changes of Public Awareness to Retard the Rate of Biodiversity Loss. *Polish Journal for Sustainable Development*, Vol. 20, pp. 67 – 76. (in Polish with English summary).
10. Kostecka J. (2010). Natural Resources Processing Retardation as an Element of Sustainable Development. *Biuletyn Komitetu Przestrzennego Zagospodarowania Kraju PAN*, (Newsletter of the Committee of the National Spatial Planning of the Polish Academy of Science), Vol. 242, pp. 27 – 49. (in Polish).
11. Kostecka J. (2013a). Retardation of Pace of Life and Resources Transformation – Some Implications for Citizens. *Inżynieria Ekologiczna (Ecological Engineering)*, Vol. 34, pp. 38 – 52. (in Polish with English summary).
12. Kostecka J. (2013b). Self-Evaluation on the Way to Retardation of Pace of Life and Resources Transformation. *Problems of Sustainable Development*, Vol. 8(2), pp. 93 – 102.
13. Kostecka J., Kostecki A.W. (2016). Rural Transformation Based on Innovations. In *Environment Protection*, Vol. CLXXIII. Polska Akademia Nauk. Komitet Przestrzennego Zagospodarowania Kraju PAN. *Studia. (Newsletter of the Committee of the National Spatial Planning of the Polish Academy of Science. Study)*, pp. 197 – 212. (in Polish with English summary).
14. Lautenbach S., Seppelt R., Liebscher J., Dormann C.F. (2012). Spatial and Temporal Trends of Global Pollination Benefit. *PLoS ONE*, Vol. 7(4). [online]. [15.11.2016]. Available at <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0035954>
15. Merton R. K. (2011). *Social Theory and Social Structure: Toward the Codification of Theory and Research*. University of California, p. 423.
16. Mizgajski A., Bernaciak A., Kronenberg J., Roo-Zielińska E., Solon J., Śleszyński J. (2014). Development of the Ecosystem Services Approach in Poland. *Ekonomia i Środowisko (Economy and Environment)*, Vol. 4(51), pp. 10 – 19.
17. Poskrobko B. (2010). A New Attitude Towards Natural Riches as a Fundament to the Retardation of the Use of Resources. *Biuletyn Komitetu Przestrzennego Zagospodarowania Kraju PAN* (Newsletter of the Committee of the National Spatial Planning of the Polish Academy of Science), Vol. 242, pp. 50 – 64. (in Polish).
18. Robinson K. (2006). *Do Schools Kill Creativity?* [Video: TED talk show] [online] [17.11.2016]. Available at [https://www.ted.com/talks/ken\\_robinson\\_says\\_schools\\_kill\\_creativity](https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity)
19. Śpionek A. (2016). *Innowacyjność - definicja, ogólne informacje o innowacyjności w regionie (Innovation - Definition, General Information about Innovation in the Region)*. Łódź, Poland: Uniwersytet Łódzki. [online] [15.11.2016]. Available at [http://dspace.uni.lodz.pl:8080/xmlui/bitstream/handle/11089/17092/11\\_pdf\\_Innowacje2010.pdf?sequence=1&isAllowed=y](http://dspace.uni.lodz.pl:8080/xmlui/bitstream/handle/11089/17092/11_pdf_Innowacje2010.pdf?sequence=1&isAllowed=y) (in Polish)
20. *United Nations Decade on Biodiversity 2011-2020, COP 10*, 2010. Montreal: UNEP. Secretariat of CBD. [online] [15.11.2016]. Available at <https://www.cbd.int/undb/home/undb-strategy-en.pdf>
21. Wilkin J., Nurzyńska I. (red.). (2016). *Polska wieś 2016. Raport o stanie wsi (Polish Countryside in 2016. Report on the State of the Countryside)*. Warszawa: Wydawnictwo Naukowe, pp. 253. (in Polish).

## Human Resources and Optimization of Evaluation Processes as the Basis of the Quality Management System

**Pavel Krpálek**<sup>1</sup> Dipl. Ing., Ph.D.; **Katarína Krpáľková-Krelová**<sup>2</sup> Dipl. Ing.,  
Ph.D. University College of Business in Prague, Czech Republic<sup>1</sup>;  
University of Economics in Prague, Czech Republic<sup>2</sup>  
[krpalek@vso-praha.eu](mailto:krpalek@vso-praha.eu)<sup>1</sup>; [katarina.krelova@gmail.com](mailto:katarina.krelova@gmail.com)<sup>2</sup>

**Abstract:** Quality in education is determined by the human factor, in particular the level of motivation of all involved and the degree of sophistication of management processes. Tertiary education in the Czech Republic has undergone a major systemic change in the approach to monitoring and evaluation of the quality of education and the associated accreditation procedures in 2016 after the adoption of the new Tertiary Education Law. Universities and colleges must establish an internal system of quality assurance and assessment of educational, creative and related activities. Thus quality management systems, which are a prerequisite for functional evaluation mechanisms, are getting more important. The authors deal with this topic in the framework of the scientific project of the Grant Agency of the Academic Alliance reg. number GA/2016/9 'Self-Evaluation Framework and Evaluation Culture as a Science-Based Foundation of Educational Communication in the Quality Management System in Terms of Professionally Oriented College' and they present basic assumptions, procedures and addressing the issue, seeking to build a modern authentic evaluation culture as the fundamental assumption for an effective and demonstrable assurance and quality management system in tertiary education. Concerning methods, the research is based on the findings of cognitive psychological theories of education (social constructivism) in combination with Access Technology Education (instructional design) and a reflection of contemporary competency models (competence-based learning and teaching) with emphasis on the elements of integration and educational communication (self-responsible learning). The result is the innovation of a self-evaluation framework and efficiency of evaluation processes in the tertiary environment, using tools based on 360° feedback, benchlearning and other modern methods.

**Keywords:** Human Resources, Evaluation, Quality Assurance, Management, University Education.

### Introduction

Human resources are the core of quality management systems, and this is true especially for those subjects where the processes are associated with the provision of services. Tertiary education is a typical example of where sustainability and success depend on creating and maintaining a good reputation, quality, originality and penetrability of study programmes, satisfaction of teachers, students and graduates, scientific and research potential, the level of interconnection of study and practice and other soft elements (Hrmo, Křištofiaková, 2015). Therefore, it is necessary to build an evaluation culture, identify the relevant processes and expectations of the involved ones, analyze the consistency and the results, reveal reserves and eliminate shortcomings, incorporate the desired changes and examine them in the PDCA cycle (Plan - Do - Check - Act) to achieve continuous improvement leading up to certification ENQA (European Association for Quality Assurance in Higher Education). Rated processes are based on three roles of universities: education, science and research (creative) and so called third role (third mission), consisting of communication with the social partners, graduates and their employers, businesses and institutions in general, the world of labour (Krpálek, Kadaňová, 2014, 78 - 79).

The implementation and maintenance of management system and internal evaluation of the quality of educational, research and related activities are required from universities or colleges by the current legislative conditions in the Czech Republic. This paper aims to spread knowledge and experience in solving inter-university scientific project of the Grant Agency Academic Alliance no. reg. GA/2016/9 'Self-Evaluation Framework and Evaluation Culture as a Science-Based Foundation of Educational Communication in the Quality Management System in Terms of Professionally Oriented College' in which the University College of Business in Prague (UCB) and the University of Economics in Prague participate in the research period of 2016 to 2017. The subject of research is with respect to the knowledge of conditions the UCB, what is the main researching institution of the project. Researchers intend to follow the above mentioned project in September 2017 by the Project of the European Social Fund no. reg. CZ.02.2.69/0.0/0.0/16\_015/0002368 "Optimizing of Human Resources Processes and

Quality Management System at the University College of Business in Prague" with the key activity in "Creating of Internal Quality Assurance Systems and the Implementation of External Evaluation for Quality Improvement", it means the application of results to full operational implementation of evaluation tools for ensuring quality, support of the preparatory processes for obtaining accreditation, operational setting of quality monitoring to continual improvement and external certification of a system recognized by a certification authority. The result will be a comprehensive quality management system of educational, creative and other activities related to college that will lead to achieving and maintaining high standards of quality acceptable by the National Accreditation Authority for universities or colleges. Such a model of Total Quality Management (TQM) could become an example of good practice for medium-sized colleges with professionally oriented degree programmes and contribute to building a culture of evaluation. The aim of the paper is to spread knowledge and experience in solving inter-university scientific project about human resources and optimization of evaluation processes as the basis of the Quality Management System in professionally oriented college.

## Methodology

Model University College of Business in Prague (UCB) has been more than ten years on the market, has trained more than 3,000 students who chose a unique, professionally oriented degree programmes (5 of bachelor's and two master's degrees), focused on tourism, air transport and human resources. Research questions: Which factors are crucial in terms of construction quality management model? When implementing the model can these factors be operationalized into the model of functional quality management system? What is the role of evaluation, shared vision and consensus of participants in education in this process? Methodologically the project is conceived as a mixed of research with a predominance of qualitative research. In the initial phase of the project, content analysis was conducted, the fond of available knowledge, experience in process and useful case studies was collected and analyzed. Empirical research was conducted using research tools: analysis of primary and secondary data, observation analysis (observation), interviews and in-depth structured interviews, process and SWOT analysis, experiment in natural conditions - modelling and piloting a model self-evaluation framework and evaluation tools 360-degree feedback with participants of educational processes, benchlearning.

## Literature review

The segment of private universities in the Czech Republic is highly competitive. The situation is further intensified by the adverse demographic trends, because cohorts of individuals entering tertiary education show a steady decline. Competitive pressure is multiplied by competitors and they build a competitive advantage based on the quality of the models of excellence European Foundation for Quality Management (EFQM) and Total Quality Management - TQM (Lakatoš, Aujeský, 2004) perceived and recognized by clients. Basic principles of TQM include customer orientation, process orientation, the principle of decisive leadership roles in quality management, the principle of developing the knowledge and involvement of every employee, the principle of teamwork and cooperation, the principle of permanent improvement and innovation (Krpálková-Krelová, 2016).

The introduction of quality management system should be a strategic decision of the school. An important aspect is to document interaction between educational and support processes (Lukšů, 2010). The introduction of quality management system leads to precise specification of powers and responsibilities to better organization of activities inside the school, forcing the examination and meeting of real needs of partners, to cost saving and in particular to the improvement of the educational process (Hutrya, 2008). Priorities of each school should be identified by expectations, needs, desires of students and social partners from the world of labour, especially potential employers, which requires a systematic feedback - survey of attitudes to learning process and schools from students, graduates and systematic market research - knowledge of expectations and needs of future employers (Vavrečka, Mezuláník, 2016). According to M. Tribus (1994) there is no need to use only external motivation (rewards, praise, awards), each employee should regularly evaluate their work mainly alone, because the quality can only be achieved by autoevaluation. In quality organizations leading officials trust employees at all levels so that they evaluate their work and this trust leads to quality (Bacík, 1998, 284). Therefore, self-evaluation in quality management plays a vital role (Chromý, 2006). The objectives of self-evaluation are to identify strengths, weaknesses, opportunities and risks, performance and critical areas, to view

opportunities to improve, to improve performance and the quality processes of schools, to 'report back' to customers, the founder, to provide evidence that "he or she listens" to the voice of customers and that respects their needs, wants, demands, plans their activities to improve the quality and uses reserves (Turek, Hrmo, 2006). An effective approach to the assessment seems to be the method of 360-degree employee evaluation, which evaluates various work site of employees through certain points or classification. Information concerning their performance is collected from a superior, subordinate, co-workers, but also by external and internal partners. Employees assess themselves (Armstrong, 2002, 433-435). The main reason for using this method of assessment was already described by W. W. Turnow in 1993 by these words: "360 degree activities are usually based on two main assumptions: awareness of any disagreement between how we see ourselves and how others see us, increases awareness (knowledge) of ourselves; increased awareness (knowledge) of ourselves is the key to maximise the performance in the role of the leading employee and the cornerstone of the development programmes in the area of people's management and leadership" (Armstrong, 2002, 434).

As an example of good practice we can cite a study that was conducted in two regions of Spain. The aim was to analyze the impact of the introduction of quality management system with two key components in each educational organization: Communication and External Relations. The analysis was carried out through 32-item questionnaire, which was considered to be reliable (Cronbach's alpha = 0.955). The authors carried out a detailed description of responses to gaps analysis for each item based on the individual categories of variables such as type of school, the number of years that the quality management system implemented, the position in the school (teacher and member of the management team) and the number of students in school. The results confirmed that the quality management systems had a significantly positive impact on communication and external relations at schools (Díaz, Mantilla, 2016). S. Taut and K. Rakoczyb (2016) dealt with the quality of the diagnostic information of the selected model evaluation system in Germany. The results showed that the structure of the empirical observation instruments did not correspond to the original normative model and did not provide the feedback on the five-factor model designed as commonly recommended in bibliography (way of class management, two aspects of the orientation of the student, cognitive activation and class assessment). Obviously models must be based on local conditions and need to be carefully piloted. Seven years earlier for example F. Lipowsky and his team carried out factor analysis in Germany (Lipowsky, Rakoczy, 2009) based on ten video evaluation of quality and found out that the quality assessment could be reduced to just three factors called *classroom management*, *supportive climate* and *cognitive activation*. And it worked. A significant shift in the process of quality improvement was demonstrated by implementation of the PDCA cycle at Midwestern University, USA in evaluating the relationship between faculty development and student assessment. The results showed that when students rated teacher as an excellent teacher, teacher was evaluating their skills in self-assessment at a higher level. Based on the results of the research it was recommended to prepare a training for teachers about the learning management system and emphasis was placed on the effective use of technology in teaching (Merillat, Scheibmeir, 2016). Receiving and evaluating feedback from students has become normal part of self-reflection of university teachers, allowing to adapt to teaching style preferences of students. In Sweden, the University of Gothenburg conducted interesting study with teachers of School of Business, Economics and Law in order to establish the principles of operation of the feedback student - teacher. The study found out that feedback "student is perceived positively by university teacher" has a great impact on the effectiveness of teaching and helps to improve the courses. Feedback is pushing to reduce teaching lectures and prefer more consultations, workshops and case studies. The great majority of teachers showed a high level of professional pride and integrity, and responded to impulses from students (Flodén, 2016).

## Results and discussion

In the Czech tertiary education the approaches to create quality management systems are differentiated. Traditional large public universities have an ambition to prepare for the institutional accreditation in 2019 using foreign Certification Authorities (CAs). Private colleges with professionally oriented study programmes are in a different situation, it is not always realistic for them to reach the horizon of 2019 with institutional accreditation and they rather focus on the accreditation of degree programmes. This situation is also due to the fact that the National Accreditation Authority for tertiary education is at the beginning of its activity, evaluation standards will be published, and the same applies to the definition of recognized CAs.

Management system of providing and internal quality assurance (Quality Management System) at the model school of UCB was conceived and constructed based on the D. L. Kirkpatrick (2006) model. Self-evaluation framework projections were based on 360-degree feedback. First, the situation analysis has been carried out and internal regulations and school authorities have been amended and supplemented.

The Council for internal evaluation was established as well as the Disciplinary Committee and the Career and Development Centre. Subsequently, an action plan of the implementation of quality management systems in relation to the business plan based on the mission and vision of previously adopted strategic document Rector Vision 2017+ has emerged.

The original approach of UCB is further graphically represented and analyzed, including evaluation of selected clinical impact in the phase of piloting and implementation of the model. Table 1 shows clearly the result of input SWOT analysis.

Table 3

**Analysis of the strengths, weaknesses, opportunities and threats (SWOT analysis)**

<p><b>STRENGTHS</b> (% relevance)</p> <p>Location at one place in the centre of Prague (30 %)</p> <p>Uniqueness and attractiveness of study programmes (25 %)</p> <p>Part of the educational holding Academic Holding</p> <p>Clear history, ethical school's credit (20 %)</p> <p>Information system UIS (10 %)</p> <p>Experienced, stabilized management (10 %)</p> <p>Competitive, relatively low tuition (5 %)</p>	<p><b>WEAKNESSES</b> (% relevance)</p> <p>Internal communication and processes (30 %)</p> <p>Gaining projects in fundamental research (20 %)</p> <p>Narrow portfolio of study programmes (20 %)</p> <p>Autoritative, little-client approach of some teachers to students (20 %)</p> <p>Penetrability of study programmes from the bachelor's to master's degree (10 %)</p>
<p><b>OPPORTUNITIES</b> (% relevance)</p> <p>The introduction of quality management system (20 %)</p> <p>Acquired status of research organization (20 %)</p> <p>Synergy of Academic holding (20 %)</p> <p>The motivation of academic staff for improving the quality of the teaching and involvement in research (15 %)</p> <p>Development of international relations and cooperation in education and research (15 %)</p> <p>Attracting foreign students (5 %)</p> <p>Study programmes in English (5 %)</p>	<p><b>THREATS</b> (% relevance)</p> <p>New legislative conditions for accreditation (30 %)</p> <p>Identification of academics with an innovative strategy of schools, the adoption of quality management system (30 %)</p> <p>Development of the demographic curve (30 %)</p> <p>Competitive pressure from a large number of other competitors on the education market (10 %)</p>

Source: internal research of UCB, interpretation of authors

Building of evaluation tools and evaluation culture at UCB came out of the major identified weakness: weak level of internal communication and processes. Because these aspects are one of the main attributes of quality management, the introduction of the system was one of the largest reserves of the school. Currently, these aspects are already under control and do not appear as weakness. The same can be applied to research activities in support of which two internal grant agencies were established at UCB: The Fund for Development of Science and The Research Centre. The product of synergy of Academic Holding, which belongs to UCB is Grant Agency of Academic Alliance, which supports fundamental and applied research. Calls for submitting of proposals take place twice a year, and thanks to them the number of submitted and solved scientific external projects has significantly been increased at UCB. Previously, it was possible to carry out fundamental research almost exclusively through the Grant Agency of the Czech Republic, where the tendered grant is extremely difficult and not very hopeful.

There has been positive progress in the field of creative activity, increased publishing activity and involvement in research projects, up by more than 3 % a year. After adopting of the Quality Management



System monitoring indicator for creative activity of a 5 % annual increase in output of creative activity has been included into the Business Plan. This optimism is based on a sophisticated incentive system for monitoring and valuating the results of research activity "Electronic Publishing" (EP), piloted in 2016, and subsequently since the academic year 2017/2018 it will start operation at UCB. The system includes traditional outcomes of research and publication activities, while integrating parametres of the third role of universities, memberships in scientific societies, think tanks, cooperation with the practice. Researcher has established the access to the EP and shall be supplementing it with data. The items have the score (importance) set beforehand, which is subsequently summarized for individuals and departments, but it remains available in analytical form and gives an instant overview of the performance and relevance of research activity of individual employees and departments. Scoring is based on the evaluation criteria of research organizations in the government Register of Information on Results (RIV) and the evaluation of the importance of activities for school development. To illustrate the variance of scores ranging from 60 points for impacted articles in scientific journals to around 1 point for a conference or seminar of local importance. At the end of the academic year, the data is checked, cleared, scoring results are converted into credits and counted in the variable part of salaries. Replaceability of criteria is designed so that the 'softer' scoring activity in areas C and D are only counted up to priority areas of A and B in summarizing the results. This creates a highly motivating environment for publishing reports and solutions of research projects relevant from the point of view of the evaluation of the research organization. The structure of criteria as a basis for the evaluation of research activities is as following.

#### Area A: Scientific research activities internationally

- The scientific monographs, chapters in monographs, studies in journals and collections in the characteristics of scientific monographs published in reputable foreign publishing houses
- scientific papers in international journals registered in the Web of Science with a positive impact factor, without IF or in Scopus, ERIH +, EBSCOhost, ProQuest
- Reviewed papers at international conferences, sent to indexation to the Web of Science or Scopus and scientific work in scientific collections which are not related to conferences
- University textbooks (or chapters in them) published in foreign publishing houses
- Scientific work in foreign reviewed scientific journals without IF / Scopus
- Citations in foreign publications on Web of Science / Scopus and other

#### Area B: Scientific research activities domestically (in the CR)

- Scientific monographs published in reputable domestic publishing houses, regular publishing houses or chapters in scientific monographs, studies in journals and collections with characteristics of scientific monographs published in domestic publishing houses and other scientific or professional monographs published in domestic publishing houses
- Scientific work in domestic journals registered in the Web of Science with a positive impact factor, without IF or in Scopus, ERIH +, EBSCOhost, ProQuest, the List of reviewed non-impact journals Council for Research, Development and Innovation (RVVI) and outside this framework
- Reviewed papers in domestic academic conferences, sent to indexation to the Web of Science or Scopus and without indexation, or even non-reviewed papers from seminars
- University textbooks (or chapters in them) published in domestic publishing houses
- Citations in domestic publications on Web of Science / Scopus or other indices
- Submitting / obtaining a scientific research grant in the basic or applied research as the main researcher / co-researcher

#### Area C: Professional and expert activity

- Organization of a scientific conference / training seminar
- Submitting / obtaining of development or professional project as a researcher / co-researcher
- Membership in the prestigious scientific organizations, foreign and domestic
- Membership in the programme committee of international or national scientific conferences
- Membership in the editorial board of a publishing house/ editorial board of reviewed scientific journal
- Membership in government advisory bodies, scientific boards of universities
- Membership in habilitation commissions and committees for appointment of professors
- Professional review, peer review and expert activity, requested lectures



**Area D: Professional activity - activities aimed at school development**

- Organization of professionally-oriented or otherwise student-oriented activities
- Organization of activities to give promotion to the school or department
- Organization of cooperation with external entities
- Preparation of documents for the accreditation of degree programmes (specialization)
- Preparation of study materials, scripts, handouts, study guides, and other tools for learning
- Preparation and implementation of a pilot project or activities fulfilling the aims of the school

As follows from the above-mentioned structure of the evaluation system of creative activity, the area D (primarily focused on the third role of universities) covers part of the evaluation of teaching, direct educational activity is designed specifically based on the above mentioned D. L. Kirkpatrick's (2006) four-level model of evaluation of educational programmes and 360-degree feedback.

This concept is clear from Table 2 and Figure 1.

Table 2

**Evaluation instruments of learning activities according to D. L. Kirkpatrick's four-level model**

<b>Level of Evaluation</b>	<b>Description of Functionality</b>	<b>Methods and Techniques of Measuring Instruments</b>
I. The immediate reaction to the educational action (action evaluation)	observation with a qualified analysis of the level of education participation (attendance) and the views of participants on teaching unit which have just taken place	observations checking attendance survey structured interviews
II. Assessment of learning outcomes in subjects (ongoing evaluation)	opinion of the students after completion of the course performance measurement – students' performance at exams Head of the Departments' assessment (evaluation of students' participation in education, including results of opinion polls)	students' opinion poll  exams (testing)  analysis of the course
III. Target behaviour and student achievement on output (subsequent evaluation)	success of students at the final state exams level of bachelor's /master's thesis penetrability of study programmes opinions on the study in the final phase of studies	exams (testing) analysis of aggregate results at final phase of studies survey structured interviews
IV. Results of graduates in relation to their future profession (ex post evaluation)	Impacts to the sphere of practice: the employment rate of graduates career and success of graduates evaluation of employers curriculum in compliance with practice	media analysis analysis of available statistics surveys structured interviews analysis of compliance

Source: research of authors by the D. L. Kirkpatrick's (2006) four-level model of evaluation

First level assessment is focused on immediate finding by immediate monitoring of educational actions, they are planned and organized by the heads of departments, their part is not just the observation of teaching by observers with subsequent analysis, but at the end of teaching the observers carry out surveys on quality of teaching in the form of distributing questionnaires for teachers and students, structured sufficiently finely based on the Lickert scale so that the range to be evaluated to what extent is education positively perceived from the perspective of teachers and students, the questionnaire items are built so that both views can intersect. Observer at the same time conducts a short structured interview with students, pointing to the causes of evaluation, the same with the teacher. It is rises the rate of

analyticity. Evaluating students' participation in education seems to be a formal criterion, but it has its value, lectures are optional, and students attend them according to how the teachers are able to attract them. So the presence of students at a lecture in connection with evaluation of questionnaires will complete the picture of the level of teaching.

At the assessment level II. except performance measurement (study results in subjects) there are students' opinion polls, in which students express their opinions on teachers and subjects at the end of the term. The opinion poll is anonymous and students fill it electronically into the university system UIS. It is an instrument for orientation, the information value is only in combination with other instruments. It is primarily intended for self-evaluation of teachers. Until 2015 students' opinion polls were filled up by 30 % of students on average at non-standardized conditions, therefore in 2016 there were revised in the content and didactically optimized, combined with the motivation of students, the rate of participation in polls almost doubled.

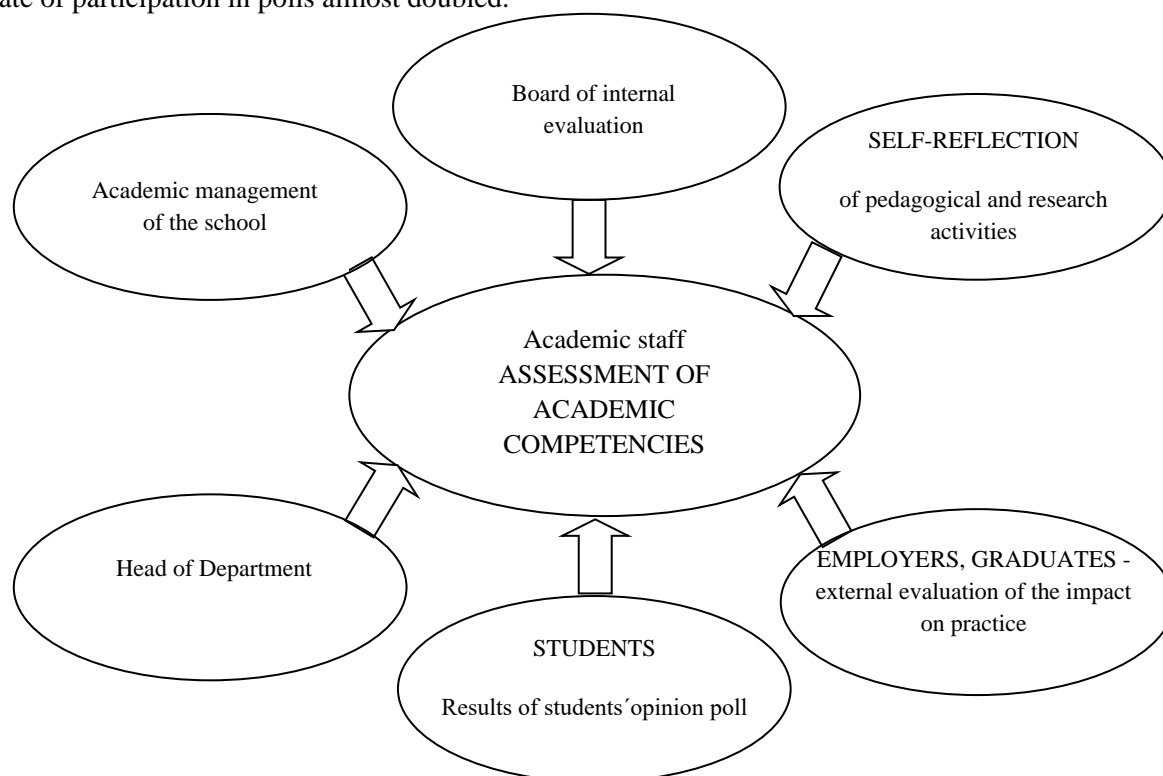


Figure 1: Factors influencing the formation of 360-degree evaluation model.

Source: Authors' research model

The questionnaire method is used then still at the end of study in the evaluation level III. for recaping opinions of students on the overall course of their education. Using of the university electronic study system UIS comprehensively combines and evaluates the performance characteristics (overall study results, results at the final state exams, topic selection of theses, assessment of advisor and reviewer). Teachers are evaluated not only by the number of hours of direct teaching, but also in relation to the qualitative characteristics. For example, the number of supervised theses is limited to a maximum of 10 per one teacher and at the evaluation the advisor's evaluation of the thesis as well as the reviewer's (including of the degree of conformity assessment) is followed, the result of the defense, the recognition of thesis at school or out of school and practical usability. The aim is to connect theses with real work experience and to get real experts in the field to participate in the evaluation process.

In the level of evaluation IV. the role of the Centre of Careers and further development, the contact with graduates, employers and decision-makers is established and developed to obtain data for such a metric system which depicts the employability of graduates, the speed of career progress and the compliance with the requirements of practice. In the future, this model will be complemented by two more levels: the evaluation of changes in the school's evaluation culture and connection with the evaluation of economic efficiency.

## Conclusions

Within the framework of the project GA/2016/9 'Self-Evaluation Framework and Evaluation Culture as a Science-Based Foundation of Educational Communication in the Quality Management System in Terms of Professionally Oriented College' innovative model of assurance and internal quality assessment came into existence. Evaluation module of research activity represented by a system of Electronic Publications has been successfully piloted and is fully functional and effective. Module of pedagogical activities based on 360-degree evaluation model is comprehensively designed, piloting is currently underway, and the results so far are promising. The key things of the teaching module are questionnaires, observations, and continuous and subsequent monitoring of study results with regard to expectations and experience of all participants of education and professional field. Selected evaluation tools have been proven and confirmed as relevant for creating of self-evaluation framework. The module fulfills its function like EP-system, only with not so much experience yet. At the same time with referring to discussions with other authors and implementers according to the results of Benchlearning it is possible to say that self-evaluation framework is widely recognized as the foundation of assurance and internal quality assessment before introducing certified comprehensive quality management system (Total Quality Management), as the evaluation culture and school climate make fundamental assumptions for synergy of participants in education and conditions for the success of the implementing strategy. Evaluation processes, and on their basis projected evaluation tools, are only the technical assumption for success; the identification of all participants with a new evaluation culture as a presumption for informal ethos and positive school climate will play a determinative role.

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## Bibliography

1. Armstrong M. (2002). *Řízení lidských zdrojů (Human Resource Management)*. Expert, Praha: Grada, p. 856. (in Czech)
2. Bacík F. (1998). *Současné tendence v řízení školství Rakouska a SRN (Current trends in management education in Austria and Germany)*. Pedagogika (Pedagogy). Vol. 48 (3), pp. 276 – 291. (in Czech)
3. Díaz M<sup>a</sup>. J. F., Mantilla J. M. R., Abad M. F. (2016). *Impact of Implementation of Quality Management Systems on Internal Communications and External Relations at Schools*. Total Quality Management and Business Excellence; Vol. 27(1-2), pp. 97 – 110.
4. Flodén J. (2016). *The Impact of Student Feedback on Teaching in Higher Education. Assessment and Evaluation in Higher Education*, pp. 1 – 15. [online] [21.05.2016]. Available at <http://www.tandfonline.com/doi/full/10.1080/02602938.2016.1224997>
5. Hrmo R., Křištofiaková L., Miština J. (2015). *Building a Quality System of Technical and Vocational Education in Slovakia Towards a European Labour Market*. In WEEF 2015. Proceedings of International conference on Interactive Collaborative Learning. Florence, Italy: IEEE, p. 7.
6. Hutýra M. (2008). *Kvalita ve vzdělávání a její zabezpečování v prostředí vysokých škol – II. (Quality in Education and Quality Assurance in the University Environment – II.) Perspektivy Kvality. (Prospects Quality)*. Ostrava: VŠB-TU [online] [21.05.2016]. Available at <http://www.csq.cz/res/data/000198.pdf> (in Czech)
7. Chromý J. (2016). *Motivační aspekty a jejich bariéry při studiu odborných škol. Příklad z oblasti gastronomie. (Motivating Aspects and their Barriers to Studying Vocational Schools. The Example from the Field of Gastronomy)*. Media4u Magazine. Vol. 13 (2), pp. 12 – 16. (in Czech)
8. Kirkpatrick D. L., Kirkpatrick J.D. (2006). *Evaluating Training Programs*. (3rd ed.). San Francisco: Berrett-Koehler Publishers, 373 p.
9. Krpálek P., Kadaňová E. (2014). *Efektivní styl práce vysokoškolského učitele (Effective Style of the Work of University Teachers)*. Monograph. Žatec: Ohře Media, pp. 78 – 79. (in Czech)

10. Krpálková-Krelová, K. (2016). Evaluácia a autoevaluácia v systéme manažerstva kvality na vysokej škole (Evaluation and Self-evaluation of the Quality Management System at the University). *Media4u Magazine*, Vol. 13 (3), pp. 19 – 23. (in Czech)
11. Lakatoš P., Aujeský M. (2004). *Manažment kvality (Quality Management)*. Slovak Trades Association, Bratislava, p. 24. [online] [01.06.2016]. Available at [http://ueapme.com/business-support II/Training Tools/CNA/Quality Management/SK-Quality Management.pdf](http://ueapme.com/business-support-II/TrainingTools/CNA/QualityManagement/SK-QualityManagement.pdf), pp. 5 – 6. (in Slovak)
12. Lipowsky F., Rakoczy K., Pauli C., Drollinger-Vetter B., Klieme E. (2015). Quality of Geometry Instruction and its Short-term Impact on Students' Understanding of Pythagorean Theorem. *Learning and Instruction*. Vol. 19 (6), pp. 527 – 537. [online] [01.11.2016]. Available at <http://www.sciencedirect.com/science/article/pii/S0959475208001023>
13. Lukšů A. (2010). Management kvality a standardů ve vzdělávání. (Quality and Standards in Education). *InFlow Information Journal*. [online] [12.05.2016]. Available at <http://www.inflow.cz/management-kvality-standardu-ve-vzdelavani> (in Czech)
14. Merillat L., Scheibmeir M. (2016). Developing a Quality Improvement Process to Optimize Faculty Success. *Journal of Asynchronous Learning Network*, Vol. 20 (3), pp. 159 – 172.
15. Taut S., Rakoczyb K. (2016). Observing Instructional Quality in the Context of School Evaluation. *Learning and Instruction*, Vol. 46, pp. 45 – 60. [online] [28.09.2016]. Available at <http://www.sciencedirect.com.ezproxy.lib.cas.cz/science/article/pii/S0959475216300706>
16. Tribus M. (1994). When the District Opts for Quality Management, What's a Superintendant Supposed to Do? Conference Proceedings of *Quality Assurance in Education & Training*, Vol. 1, pp 1 – 28.
17. Turek I., Hrmo R., Krelová K. (2006). O kvalite vzdelávania. (About the Quality of Education). *Academia*. Vol. 17(3), pp. 25 – 29.
18. Vavrečka V., Mezulánik J. (2016) Marketing Communications in Tourism - Trends and Reality. *Marketing of Innovations*, Vol. 2, pp. 80 – 93.

## Acquisition of Latvian as a Foreign Language in Latvia: Development and Trends

Inga Laizāne Mg. philol.

Liepājas Universitāte, Rīgas Stradiņa universitāte, Latvija

[inga.laizane7@inbox.lv](mailto:inga.laizane7@inbox.lv)

**Abstract:** Restoration of independence of Latvia in the 1990's allowed to open a new page in the history of acquisition of the Latvian language. Alongside the field of acquisition of the Latvian language as the mother tongue and the Latvian language as a second language there emerged a need to establish a new field of language didactics – acquisition of the Latvian language as a foreign language. Although every year the number of foreigners who come to Latvia not only for studies but also for professional and personal goals, has been increasing, there is still a lack of summarised researches made on this field and its development. The *purpose* of the article is to provide an overview of learning Latvian as a foreign language in Latvia, emphasising the development of this field nowadays.

As the main *method* of this research, contact interviews with teachers who have obtained rich experience in this field have been used in order to receive information on the various organisational and pedagogical issues related to this area. Full-time Bachelor's or Master's degree-seeking foreign students who are studying in some of the Latvian universities very often acquire the Latvian language for professional purposes. This means that frequently they are able to use the Latvian language in some professional field well known to them, but cannot communicate in simple everyday situations. This paradoxical situation is largely determined by the number of hours provided for learning the Latvian language in a particular university. Often foreigners have admitted that they lack the motivation to learn the Latvian language due to the lack of language environment. Instead of Latvian you can hear Russian in everyday situations, and Latvians often start speaking English in conversation with foreigners. Another important reason is that foreign students live in their closed community and do not meet any Latvian friends or acquaintances who could help them in the process of learning the Latvian language. These are very important findings which should be taken into considerations.

**Keywords:** Latvian language, foreign language, adult education.

### Introduction

After Latvia regained its independence in the 1990's, foreigners' interest in Latvia increased. The first foreign students came to our country to study in some of the full-time study programs. Thus, in some Latvian universities, it was necessary to organise practical Latvian language courses. But after the accession of Latvia to the European Union, the Latvian language became competitive in the European language family, and every year there is a noticeable increase not only in the number of exchange students but also in the number of foreign students who want to get higher education in Latvia, studying in one of the Latvian higher education institutions. From author's experience over time, foreigners went to Latvia in search of work, for which reason there was an increase in the demand for practical Latvian language learning in various informal courses, summer schools, and self-study courses. In this way, alongside the field of acquisition of the Latvian language as the mother tongue and the Latvian language as a second language there emerged a need to establish a new field of language didactics – acquisition of the Latvian language as a foreign language (Šalme, 2011). Although every year the number of foreigners who come to Latvia not only for studies, but also for professional and personal goals has been increasing, there is still a lack of summarised researches made on this field and its development.

Although learning Latvian as a foreign language in Latvia is now a very topical issue, there is still a lack of summarised theoretical studies made on acquisition of Latvian as a foreign language, organisation of teaching and learning processes in this field in Latvia, traditions of teaching and learning Latvian as a foreign language, modern practices, as well as the development of this field in future.

A composite reference material on the opportunities to learn the Latvian language as a foreign language in Latvia and other European higher education institutions was created in 2007 under the guidance of A. Salme (Šalme, 2008).

In 2011, the research paper by A. Salme Basic Issues of Acquisition of the Latvian Language as a Foreign Language (Šalme, 2011) was published, which is the first attempt to gather information on the field of acquisition of Latvian as a foreign language.

In recent years, more attention has been paid to the issues of learning Latvian as a foreign language, and these issues have been addressed in conference presentations and scientific publications.

Over the years, a good experience in practical Latvian language teaching has been accumulated while teaching Latvian as a foreign language not only in Latvia but also outside the country. Several educational materials have been issued, including textbooks designed for users of different languages, for example, Latvian language textbooks for Germans, Finns, Estonians, Lithuanians, Japanese. In recent years, the practice to create modern learning materials for different levels of language acquisition (the set of textbooks and workbooks Laipa) has developed also in Latvia (Laipa, 2014).

The purpose of the article is to provide an overview of learning Latvian as a foreign language in Latvia, paying attention to the organisational and pedagogical issues, as well as emphasising the development of this field nowadays and other issues which are frequently faced in the educational process.

### **Methodology**

This article is part of a broader study about development of the Latvian language as a foreign language both outside and within Latvia. In order to obtain as much information as possible and to be able to describe the development of this sector, use was made not only of the abovementioned studies, but also of personal interviews. Since people can learn Latvian as a foreign language not only in Latvia but also abroad, lecturers for the interview were selected from among those who teach Latvian language in higher education institutions both in Latvia and abroad.

In Latvia there are more than 10 institutions of higher education where foreign students are studying both in exchange programs and full-time study programs, therefore from each educational institution at least one teacher or one administrative clerk, who could tell about the organizational and pedagogical issues relating to the practical learning of the Latvian language, was selected.

*Methods:* The form of interview was chosen to be a structured interview. During the interview, respondents were asked questions of both organisational and pedagogical nature. Organizational questions were asked in order to discover the mother country of students; whether they are exchange students or full-time students; how the number of students has changed in recent years; since when the particular educational institution teaches Latvian language; what is the number of lessons that is being offered by the particular educational institution for obtaining Latvian language; what motivates the students to learn Latvian language. Questions of pedagogical nature were asked in order to obtain information regarding the teaching aids used in the language acquisition process; difficulties arising from the learning process of Latvian language; tasks, methods and approaches that are used in Latvian language lessons, as well as the role of grammar in learning Latvian language as foreign language.

*Participants:* During the course of the study, eight interviews with lecturers, who teach Latvian language as a foreign language in one of the higher education institutions in Latvia, were recorded, as well as e-mail correspondence with a number of administrative clerks, who work in one of the higher education institutions in Latvia, in which foreign students learn the Latvian language, was maintained. Both lecturers and administrative clerks are mostly women aged from 25 to 60 years. Teaching staff had both different degree and experience in teaching Latvian language as a foreign language. There are both highly experienced teaching staff, as well as brand new lecturers. Some of them have studied Latvian language as a foreign language not only in Latvia but also abroad.

Interviews were recorded in different places – in cafes, workplaces of the teaching staff, as well as in scientific events. Afterwards all of the interviews were transcribed, taking into account the rules of both orthography and punctuation, but transcription was made very close to the original.

### **Results and discussion**

For more than 20 years it has been possible to acquire the Latvian language as a foreign language in the following higher education institutions of Latvia: University of Latvia, Riga Stradiņš University, Riga Technical University, Liepaja University, Rezekne Higher Education Institution, Daugavpils University, Ventspils University College, Vidzeme University, Riga Teacher Training and Educational Management Academy, Latvian Academy of Culture, National Defence Academy of Latvia, Latvia University of Agriculture, Turība University, and BA School of Business and Finance.

Universities of Latvia provide study opportunities to both foreign students who have come on exchange and foreign students who are studying in foreign students' departments of Bachelor's or Master's programs in some of the Latvian universities. In a part of the universities, such as the University of Latvia, Riga Stradiņš University, and Riga Technical University, there are separate courses specially organised for Erasmus students and foreign students, while other universities, such as Liepāja University, Ventspils University College, and Turība University, provide Erasmus students and foreign students with the opportunity to learn together in the same course.

The earliest traditions of organisation of courses for acquisition of the Latvian language as a foreign language in Latvia belong to the University of Latvia, Riga Technical University and Riga Stradiņš University, which offered Latvian language courses already in the early 1990's, when the first foreign students from Lebanon, Syria, Sri Lanka, Turkey, Israel and other countries arrived in Latvia. Currently, foreign students both from various European countries and from distant and exotic countries, such as China and Brazil, are studying in higher education institutions of Latvia.

At the turn of the historically important 1990's, the Contrastive Linguistics Department of the Foreign Languages Faculty of the University of Latvia responded to Norwegian students' request to organise Latvian language courses in Latvia. In 1991, the University of Latvia established long-term cooperation with the US Professor Paulis Lazda, who brought to Latvia students of University of Wisconsin–Eau Claire so that they could complete Latvian language, ethnographic and cultural courses. Along with the cooperation with the University of Wisconsin, the Foreign Languages Faculty established good contacts with the University of Münster, where from 1988 to 2005 intensive Baltic language courses were organised (Žigūre, 2014, 38-39).

Although the University of Latvia has accumulated rich experience in teaching foreign students, most foreign students are currently studying at Riga Stradiņš University (E-klase, 2016), and most of them are full-time students of several study programs, which means that they will obtain the higher education in Latvia, unlike exchange students who spend in Latvia only a few months.

Section 56, Paragraph 3, Item 1 of the Law On Institutions of Higher Education stipulates that in cases where studies in an institution of higher education are implemented in any of the official EU languages (in Latvian institutions of higher education, it is usually English – I.L.), the mandatory scope of foreign students' study courses should include acquisition of the national language if the studies in Latvia are expected to last more than 6 months or exceed 20 credit points (Augstskolu likums, 1995).

This means that almost every higher education institution in Latvia to which foreign students arrive, should offer a practical Latvian language course. However, each university itself may determine the number of hours and the desired content of the course program. For this reason, a rather paradoxical situation emerged in several Latvian institutions of higher education, for example, in Riga Stradiņš University, the University of Latvia and the Latvian Academy of Culture, where foreign students have to attend a professional Latvian language course instead of a practical Latvian language course. Foreign students study the programs Medicine and Dentistry in Riga Stradiņš University and the University of Latvia, and they need Latvian language skills to be able to talk to patients in the clinic. Unfortunately, within the number of hours allocated it is impossible to acquire the Latvian language both at a practical and professional level, which often results in absurd situations. As the number of hours is limited, the courses are focused on the professional language. This is the reason why foreign students are very often able to communicate with patients in the clinic, that is, to use the Latvian language in a specific sphere well known to them, but have difficulties in using the Latvian language or are unable to use it at all when it comes to everyday situations, such as conversation in a market, store or restaurant, since within the hours allocated these topics have not been studied. Unless a student has learned the language through self-education, he is unable to use the language in situations not related to his profession. Taking into consideration the empirical experience, it is possible to say that a similar situation is at the Latvian Academy of Culture, where foreign students are familiar with the music-related terminology, but often are unable to provide basic background information about themselves.

During the negotiations with lecturers who teach the Latvian language as a foreign language in Latvia (A. Rubene, personal communication in Riga Stradiņš University, January 15, 2016; S. Ozoliņa, personal communication in Ventspils University College, May 15, 2016; L. Kļaviņa, personal communication in Turība University, May 19, 2016; I. Tipāns, personal communication in Riga

Technical University, October 13, 2016), as well as after consideration of the empirical experience, a number of issues has been revealed. One of the main issues is the students' motivation. Those students who have to undertake an internship in Latvia, for example, in clinics, are motivated to learn the Latvian language. However, students of Riga Technical University or Ventspils University do not have this motivation, because they know they will be able to speak in English on their places of internship, and so learning Latvian only depends on their personal interest. Often students also recognise that in Latvia it is not necessary to use the Latvian language since the people are able to communicate in English and Russian, and very often Latvians switch to the English language in negotiations with foreigners, thus excluding the opportunity to integrate and practise the Latvian language sufficiently.

In a way, the closed environment of students induces the reluctance to integrate. Often they live in a closed community and go to visit each other, so they cannot even practise the Latvian language. This issue is also marked by P. Štolls, who teaches the Latvian language in the Czech Republic, stressing that Czech exchange students come to Latvia to practise the Latvian language, but the language practice depends on themselves. Often Latvian language practice is replaced by English language practice since students live in their closed community (P. Štolls, personal communication in Czech Republic, April 24, 2015). A similar view is also expressed by teachers in Latvia (A. Rubene, personal communication in Riga Stradins University, January 15, 2016).

When undertaking an internship in Latvian hospitals, foreign students have to face another issue related to very poor Latvian language skills of Russian-speaking patients. At times, Russian-speaking patients are not even able to answer the questions concerning their medical background in Latvian. In this case, the student who has mastered the Latvian language at a sufficient level to be able to communicate in a hospital faces the fact that in reality the Latvian language skills are not always sufficient for communication in Latvia. This issue should be elaborated on a larger scale, providing answers on how to improve the situation in the country in the field of national language training so as to make sure that foreign students are not confused about which language is the national language in Latvia.

People learn the Latvian language in Latvia not only for study and research purposes but also for professional and personal use. They are mainly representatives of mixed families who want to learn the Latvian language or foreigners who work in international companies such as Statoil and Evolution Latvia, where the working language is English and the Latvian language is studied to be able to communicate a little with the Latvian colleagues as well as to use Latvian in various everyday situations. Thus, the Latvian language is also learned in informal courses offered in various language schools in Latvia, as well as through self-education.

## Conclusions

The valuable experience in teaching Latvian as a foreign language has been accumulated for more than 20 years. The number of higher education institutions where one can learn the Latvian language as a foreign language has also increased. Since the restoration of independence of Latvia, every year more and more foreigners arrive to our country, thus increasing the need for courses of the Latvian language as a foreign language and relevant learning materials, as well as for expanding non-formal education.

In recent years, several higher education institutions have been tending to learn the Latvian language for professional purposes. Unfortunately, not always a university can allocate a number of hours sufficient to achieve this goal, as a result of which foreign students often are able to use the language for business purposes but unable to use it in everyday situations.

Over time, foreigners' motivation to learn the Latvian language has also changed. Foreigners often make statements that in Latvia it is not necessary to use the Latvian language, which could be due to the fact that many minorities lack the national language skills, which in turn creates a false picture of the country in which the foreigner is living. These are issues that should require serious attention also at the national level.

Since the knowledge of languages largely depends on a language learner's motivation and a number of hours allocated to the learning process, it is necessary to determine the number of hours provided for acquisition of the Latvian language as a foreign language in individual higher education institutions. Also, our society should endeavour to make foreigners feel that the Latvian language must be known in



Latvia and help them to integrate into the society. It would also encourage the willingness of foreigners to learn the Latvian language.

### Bibliography

1. *Augstskolu likums (Law of Institutions of Higher Education)*. (1995). Rīga: LR Saeima. [online] [13.11.2016] Available at <http://likumi.lv/doc.php?id=37967> (in Latvian)
2. *E-klase (E-Class)*. (2016). Ārvalstu studentu piesaiste – stratēģisks mērķis. [online] [13.11.2016] Available at <https://www.e-klase.lv/lv/zina/zinas/aktualitates/arvalstu-studentu-piesaiste-strategisks-merkis/> (in Latvian)
3. *Laipa- mācību grāmata pieaugušajiem (Laipa- textbook for adults)*. (2014). Māci un mācies latviešu valodu. [online] [13.11.2016] Available at <http://maciunmacies.valoda.lv/maci/293-laipa-macibu-gramatu-pieaugusajiem>
4. Šalme A. (2008). *Latviešu valodas kā svešvalodas apguve Eiropas augstskolās (Acquisition of Latvian as a Foreign Language in Universities of Europe)*. Pētījums pēc Valsts valodas aģentūras pasūtījuma. Projekta vadītājs Arvils Šalme. Rīga: LVA. (in Latvian)
5. Šalme A. (2011). *Latviešu valodas kā svešvalodas apguves pamatjautājumi (Basic Issues of Latvian as a Foreign Language Acquisition)*. Rīga: LVA. (in Latvian)
6. Žīgure V. (2014). Ārvalstu studentu latviešu valodas mācīšanas pieredze. Zinātniski metodisks izdevums *Tagad (Right now)*: LVA, Vol. 1(8), pp. 38 – 43. (in Latvian)

## Comparative analysis of the perfect human in the writings of Plato and Gregory of Nyssa

Valērijs Makarevičs Dr. psych.  
Daugavpils University, Latvia  
[valerijs.makarevics@du.lv](mailto:valerijs.makarevics@du.lv)

**Abstract:** For centuries, philosophers have addressed the topic of the ideal human, solving it according to the requests of the time. On the example of the works of Plato and Gregory of Nyssa, we will consider how these views have changed over the millennia since the ancient times and ending with the era of the Byzantine Empire. For Plato the human's way to his ideal depends on the accomplishments and deeds of his ancestors. Life experience of the human himself can only adjust the result of life experiences of previous generations for the better or for the worse; the result of life experience influences the development of the individual representatives of the succeeding generations. Gregory of Nyssa says that the body and the soul are born at the same time. This means that the soul does not bear the imprint of the life experience of previous generations. According to Gregory of Nyssa, each person during his lifetime is able to get closer to the ideal. According to Plato, who lived in the times of polytheism, only the elite strata of society are capable of self-improvement. Gregory of Nyssa who lived in a monotheistic state believed that anyone can achieve the ideal. The content analysis of the authors' texts as well as of the texts of the researchers of Plato's and Gregory's of Nyssa creative work have been used in the research. It is noted that a person in Gregory's of Nyssa works possesses larger subjectivity than in Plato's works.

**Key words:** Gregory of Nyssa, the human ideal, monotheism, Plato, polytheism, soul, theology.

### Introduction

A problem of identity of personality is one of the basic issues for modern science. This problem has its history as it was formulated by ancient philosophers and developed by the Byzantine thinkers. Certainly, the concept of identity was not used at that time. The question was about the perfection of a person. It was considered that a person's activity is determined by the non-material essence - soul. A person's behaviour depends on the features of this substance. In the III century BC in the work "Phaedo" the great ancient Greek philosopher Plato offered the conception of the soul as the immortal substance. It is not connected with a concrete human and can be consistently lodged in different people. The substance of the soul, on the one hand, determines the actions of a human, and, on the other hand, a human himself can improve or worsen the quality of substance by his activity (Платон, 1993). Six centuries later, "Cristian Phaedo" appears in Byzantium - the work of theologian and philosopher Gregory of Nyssa "About the Soul and Resurrection". He gives the proofs of the non-material essence of the soul and its immortality in this work. Comparing two works, a researcher from Czech Republic L. Karfikova notes (Карфи́кова, 2012, 184): "The basic nerve of Plato's argumentation in *Phaedo* is the access of the soul to the world of ideas which is opened and developed by Logos. Logos imparts immortality to the soul... A necessary intermediate step here is the proof of the existence of ideas. Gregory..., in his turn, by way of such an intermediate step tries to prove the existence of the spiritual Creator of the material world. From here the transition to the parallel thesis follows. Although a human is "some small world, containing the same elements that the Universe is filled with", the mysterious action of the non-material soul is revealed in his body to which the eternity belongs.

The soul, according to the views of Gregory of Nyssa (Нисский, 1995), does not have the past beyond the human life. The soul is born together with a human and from the moment of birth it acquires immortality. The development of the soul takes place simultaneously with the development of a human. A human, and it is repeatedly underlined by the thinker in his works, is responsible for the development of the soul. He compares the work with the soul to the art of sculptor: chopping off the superfluous, he gradually approaches the perfection. This work requires the tension of all forces of a human, and it must not be interrupted even for a moment (Нисский, 1865). A way to perfection, striving for God is a necessary condition of liberation of the world from the evil.

Gregory of Nyssa is a theologian. But his views were formed under Plato's influence, as well as under the influence of neoplatonists and some other philosophers (Rist, 2000; Ионов, 1903). The Russian

researcher S. Averincev notes that the people of that epoch wished to think philosophically. Thus they aimed to think in the river-bed of ideas of Plato and his followers (Аверинцев, 1984). In his works Gregory of Nyssa often goes across the borders of theology and comes forward as a philosopher (Мартынов, 1886). The researcher R. Shchipina considers that his works are performed in the genre of "spiritual anthropology" (Щипина, 2013). Answering the question, who to a greater degree Nissky is, Z. Nesmelov marks that the merit of Gregory of Nyssa consists in the fact that he succeeded in making Christian divinity scientifically-philosophical, and the ancient philosophical science - Christian (Несмелов, 1887).

***The aim of research:*** carry out a comparative analysis of the perfect human in the writings of Plato and Gregory of Nyssa.

### **Methodology**

The content analysis of the authors' texts as well as of the texts of the researchers of Plato's and Gregory's of Nyssa creative work have been used in the research. The comparative analysis of the texts allowed to answer the question which changes in the views upon a person had taken place within the period of 700 hundred years separating Plato's life and creative work from the life and creative work of Gregory of Nyssa.

### **Results and discussion:**

#### ***Ideal personality according to Plato***

Understanding the space and human justice lies in the basis of Plato's idea of an ideal personality. These ideas were set forth by Anaximander and were developed by Heraclitus (Russel, 1964). The concept of justice includes in itself understanding and clear distinction between the good and the evil, the acceptance and support of the good and non-acceptance of the evil.

Plato considers that not all people understand the distinction between the good and the evil. This understanding can be innate. We can try to teach a human to distinguish the good and the evil. That requires special organization of education and upbringing. Plato names an innate capacity for distinction of the good and the evil kalokagathia. Not many people possess kalokagathia. They are elected by the Gods. They are special people, daimons. They are able to hear their inner voice, the Voice of Gods. The good is manifested in the human following the principle of the blessing. At that, the person can not fully realize the principle of the blessing during his/her earthly existence as the idea and its concrete realization are different essences. „The blessing is not existence. It is beyond the existence exceeding it in dignity and power” (Платон, 1998, 317). The good is first of all realized in the ability to be just and to become just.

The stability of the state depends on how well its rulers can follow the principle of the blessing. Teaching to follow the principle of the blessing, according to Plato, should take into consideration the peculiarities of the human soul structure.

There are three beginnings in a person's soul: reasonable, unreasonable and the longing ones.

The upbringing and education are connected with the development of the reasonable part of the soul and with different limitations of manifestations of its longing part. The development of the reasonable part is based on sophrosyne – the ability for the cognition of oneself and other people, for evaluating your actions and social phenomena according to what is good and what is evil. Sophrosyne is also manifested as decency and tranquility of the soul and the body, modesty of the soul and doing „one's own deeds” (Платон, 1986).

In the work „The State” Plato writes about four kinds of the blessing (divine virtue): wisdom, courage, prudence and justice. In „Laws” he writes about different kinds of the blessing: health, beauty, corporal power and wealth (Платон, 1998).

In the first case, the author seems to concentrate his attention on a person's spiritual perfection while in the second case he focuses on the bodily perfection. The soul and the body are inseparably connected. This connection in Plato's works constitutes the basis of the conception of an ideal person's education.

This conception includes two most important elements: gymnastics (harmonization of the body) and moysicos arts (harmonization of the soul).

An important place in the conception of an ideal personality by Plato belongs to time, that can be named mythological. It goes away to the endless past, as people, possessing kalokagathia and called daimons, trace their ancestries back to higher Gods. The tsars of Persia originate from Zeus. Lacedaemon tsars are the descendants of Zeus and Alcmene (Платон, 1986, 538). On the other hand, the identity is related to the endless future, as the soul of human is immortal. Therefore, the spiritual health of subsequent generations depends on his/her earthly acts. Thus, Plato introduces eugenic substantiation into the understanding of identity. This substantiation in its obvious or hidden way is presented in two Plato's conceptions of a person's finding of his/her personality identity (Makarevičs, 2012).

### ***Gregory of Nyssa about the development of personality***

The starting point of reasoning of Gregory of Nyssa about a human is a biblical idea that a man was created according to the image and similarity with the Creator. Thus he divides image and similarity, as image of deity is not created, but similarity is produced by creation (Нисский, 1995). Similarity to the image implies the presence of the divine beginning in a human that shows up as innate ability to understand and accomplish virtuous deeds and be wise. Everybody has the divine beginning, but far from everybody can use them. For this a person needs to activate the mind. This is the first step of a human on the way to the realization of Divine intention... An obstacle to this step is the duality of a human, that simultaneously has the soul, containing in itself a spirit (godlikeness, mind) and the body (passions) (Нисский, 1995). But the spirit can operate only through the human's body that is material, and consequently is subject to the influence of the evil. The way of a human's development is related to the liberation of himself and the world from the evil. For this, a human needs to realize the higher aim which is striving for God. The faith and readiness are needed for achieving the perfection. The main condition for this is the unity of the way of thinking, words and actions (with the supremacy of the way of thinking) (Нисский, 2007).

The researcher Z. Nesmelov (Несмелов, 1887), analysing the work of Gregory of Nyssa, marks that all perfections mentioned in the works of the theologian and philosopher, can be divided into two groups:

- mind and wisdom (image);
- all other perfections, including beauty, love and virtue (similarity).

L. Karfikova (Карфикова, 2012) notes that the theme of the way as an infinite approach to God is the leitmotif of the works of Gregory of Nyssa. Comprehension of perfections is part of this way.

The substance, opening the way to God, is a human's soul. One of the researchers of the work of Gregory of Nyssa, Z. Nesmelov, notes that the essence of all reasoning of Gregory of Nyssa about the soul can be formulated by four theses (Несмелов, 1887):

- the soul of human is reasonable;
- being reasonable, the soul is opposite to the body;
- being opposed to the body, the soul can unite with it only through semimaterial sensible force;
- once united, it develops the activity in connection and in parallel to the development of the activity of the body.

The researchers mark that the works of Gregory of Nyssa have non-obvious references to Plato and his conception of three-part structure of the soul (Десницкий, 2003). But, unlike Plato, who believed that the soul can dwell in different bodies innumerable number of times, Gregory of Nyssa believed that each person has their own soul. While Plato believed that the errors committed in one life can be corrected in the other, then, according to Gregory of Nyssa, the errors made in the time of life of the body can not be corrected. Gregory of Nyssa rejects the idea of predetermination of human life, because the person is able to choose his/her own development alternatives. (Нисский, 2000).

The soul of human, according to Gregory of Nyssa, as well as according to Plato - is immortal. But immortality of the soul for Gregory of Nyssa differs from the conception of immortality of Plato. Metropolitan Macarius, analysing eschatology creations of Gregory of Nyssa, says that the sinful soul can die. Only this death is moral, but not physical (Макарий, 2009). The souls of the people dead in body constitute the Pleroma, or the world soul, having transpersonal character. Pleroma, in contrast to the infinite God - is finite. The finiteness of the Pleroma is determined by a finite number of people who

have lived and will live until the second coming of Christ when the souls will be able to re-connect with their bodies.

A look at the history of Gregory of Nyssa is interesting. As L. Karfikova notes (Карфи́кова, 2012, 94): "Gregory perceives the human history as a kind of pause in the rhythm of cymbals (bronze plate), when the two cymbals went in different directions, to triumph in the final meeting again". Central to this counter cymbals movement is that "all human parapsis (process) must be filled with the search for God, and the search itself is already the acquisition, and there is no other finding, except for the constant search" (Карфи́кова, 2012, 113).

### A comparative analysis of the concepts of Plato and Gregory of Nyssa

To compare the conceptions, we will use Table 1. Two conceptions presented in Table 1 are brought together by the faith in a person's reasonableness and wisdom and his capacity for positive changes. Only, according to Plato, positive changes take place in the process of life of many generations. Each generation is capable of acquiring a positive behavioural capital, which being accumulated in the soul, ultimately leads to the appearance of a perfect human. In the opinion of Gregory of Nyssa, a human can fulfil oneself in the process of the life. For this it is necessary to work continuously with the soul.

Table 1.

**Comparison of conceptions of the soul and development of human by Plato and Gregory of Nyssa**

No.	Parameter	Plato	Gregory of Nyssa
1.	Socio - historical conditions of conception creation	Paganism (Polytheism)	Christianity (Monotheism)
2.	Functions of the soul	Determines the activity of a human, serves as the basis for his perfection	Determines the activity of a human, serves as the basis for his perfection
3.	Temporal descriptions of the soul	In the moment of appearance in the body of human the soul already has the experience of past lives	The soul appears simultaneously with a body and does not have the experience of past lives
4.	"Starting" terms of development	Different for all people. Depend on past experience of the soul	Identical for all people
5.	Innate features of aspiring to perfection	Sophrosyne is a capacity for cognition of oneself and other people, of the evaluation of the acts and public phenomena on the basis of what is good and what is bad.	Ability to understand and accomplish virtuous deeds and be wise
6.	The dependence of the content of the soul on human actions	Direct	Direct
7.	Human's work with the own soul for perfection	Discrete	Continuous
8.	Connection of human and society	The stability of the state depends on whether its rulers are able to follow the principle of blessing	Aspiring to perfection, to God assists in freeing the world from the evil
9.	Development of personality and development of individuality	Personal progress negates individuality. In the eventual point of development individuality disappears	Personal progress negates individuality. In the eventual point of development individuality disappears

Thus, it is necessary to take into account a very important circumstance. Two beginnings make and support the essence of the world: masculine and feminine. The carriers of the masculine beginning are men, but the carriers of the feminine beginning are women. The virtues underlying the personal

development are associated with these two principles. In the work "About life of Moses Legislator" Gregory of Nyssa, using the allegoric form of expressing his ideas, marks: when the law is directed against the masculine beginning, Moses is born (Нисский, 1861). Failing to observe the balance between these two beginnings the world begins to slide to disaster, and it can be saved only by the newly-born hero.

## Conclusions

The authors of conceptions believe in possibilities of perfection of man and society.

Plato considers that the process of perfection of man takes place slowly, during the lifetime of many generations. In the opinion of Gregory of Nyssa, perfection can be achieved within the framework of a person's individual life. For this it is necessary to work continuously with the own soul and seek to comprehend God.

According to Plato, a perfect human provides stability of the state. According to Gregory of Nyssa, a perfect human provides a steady positive development of all humanity.

The conception of a perfect human by Gregory of Nyssa is a new historical look at the development of a personality. A human acquires subjectivity, that is, the ability to influence their own destiny. However, this choice is carried out in the framework of the good and the evil alternatives. This individual choice of the development path is connected with the ways of the world development. A human in his works is not just a part of the universe. He becomes the creator of the universe, the bearer of which is his soul.

## Bibliography

1. Makarevičs V. (2012). The Problem of Personality and Professional Identity in Plato's Works. In Proceedings of the International Scientific Conference *New Dimensions in the Development of Society*, Vol. 7. Jelgava: Latvia University of Agriculture, pp. 460 – 467.
2. Rist J. (2000). On the Platonisms of Gregory of Nyssa. In Essays on the Platonic Tradition: Joint Committee for Mediterranean & Near Eastern Studies, *Hermathena*, Vol. 169. Dublin: Trinity College Dublin, pp.129 – 151.
3. Russel B. (1964). *Hystory of Western Philosophy and its Connection with Political and Social Circumstances from the Earliest Times to the Present Day*. London: George Allen &Unwin Ltd, Ruskin House Museum Street.
4. Аверинцев С.С. (1984). Культура Византии. IV – первая половина VI века. (The Culture of Byzantium. IVth century – Ist half of the VIth century). *Эволюция философской мысли*. Москва: Наука, с. 42 – 77. (in Russian)
5. Десницкий А. (2003). Экзегеза Григория Нисского («О жизни Моисея»): заметки на полях (Exegesis of Gregory of Nyssa („About Moses' life”): notes on the margin). *Альфа и Омега*, Том 2 (36), с.78 – 90. (in Russian)
6. Карфикова Л. (2012). *Святитель Григорий Нисский. Бесконечность Бога и бесконечный путь к нему человека (The Prelate Gregory of Nyssa. The Infinity of God and a Person's Endless Way to Him)*. Киев: Дух і ЛІТЕРА. (in Russian)
7. Макарий (Оксиюк), митр. (2009). *Эсхатология св. Григория Нисского. Историко-догматическое исследование (Eschatology of Gregory of Nyssa. A Historic Dogmatic Research)*. Магистерская диссертация (Master Thesis). Санкт-Петербург: Аксион эстин. (in Russian)
8. Мартынов А. В. (1886). *Учение св. Григория еп. Нисского о природе человека (Опыт исследования в области христианской философии IV века) (The Doctrine Of Bishop Gregory of Nyssa on the Nature of Person (The Experience of Research in the Field of Christian Philosophy of the IVth century))*. Москва: Типография М.Г. Волчанинова. (in Russian)
9. Несмелов З. (1887). *Догматическая система Григория Нисского (The Dogmatic System of Gregory of Nyssa)*. Казань: Типография Императорского университета. (in Russian)
10. Нисский Г. (2007) К Олимпию о совершенстве (To Olympius about Perfection). *Аналитические сочинения и письма*. Москва: Издательский Совет Русской Православной Церкви, с. 213 – 238. (in Russian).
11. Нисский Г. (1995). *Об устройении человека (About the Essence of Person)*. Санкт – Петербург: Аксиома. (in Russian)

12. Нисский Г. (1861). О жизни Моисея Законодателя (About the Life of Moses the Lawmaker). *Творения святого Григория Нисского*. Часть II. Москва: Типография В. Готье, с. 223 – 379. (in Russian)
13. Нисский Г. (1865). О цели жизни по Боге и об истинном подвижничестве (About the Aim of Life according to God and about Real Self-Sacrifice). *Творения святого Григория Нисского*. Часть седьмая. Москва: Типография В. Готье, с. 263 – 282. (in Russian)
14. Нисский Г. (2000). Против учения о судьбе (Against the Teaching about Destiny). *Антология. Восточные Отцы и учителя Церкви. IV века*. Том II. Москва: Издательство МФТИ, с. 328 – 344. (in Russian)
15. Платон. (1986). *Диалоги (Dialogues)*. [Составитель, редактор и автор вступительной статьи А.Ф.Лосев]. Москва: Мысль. (in Russian)
16. Платон. (1998). *Государство. Законы. Политик (State. Laws. Politician)*. Москва. Мысль. (in Russian)
17. Платон. (1993). Федон (Phaedo). *Платон. Собрание сочинений*. В 4 т. Т.2. Москва: Мысль, с. 7 – 80. (in Russian).
18. Попов И.В. (1903). Григорий Нисский (Gregory of Nyssa). *Православная богословская энциклопедия*. Том 4. СПб: Приложение к духовному журналу «Странник», с. 633 – 643 (in Russian).
19. Щипина Р.В. (2013). *Григорий Нисский. Создание канона (Gregory of Nyssa. Creation of Canon)*. Санкт – Петербург: СПбКО. (in Russian).

## Simulation Modelling for School Development in Ādaži Municipality

Evija Mirke<sup>1</sup> Mg. sc. comp; Sarma Cakula<sup>2</sup> Dr. paed.

Rīga Technical University, Latvia<sup>1</sup>; Vidzeme University of Applied Sciences, Latvia<sup>2</sup>  
[evija.mirke@edu.rtu.lv](mailto:evija.mirke@edu.rtu.lv)<sup>1</sup>; [sarma.cakula@va.lv](mailto:sarma.cakula@va.lv)<sup>2</sup>

**Abstract:** As a result of economic development in the past 20 years a geographical mobility and new settlement patterns in Latvia have occurred – wealthier people look for living space outside the big cities – in suburban areas and in closer rural territories. Houses and roads are built; more children are born. It has led to fundamental changes in society structure and lifestyle as well as caused growing demand for higher quality of education in the suburban rural territories. In Latvia, there are no models for evaluating the impact of school or municipality decisions or activities on the number of pupils in schools. To address the problem demographic and geographical migration processes in Riga region have been studied as well as theoretical aspects of decision making and the factors affecting parents' decisions before selecting the school. Methods of research: analysis and evaluation of scientific literature, data collection and descriptive analysis, simulation. The result of the research is the development of a theoretical and simulation model for analysing different the impact of different factors on the number of pupils in schools. The simulation model built during the research can be used as a supporting tool for decision-making and school planning in any municipality.

**Keywords:** simulation modeling, school planning, discrete choice model, school education.

### Introduction

During the industrialization cities were the main places of attraction, and people from rural territories and smaller cities moved to the big cities. In the beginning of 21<sup>st</sup> century Latvia experienced economic development that led to another tendency in people's settlement patterns – wealthier people looked for a living space outside the capital Riga – in suburban areas and in closer rural territories. This process is called peri-urbanism (Kruzmetra, 2011).

Located just 25km from the Riga city centre, Ādaži region is strongly influenced by Riga, the number of inhabitants constantly increasing and thus leading to fundamental changes in society structure, lifestyles and causing more demand for education and other municipality services.

Ādaži Secondary school is a public school. The number of pupils in the school has been steadily growing for the last 10 years – in the school year 2003/2004 there were 993 pupils in the school, while in 2015/2016 the number of pupils reached 1250. Amount of births has increased – 87 new-born babies registered in 2000 and 154 babies in 2014.

Daily commuting Ādaži – Riga – Ādaži and vice versa for work/studies has also become more prevalent. A research conducted in Latvia in 2012 revealed 100 % of Ādaži population regularly commute to other regions or cities to obtain such services as education, healthcare, shopping, entertainment, recreation (Kruzmetra, 2011).

Since 1999 parents can choose any school for their child even if it is located in other administrative territory than the one where the child's place of residence is officially registered (Izglītības likums, 1998). When the geographical principle is not applied, parents and students are given full responsibility for the selection of the best school (Thelin, Niedomysl, 2015).

Previous study on this topic has investigated if parents would send their children to more distant educational establishments to offer them certain quality education or are there any other factors influencing their decisions (Burgess, Greaves, 2015). Some researchers claim that school reputation and exam/academic results are the main factors for decision (Bosetti, 2004).

There are several theories explaining decision making data. The “rational choice theory” was based on an assumption that human activity is based on rationality and that an individual makes decisions after comparing the possible gains and losses (Scott, 2000; Olssen, Peters, 2005). The “*Economic Man*” theory supported the idea that people take decisions based on the future economic results (Kahneman, Tversky, 1979; Eriksson, 2011). Other authors oppose this theory arguing that “*Economic Man has one fatal flaw: he does not exist*” (Lambert, 2006).



Following the economic rationality theory, children should go to the best schools corresponding to their abilities regardless of how far the school is located, what are the school premises and teachers' qualifications. In reality it does not happen (Chubb, Moe, 1990). Prospect theory states the most critical factors for decision making are the location of reference point and the way the individual sees the problem (Kahneman, Tversky, 1979).

Simulation (also called imitation) modeling is an approach when conducting an experiment with a model of real or non-existent system. In social sciences simulation modeling has been used since 1950s, it became more popular towards the end of 20<sup>th</sup> century.

The main purposes of simulation use are: prediction, performance, training, entertainment, education, proof, and discovery (Axelrod, 2005). K.E. Train suggests that choice models are mostly discrete and simulation gives opportunity for the researcher to approximate the choice probabilities. In "probabilistic discrete choice models" the number of alternatives is limited and the ranking and order of choices may matter in decision making process (Train, 2009).

In Latvia, some simulation models have been developed within universities, e.g., modeling foreign applicant flow in University in order to help higher education institutions attract more students (Nilanders, Cakula, 2014), however, mathematical modeling is used more.

The **problem** investigated in this study is that Ādaži municipality (one of 26 municipalities in Riga planning region) does not have a school development planning solution that would imply all the demographic/ migration data and the school selection factors.

The **goal** of the paper is to develop a theoretical and simulation model of impact factors on parents' school selection decisions and number of pupils in Ādaži Secondary School.

## Methodology

To develop the simulation model author selected ISEE Systems *STELLA Modeling and Simulation Software version 9* with built-in functionality that helps to analyse the model and dynamics of a system by identifying the key variables (STELLA Professional, 2017).

The following data sources were used:

- 1) Statistical data from Central Statistical Bureau of Latvia (population data) (Population – Key..., 2015);
- 2) Statistical data from Ādaži municipality and Ādaži Secondary school (Ādažu novada..., 2016);
- 3) Ādaži municipality and neighbouring Carnikava municipality inhabitants' unpublished survey data in a research ordered by Ādaži municipality "par vienotas izglītības sistēmas attīstības iespējām Ādažu un Carnikavas novados" (Research "about joint education system possibility in Ādaži and Carnikava municipalities");
- 4) Partly structured expert interviews for validation of the theoretical and simulation model.

Before developing the simulation model a BPMN Process diagram was drawn. The diagram has been validated with Ādaži Secondary school principal and Ādaži municipality education expert. It is displayed in Figure 1.

After studying the theoretical sources and gathering the data collected from Ādaži and Carnikava municipalities' inhabitants' survey, 12 criteria were developed for implementation in the theoretical model of Ādaži Secondary School simulation model as 12 independent variables. The survey was conducted in May-June, 2015 by specialists hired by municipality. 477 respondents were questioned in total. These people were Ādaži and neighbouring Carnikava inhabitants with children <18 years of age. The collected survey results were processed in SPSS software to test the normality of data and to create frequency distribution tables for using the data in the simulation model.

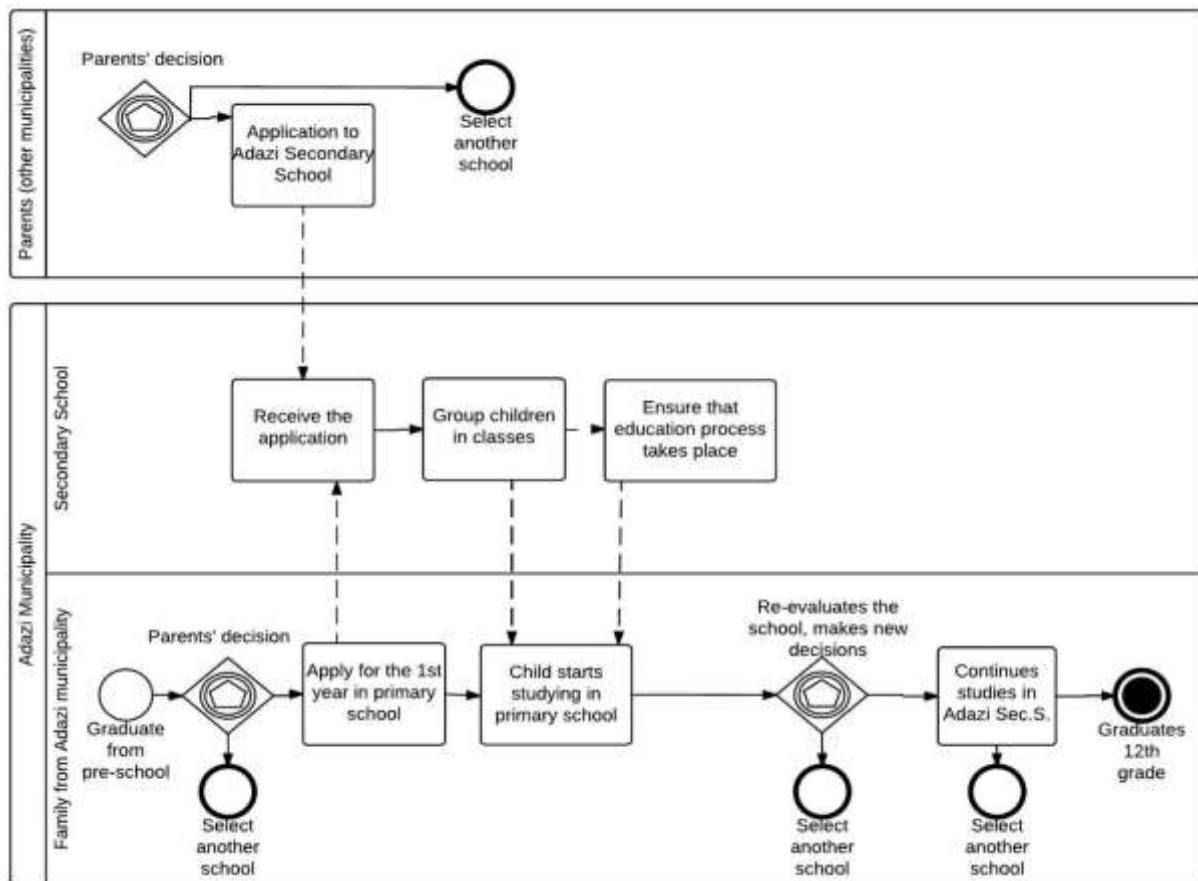


Figure 1. School selection process in Ādazi municipality.

Criteria are not absolute, and survey results show the relative importance of the weight of each factor. See (Table 4) for more detail and experts' commentary.

Table 4

#### School selection impact factors

Factor	Designation in the model	Experts' comment of importance for parents/pupils
F1	Music&Arts school nearby	For some parents it is important to develop their child's creativity and musicality from early childhood
F2	Various extra curricular activities	Similar as F1 but inhouse – school has to offer additional activities except the standard school programme
F3	Safety at school	Children shall be safe and feel safe at school
F4	Getting to school and transport	It has to be easy/ fast/ comfortable/ convenient to get to school by car or school bus
F5	Academic achievements	Parents are interested in current pupils' academic achievements and investigate existing pupils' grades and exam results
F6	Good infrastructure	Infrastructure shall be well planned and child-friendly (library, canteen, entrance, classrooms, wheelchair access)
F7	Distance to school	Parents have their subjective opinion about the distance how far they allow their children to travel to school
F8	Qualified teachers	A subjective factor – parents want the teachers to be highly qualified and professional, their experience is highly evaluated, parents ask for references

Factor	Designation in the model	Experts' comment of importance for parents/pupils
F9	School curriculum	When children grow older parents search for schools that develop their talents as languages, music, arts, mathematics.
F10	Qualitative equipment	School shall use modern equipment to enhance learning; these can be smartboards, laboratory equipment, computers, tablets.
F11	Location	Subjective factor of youngsters choice. Schools in the center are with higher image, schools in suburbs are not popular.
F12	Friends	For young people friends' influence is very serious – one might choose another school because of their friend.

The model was run for several times with real data on factors' impact, the results validated with education experts, and after that a new table for data input was created in *STELLA* interface see (Figure 2) to manually add new data simulating a situation of new yearly survey results received.

ENTER_FACTOR_DATA		
F1 Music&Arts school nearby	1	
F2 Various extra curricular activities	0.5	
F3 Safety at school	0.5	
F4 Getting to school or transport	0.8	
F5 Academic achievements	0.5	
F6 Good infrastructure	0.6	
F7 Distance to school	1	
F8 Qualified teachers	0.6	
F9 School Curriculum	0.1	
F10 Qualitative equipment	0.5	
F11 Location	1	
F12 Friends	1	

Figure 2. Table for manual survey data input (*STELLA* screenshot).

Testing the model with manual data offers the researcher opportunity to manipulate with the impact of different factors and see the results in number of pupils in primary/secondary school. School management or municipality specialists can see the possible future result of their actions, and that can help in improving the existing school services or introducing new ones.

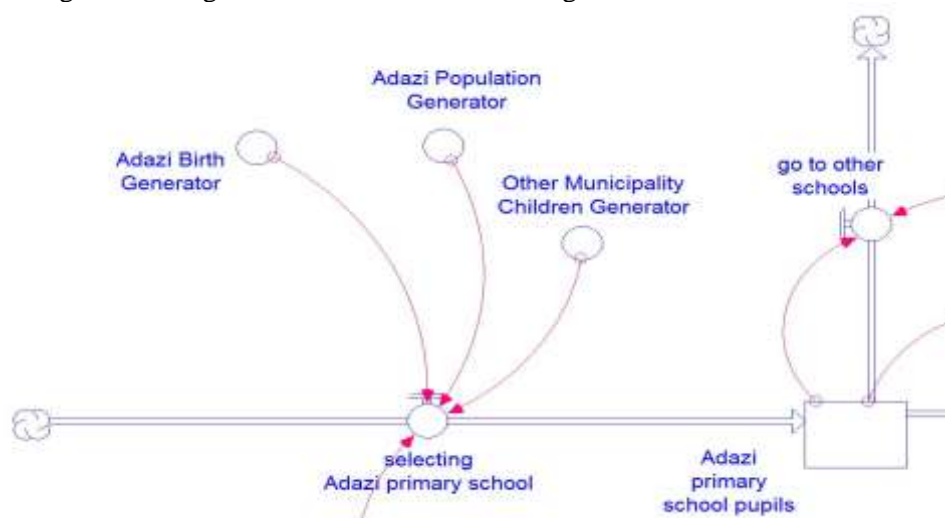


Figure 3. Flows and variables influencing number of pupils in the school (*STELLA* screenshot).

There are three data generators in the model – “Ādaži Birth Generator”, “Ādaži Population Generator” and “Other Municipality Children Generator”. These generators create data based on historical data statistically processed in SPSS software and influence the flow “selecting Ādaži primary school”, and it is represented in the next figure (Figure 3).

As separate analysis of Ādaži and Carnikava municipality parents’ answers before selecting the primary school was not the goal of the research, one decision was introduced in the model designated with “Parents’ decision PP”. After validation of the model with experts the second decision point was combined of 2 – parents “Parents’ decision PS” and “Student decision S2”, both together designated with “Family decision FD” as shown (Figure 4).

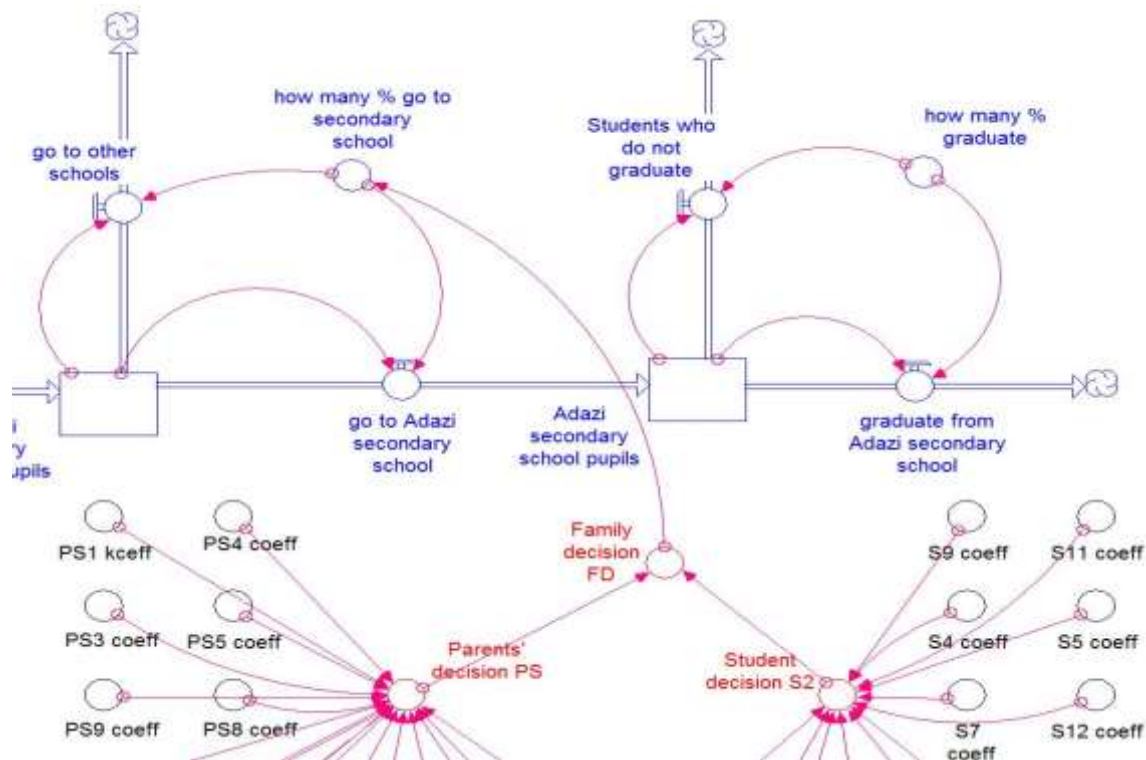


Figure 4. Example of family decisions’ influence on school selection (STELLA screenshot).

Decision making converters (“how many % go to secondary school”) and the connected flows influencing number of pupils in primary/secondary school (“go to Ādaži secondary school”, “go to other schools”) are also represented.

## Results and discussion

A theoretical and simulation model of school decision impact factors on pupils’ flows has been developed. School is an organisation with lots of children involved in the study process and it is not recommended to experiment with various decisions to see their impact in real life. The simulation model allows prioritizing actions for school development by doing the work that has the greatest impact on the total result.

The simulation model that has been developed within this research for Ādaži Secondary school implies demographic/migration data tested for normality and the school selection factors, which are used to simulate number of pupils in the school. In this way the simulation model can help to solve the school development planning problem investigated in this study.

Before expanding a school or building a new school building in suburban rural areas municipality staff could use the simulation model as it might play useful role in future development planning of education establishments as shown below (Figure 5).

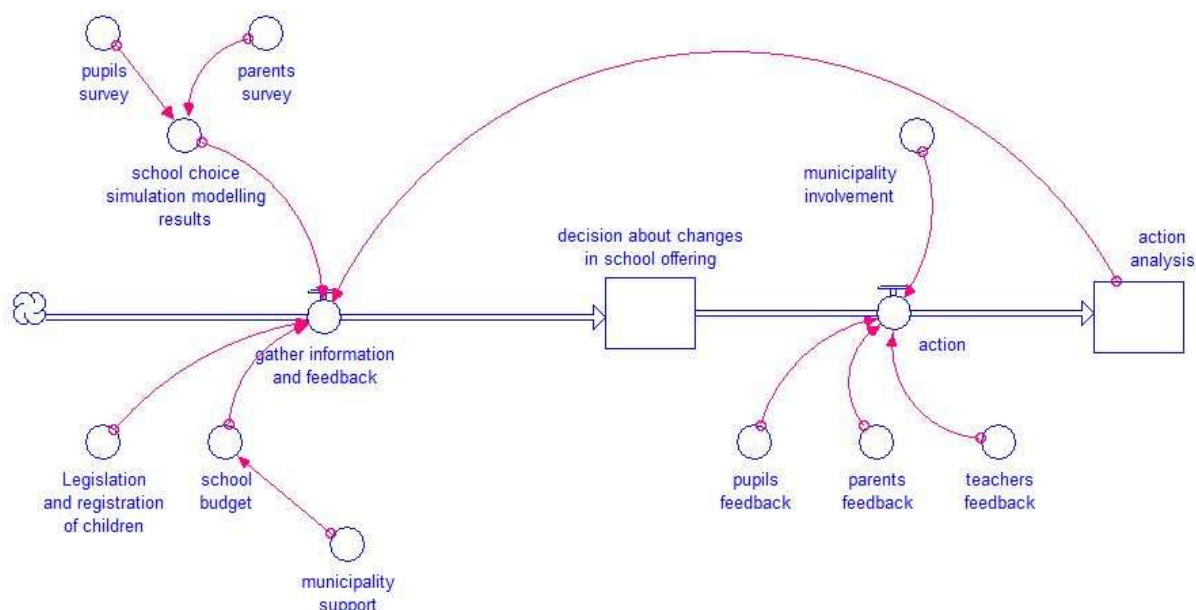


Figure 5. Role of the model in school development planning (*STELLA* screenshot).

The research was carried out in only one municipality in Riga suburban area. Quantity and quality of input data is essential for the simulation model to produce better results and to more accurately present the influence of various factors. In this case, due to Administrative territorial reform of Latvia implemented in 2009, there was a difficulty to gather older data. Regular (annual) parent & pupil surveys would contribute to collecting high quality data from all parents as well as from other inhabitants.

### Recommendations for future studies

As it was evident from the theoretical model, pupils before secondary school (grade 9) are more involved in the family decision. Author sees an opportunity for doing a social research and developing the model to investigate how large is pupils' share in the school selection decisions in Latvia and to evaluate whether expanding of suburban rural schools is economically reasonable. The costs should be calculated and compared to other solutions, e.g., school buses driving from suburban rural areas like Ādaži to larger secondary schools and gymnasiums in Riga City.

Further investigation could be a deeper study of additional influence factors and their interrelationship for the simulation model. It is important to recognize simulation modeling as a supportive tool for school planning in developing municipalities.

### Conclusions

Although the empirical research was carried out within one secondary school in Latvia, the author considers it topical in all municipalities in the Riga suburban area in general as certified by the interviewed education and urban planning experts.

Result of the research is a simulation model developed for a school, and it can be developed by adding new criteria such as "parents' income level", "parents' education", "friends' decision", to add new aspects to the next research. With amendments of criteria the model can be adapted for use in other areas, e.g., modeling the flows of library readers' or museum visitors. The results of this research might help municipality to plan the future of Ādaži Secondary School as well as to produce data to discover the relationship of municipality activities and the number of pupils in schools.

If municipality considers further school development an important issue for the local people, donating administrative or financial resources for local inhabitant surveys on a regular basis is crucial because the data in the model must be updated to comply with the reality. The model does not predict the future; however, simulation modeling can be a good supportive method for the school planning in addition to all the data tables and other calculations previously used for such work.

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## Bibliography

1. *Ādažu novada izglītības stratēģija 2016-2022 (Education Strategy of Ādaži Region 2016-2022)*. (2016). [online] [17.11.2017]. Available at [http://www.adazi.lv/upload/attistibas\\_programma/1-5\\_pielikums\\_izglitibas\\_strategija.pdf](http://www.adazi.lv/upload/attistibas_programma/1-5_pielikums_izglitibas_strategija.pdf)
2. Axelrod R. (2005). Advancing the Art of Simulation in the Social Sciences. In Rennard J.P.(Ed.). *Handbook of Research on Nature Inspired Computing for Economy and Management*. Hersey, PA: Idea Group. [online] [24.01.2016]. Available at <http://www-personal.umich.edu/~axe/research/AdvancingArtofSim.pdf>
3. Bosetti L. (2004). Determinants of School Choice: Understanding how Parents Choose Elementary Schools in Alberta. *Journal of Educational Policy*, Vol. 19 (4). [online] [06.11.2016]. Available at [https://www.researchgate.net/publication/233375254\\_Determinants\\_of\\_school\\_choice\\_Understanding\\_how\\_parents\\_choose\\_elementary\\_schools\\_in\\_Alberta](https://www.researchgate.net/publication/233375254_Determinants_of_school_choice_Understanding_how_parents_choose_elementary_schools_in_Alberta)
4. Burgess S., Greaves E., Vignoles A., Wilson D. (2015). What parents want: school preferences and school choice. *The Economic Journal*, Vol. 125 (587). pp. 1262 – 1289.
5. Chubb J. E., Moe T. M. (1990). *Politics, Markets, and America's Schools*. Washington, DC: Brookings Institution Press.
6. Eriksson L. (2011). *Rational Choice Theory: Potential and Limits*. New York: Palgrave Macmillan.
7. *Izglītības likums (Law on Education)*. (1998). Latvijas Republikas tiesību akts, Rīga: LR Saeima. [online] [06.11.2016]. Available at <http://likumi.lv/doc.php?id=50759> (in Latvian).
8. Kahneman D., Tversky A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, Vol. 47 (2), pp. 263 – 291. [online] [06.11.2016]. Available at <https://www.uzh.ch/cmsssl/suz/dam/jcr:00000000-64a0-5b1c-0000-00003b7ec704/10.05-kahneman-tversky-79.pdf>
9. Kruzmetra Z. (2011). *Piepilsētas lauku teritorijas apdzīvojuma pārmaiņas Latvijā (Changes in Population in Suburban Rural Territory in Latvia)*. Doctoral thesis. Rīga: Latvijas Universitāte. (in Latvian).
10. Lambert C. (2006). The Marketplace of Perceptions. *Harvard Magazine*. [online] [15.11.2016]. Available at <http://harvardmagazine.com/2006/03/the-marketplace-of-perce.html>
11. Nilanders K., Cakula S. (2014). Modeling potential foreign applicant flow: Case of Vidzeme University of Applied Sciences. In proceedings of the *IEEE Global Engineering Education Conference (EDUCON)*, Vol. 5. Istanbul: Bogazici University.
12. Olssen M. Peters M.A. (2005). Neoliberalism, higher education and the knowledge economy: from the free market to knowledge capitalism. *Journal of Education Policy*, vol. 20 (3). pp. 313 – 345.
13. *Population – Key indicators*. (2015). Central Statistical Bureau of Latvia [online] [17.11.2016] Available at: <http://www.csb.gov.lv/en/statistikas-temas/population-key-indicators-30624.html>
14. Scott J. (2000). Rational Choice Theory. In Browning G., Halcli A., Webster F. (Eds.) *Understanding Contemporary Society: Theories of the Present*. Thousand Oaks, CA: Sage Publications. [online] [06.11.2016]. Available at [http://msap-unlam.ac.id/download/bahan\\_bacaan/Rational%20choice%20theory.pdf](http://msap-unlam.ac.id/download/bahan_bacaan/Rational%20choice%20theory.pdf)
15. *STELLA Professional. The next generation modeling experience*. (2017). ISEE SYSTEMS [online] [19.11.2016]. Available at <http://www.iseesystems.com/store/products/stella-professional.aspx>
16. Thelin M., Niedomysl T. (2015). The (Ir)Relevance of Geography for School Choice: Evidence from a Swedish Choice Experiment. *Geoforum*, Vol. 67., pp. 110 – 120. [online] [06.11.2016]. Available at <https://lup.lub.lu.se/search/ws/files/2087005/8230782.pdf>
17. Train K.E. (2009). *Discrete Choice Methods with Simulation* (2<sup>nd</sup> ed.). New York: Oxford University Press. [online] [06.11.2016]. Available at <http://eml.berkeley.edu/books/choice2.html>



## The Opinion of Latvian and Norwegian Students about Education for Sustainable Development

Juris Porozovs<sup>1</sup> Dr. biol; Alvis Valdemiers<sup>2</sup> Mg. sc. soc.  
Riga Teacher Training and Educational Management Academy, Latvia<sup>1,2</sup>  
[juris.porozovs@rpiva.lv](mailto:juris.porozovs@rpiva.lv)<sup>1</sup>; [alvis.valdemiers@rpiva.lv](mailto:alvis.valdemiers@rpiva.lv)<sup>2</sup>

**Abstract:** Education for Sustainable Development (ESD) aims to enable everyone to acquire the values, competencies, skills and knowledge necessary to contribute to building a more sustainable society. Education for Sustainable Development should begin from the very early years of schooling and continue throughout life. The aim of the research was to understand the level of competence of Latvian and Norwegian pedagogical speciality students in the field of ESD and their attitude to the implementation of topics about sustainable development in the school's curriculum. The electronic survey of Latvian and Norwegian students about their opinion to education for sustainable development was carried out. Altogether 154 students were surveyed. The results of the research showed that more Norwegian students in comparison with Latvian students consider that they know what sustainable development is. Most Norwegian students as well as Latvian students agree that during school educational process they haven't studied topics of sustainable development or they have studied them very rarely. More Norwegian students in comparison with Latvian students agree that it is necessary to pay attention to the topics of sustainable development during the educational process. The majority of Norwegian students consider that it is necessary to begin to study topics connected with sustainable development during preschool education or during primary school education but the majority of Latvian students consider that it is necessary to begin to study topics of sustainable development during primary school education or during secondary school education. Norwegian students better understand the necessity of human behaviour in the context of sustainable development in comparison with Latvian students. The majority of Norwegian students as well as Latvian students consider that they partly act sustainable in their practical dealings. Many Latvian as well as Norwegian students understand the necessity of the sustainable development and they accept including topics of sustainable development in the school curriculum but they do not have a good understanding about sustainable development.

**Keywords:** sustainable development, Norwegian students, Latvian students, school education.

### Introduction

The important task of education is to give students complex understanding about the main processes going in the world and society, and about sustainable development. All educational domains and levels, including primary and secondary science education, have been working to contribute to education enabling younger generations to become responsible citizens and promote sustainable development in our world (Eilks, 2015). Education for Sustainable Development (ESD) aims at encouraging changes required to promote sustainable development (Capelo, Santos, 2012).

Sustainable development is a central concern of today's politics across the world. Different political agendas have been developed to promote sustainability and make it a political goal worldwide (Burmeister, Eilks, 2013). If we seek for human well-being, social equality and reduction of environmental risks we need to create sustainable prosperity. We need a new vision of the economy and its relationship to the rest of the world that is better to the new conditions we face. Our material economy is embedded in society, which is embedded in our ecological life-support system, and that we cannot understand or manage our economy without understanding the whole, interconnected system. True development must be defined in terms of the sustainable well-being (Costanza, Alperovitz, 2013). In the last 200 years humanity has transitioned into new geologic era – termed Anthropocene – which is defined by an accelerating departure from the stable environment into a new, unknown state of the Earth. In order to maintain a global environment that is conducive for human development and well-being it is necessary to return to the long term stable global environment that nurtured human development (Steffen, Rockström, 2011). We have to understand better what really does contribute to sustainable human wellbeing and recognize the substantial contributions of natural and social capital, which are now the limiting factors to improving well-being in many countries. We have to be able to distinguish between real poverty, in terms of low quality of life, and low monetary income (Costanza, Alperovitz, 2013).

The important role of education for preparing students for work in the field of sustainable development have been approved by schools, higher education institutions, governments and United Nations (Grandins, Apine, 2010). ESD aims at enabling everyone to acquire the values, competencies, skills and knowledge necessary to contribute to building a more sustainable society. Biological knowledge and practice are intrinsically related to building a sustainable relationship between nature and human society (Diong, Mijung, 2012). However, sustainable development is a complex idea, based on environmental, economic and social dimensions. In line with sustainable development, education for sustainable development is an approach to teaching that combines cognitive and affective domains and aims to build empowerment abilities (Berglund, Gericke, 2014). In many countries it has long been upheld as an important tool for increasing understanding of, and dealing with, environmental problems. At the same time it is not clear, however, what role education can actually have in the making of a more sustainable future. Even though there are several potential ways for sustainable development to be involved in education, the concept raises many questions when transferred to the school context (Gyberg, Löfgren, 2016).

Whether we view sustainable development as one of our greatest challenges we need education for sustainable development in different levels. ESD should begin from the very early years of schooling and continue throughout life (Sa, Martins, 2012).

If one wants to change the society and education, one of the cornerstones to start with is the education and training of teachers and teacher educators. This requires a change both in education and in teacher education (Hofman, 2015). ESD means including key sustainable development issues into teaching and learning. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development. In order to carry out these tasks it is necessary to know the knowledge and attitude of students to ESD.

The aim of the research was to understand the level of competence of Latvian and Norwegian pedagogical speciality students in the field of ESD and their attitude to the implementation of topics about sustainable development in the school's curriculum.

## **Methodology**

The electronic survey of Latvian and Norwegian students about their opinion to education for sustainable development was carried out. Norwegian students were surveyed in the Lillehammer University College but Latvian students were surveyed in the Riga Teacher Training and Educational Management Academy during 2015-16 academic year. Norwegian as well as Latvian students were studying pedagogy. Altogether 154 students were surveyed (54 Norwegian students and 100 of Latvian students). The survey was worked out in order to clarify the understanding of students about sustainable development, to find out, if students have studied topics about sustainable development during school's educational process, to clarify the opinion of students, is it necessary to pay attention to the topics of sustainable development during educational process and what topics of sustainable development must be included in school's educational programme, to clarify the opinion of students, when is it necessary to begin to study topics connected with sustainable development, have students thought about human behaviour in the context of sustainable development and the opinion of students, do they act sustainable in their practical dealings.

SPSS statistical data processing program was used for statistical analysis. Mann-Whitney U test was used for data analysis.

The research questions were: are Norwegian and Latvian students competent in the field of education for sustainable development and what are the student attitudes to the including of topics about sustainable development in the school's educational programme.

## **Results and discussion**

The results of the questionnaire showed that more Norwegian students consider that they have good understanding about sustainable development in comparison with Latvian students. Forty-eight percent of surveyed Norwegian students consider that they know what is sustainable development (Figure 1). Only 18 % of Latvian students exactly know what is sustainable development but 46 % of students partly know what sustainable development is. Fifteen percent of Norwegian students and 18 % of



Latvian students don't know what sustainable development is. Differences between Latvian and Norwegian student answers are on tendency level ( $p=0,065$ ).

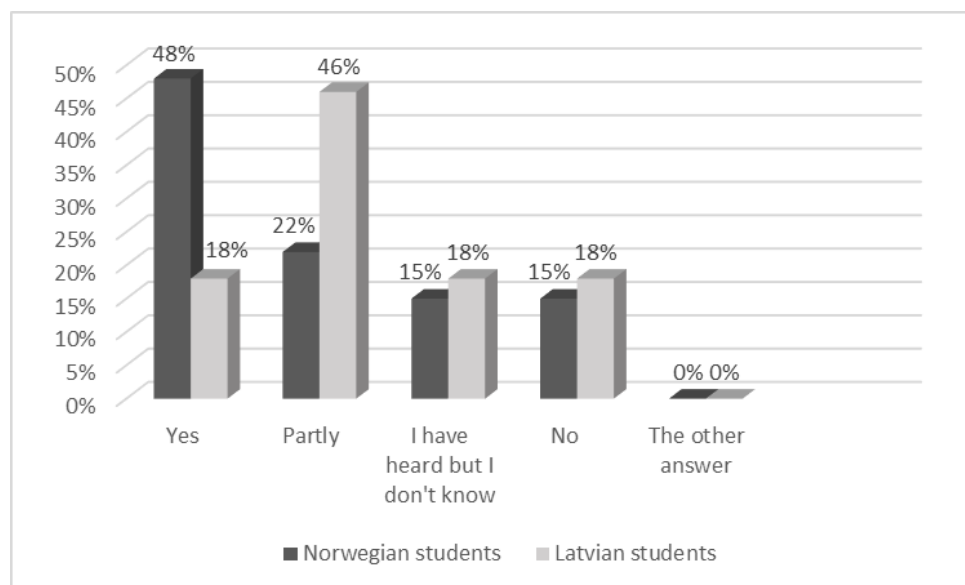


Figure 1. The understanding of Norwegian and Latvian students about sustainable development (in % from the number of respondents).

The majority of Norwegian students as well as Latvian students agree that during school educational process they haven't studied topics of sustainable development or they have studied them very rarely (Figure 2). Even more Norwegian students (59 %) in comparison with Latvian students (34 %) answered that they have not studied topics connected with sustainable development during school educational process. A part of students answered that they have sometimes studied topics about sustainable development during school educational process (22 % of Norwegian students and 26 % of Latvian students). At the same time 8 % of Norwegian students and 14 % of Latvian students claim that they have studied topics about sustainable development during school educational process. The answers of students give a notion that students do not have a clear understanding, which are the topics of sustainable development.

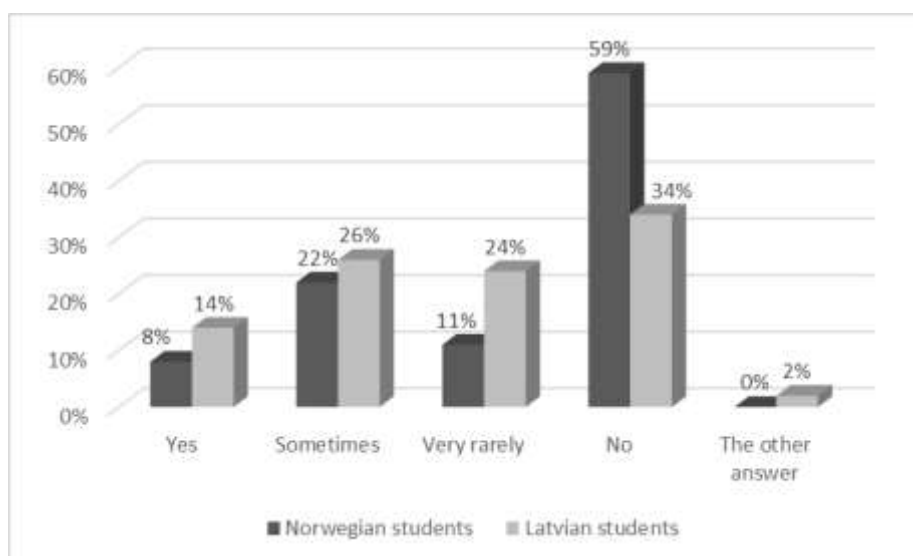


Figure 2. The answers of Latvian and Norwegian students if they have studied topics about sustainable development during school training process (in % from the number of respondents).

More Norwegian students (56 %) in comparison with Latvian students (28 %) agree that it is necessary to pay attention to the topics of sustainable development during educational process (Figure 3). The majority of Latvian students (56 %) rather agree that it is necessary to pay attention to the topics of

sustainable development during educational process. A part of students has no opinion about this question (18 % of surveyed Norwegian students and 14 % of Latvian students), but there are no students in both groups who don't agree that it is necessary to pay attention to the topics of sustainable development during educational process. Differences between Latvian and Norwegian student answers are on tendency level ( $p=0,096$ ).

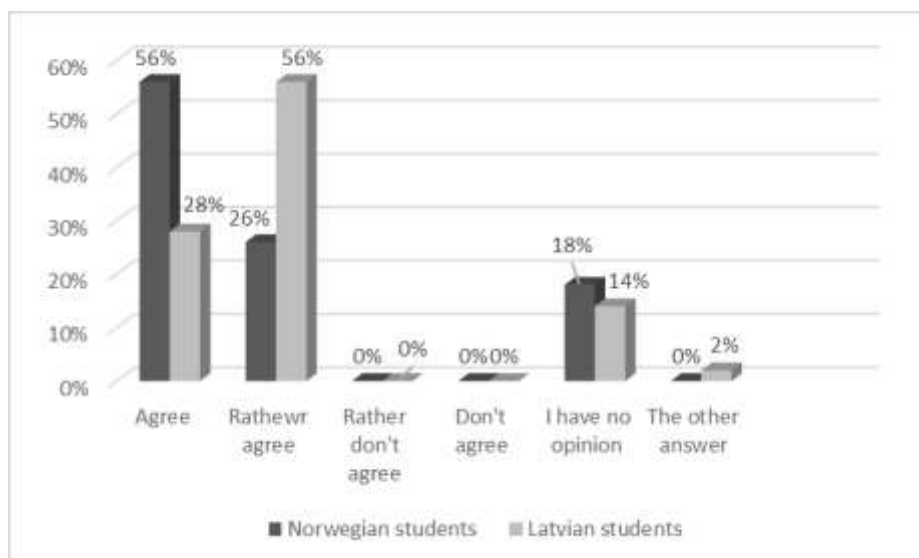


Figure 3. The opinion of Norwegian and Latvian students about problem: is it necessary to pay attention to the topics of sustainable development during educational process (in % from the number of respondents).

Most Norwegian as well as Latvian students agree or rather agree that it is necessary to include different topics of sustainable development in the school's educational programme (Table 1). Fifty-six percent of Norwegian students and 64 % of Latvian students consider that it is necessary to include topics about pollution. Fifty-nine percent of Norwegian students and 46 % of Latvian students assist the opinion that topics about natural resources must be included in the school's educational programme. Forty-four percent of Norwegian students and 60 % of Latvian students agree that topics about sorting and management of waste and 44 % of Norwegian students and 48 % of Latvian students think that topics about ecosystems and its protection must be included in the school's educational programme. Forty-one percent of Norwegian students and 50 % of Latvian students rather agree that topics about greenhouse effect and reduction of emission of gases must be included in the school's educational programme. More Latvian students in comparison with Norwegian students consider that such topics as reduction of environment risks and decision making and ownership must be included in the school's educational programme. Sixty-four percent of Latvian students agree the opinion that topics about decision making and ownership must be included in the school's educational programme but only 26 % of Norwegian students have the same opinion.

Rather many of Norwegian students admit that they have no opinion about including of topics of sustainable development in the school's educational programme. For example, 30 % of Norwegian students declare that they have no opinion about including in the school's educational programme topics about reduction of biodiversity, 29 % of Norwegian students have no opinion about including such topics as biosphere, its protection and decision making and ownership in the school curricula. There are more Norwegian students in comparison with Latvian students who don't agree for including of different topics of sustainable development in school curriculum. It seems that some of Norwegian students are not competent about different topics of sustainable development.

Table 1

**The opinion of Norwegian (NO) and Latvian (LV) students: what topics of sustainable development must be included in the school's educational programme**  
(in % from the number of respondents)

Answer  Group of students  Topic	Agree		Rather agree		Rather don't agree		Don't agree		I have no opinion	
	NO	LV	NO	LV	NO	LV	NO	LV	NO	LV
Pollution (air, water, soil)	56	64	26	34	0	2	7	0	11	0
Use of natural products	30	56	37	40	15	4	7	0	11	0
Biosphere, its protection	30	38	30	44	7	12	4	2	29	4
Ecosystems, its protection	44	48	26	46	11	6	4	0	15	0
Greenhouse effect and reduction of emission of gases	33	28	41	50	4	20	4	2	18	0
Natural resources, use, saving, recovery	59	46	18	52	4	2	4	0	15	0
Sorting and management of waste	44	60	22	36	15	4	4	0	15	0
Energy efficiency and renewable energy	41	34	33	44	7	14	4	6	15	2
Reduction of biodiversity	26	36	26	44	11	12	7	6	30	2
Reduction of environment risks	30	62	37	32	11	4	4	0	18	2
Decision making and ownership	26	64	30	32	15	4	0	0	29	0

Most surveyed students consider that it is necessary to begin very early to study topics connected with sustainable development (Figure 4). 48 % of questionnaire Norwegian students believe that already during preschool education children must begin to study topics connected with sustainable development. The same opinion is expressed by 26 % of Latvian students. 40 % of Latvian students and 22 % of Norwegian students consider that it is necessary to begin to study topics connected with sustainable development during primary school education. Only few students (4 % of Norwegian students and 10 % of Latvian students) consider that students must begin to study topics connected with sustainable development during secondary school education but no one student have answered that these topics must be obtained only during higher education process. Students are confident that it is too late.

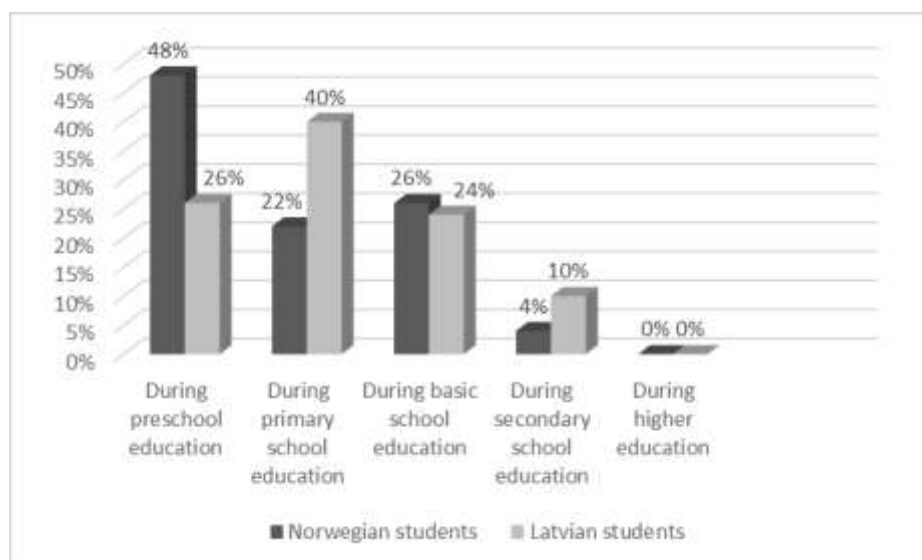


Figure 4. Norwegian and Latvian students view, when is it necessary to begin to study topics connected with sustainable development (in % from the number of respondents).

The majority of Norwegian students have thought about human behaviour in the context of sustainable development (44 %) or sometimes thought about it (44 %) (Figure 5). These answers show that Norwegian students understand the necessity of human behaviour in the context of sustainable development. Latvian students more rarely have thought about human behaviour in the context of sustainable development. 48 % of surveyed Latvian students admit that they have not thought about human behaviour in the context of sustainable development. The results of student answers show that it is necessary to improve understanding of Latvian students about sustainable development in the practical context.

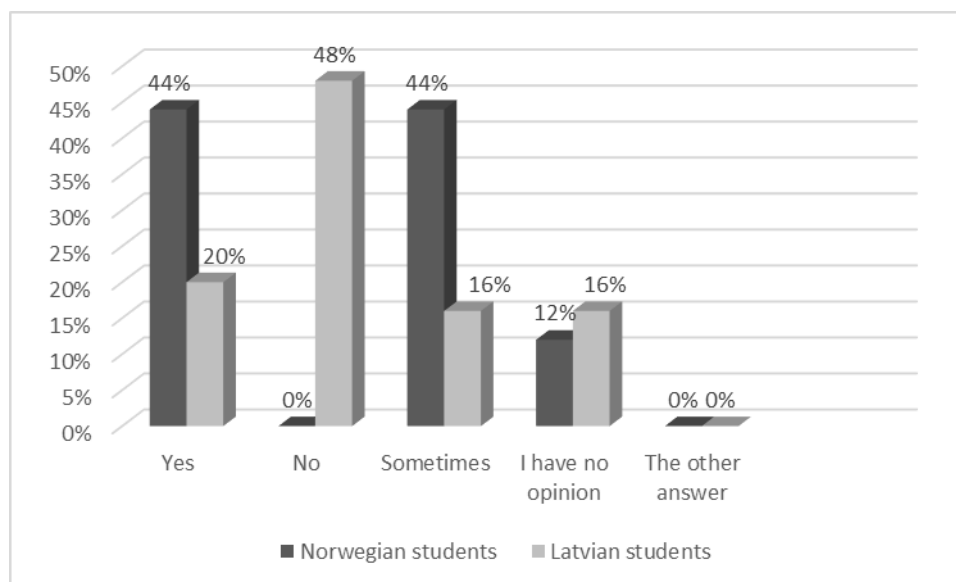


Figure 5. The answers of Latvian and Norwegian students if they have thought about human behaviour in the context of sustainable development (in % from the number of respondents).

The majority of Norwegian students (63 %) as well as Latvian students (68 %) consider that they partly act sustainable in their practical dealings (Figure 6). Even more Latvian students (22 %) in comparison with Norwegian students (15 %) believe that they act sustainable in their practical dealings. It is very important to act sustainable in practical dealings for everybody but in order to act sustainable, good understanding about sustainable development is necessary.

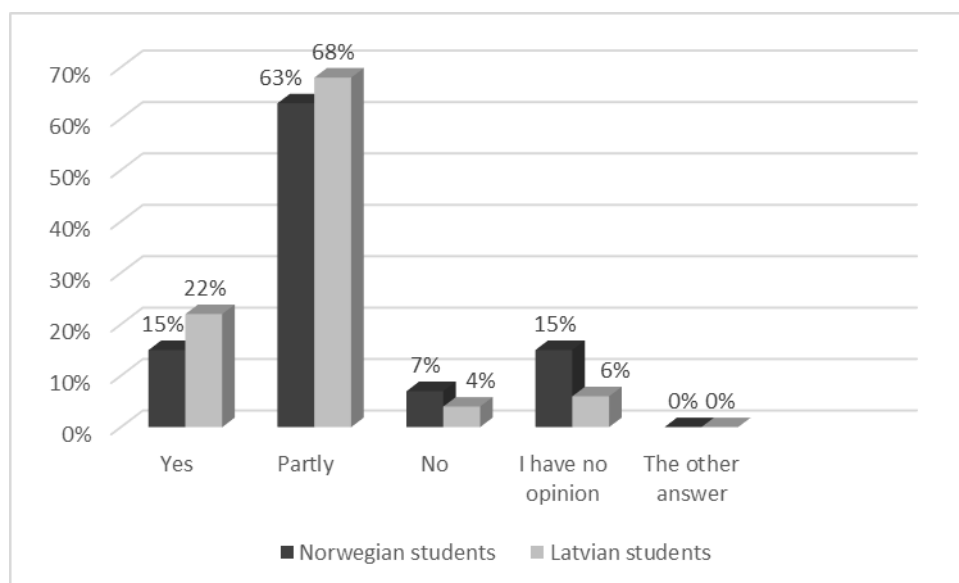


Figure 6. The opinion of Norwegian and Latvian students, if they act sustainable in their practical dealings (in % from the number of respondents).

## Conclusions

- More Norwegian students than Latvian students consider that they know what sustainable development is. The majority of Latvian students partly know what sustainable development is, or they have heard about it but they don't exactly know what it is. The majority of Norwegian students as well as Latvian students agree that during school educational process they have not studied topics of sustainable development or they have studied them very rarely.
- More Norwegian students in comparison with Latvian students agree that it is necessary to pay attention to the topics of sustainable development during educational process. At the same time, a part of Norwegian students do not have a good understanding about topics regarding sustainable development.
- Students are confident that it is necessary to begin to study topics connected with sustainable development very early. The majority of Norwegian students consider that it is necessary to begin to study topics of sustainable development during preschool education or during primary school education but the majority of Latvian students consider that it is necessary to begin to study topics of sustainable development during primary school education or during basic school education.
- Norwegian students better understand the necessity of human behaviour in the context of sustainable development in comparison with Latvian students. More Norwegian students in comparison with Latvian students have thought about human behaviour in the context of sustainable development. The majority of Norwegian students as well as Latvian students consider that they partly act sustainable in their practical dealings.
- The results of the research suggest that the majority of Latvian as well as Norwegian students understand the necessity of the sustainable development and they accept including topics of sustainable development in the school curriculum but they have not good understanding about sustainable development.

## Bibliography

1. Berglund T., Gericke N., Chang-Rundgren S. (2014). The Implementation of Education for Sustainable Development in Sweden: Investigating the Sustainability Consciousness among Upper Secondary Students. *Research in Science & Technological Education*, Vol. 32 (3), pp. 318 – 339.
2. Burmeister M., Eilks I. (2013). An Understanding of Sustainability and Education for Sustainable Development among German Student Teachers and Trainee Teachers of Chemistry. *Science Education International*, Vol. 24 (2), pp. 167 – 194.

3. Capelo A., Santos M.C., Pedrosa M.A. (2012). *Education for Sustainable Development Indicators, Competences and Science Education*. Contributions to the UN Decade of Education for Sustainable Development. (Ch.5). Frankfurt am Main: Peter Lang AG.
4. Costanza R., Alperovitz G., Daly H.E., Farley J., Franco C., Jackson T., Kubiszewski I., Schor J., Victor P. (2013). Building a Sustainable and Desirable Economy–in-Society-in-Nature. In *State of the World 2013 Is Sustainability Still Possible?* (Ch. 11). The Worldwatch Institute.
5. Diong C. H., Mijung K. (2012). *Biology Education for Social and Sustainable Development*. Asian Association for Biology Education. Rotterdam: Sense Publishers.
6. Eilks I. (2015). Science Education and Education for Sustainable Development--Justifications, Models, Practices and Perspectives. *EURASIA Journal of Mathematics, Science & Technology Education*, Vol. 11 (1), pp. 149 – 158.
7. Grandins J., Apine L., Kovbasko O., Žuka J. (2010). Studentu loma ilgtspējīgā attīstībā: radīt pievilcīgu ilgtspējīgu nākotni. (The Role of Students in the Sustainable Development: to Create Attractive Sustainable Future). In Kļaviņš M., Zaļoksnis J. (Eds.). *Vide un ilgtspējīga attīstība (Environment and Sustainable Development)*. Rīga: LU Akadēmiskais apgāds, pp. 307 – 315. (in Latvian)
8. Gyberg P., Löfgren H. (2016). Knowledge Outside the Box - Sustainable Development Education in Swedish Schools. *Educational Research*. Vol. 58 (3), pp. 283 – 299.
9. Horman M. (2015). What Is an Education for Sustainable Development Supposed to Achieve—A Question of What, How and Why. *Journal of Education for Sustainable Development*, Vol. 9 (2), pp. 213 – 228.
10. Sa P., Martins I.P. (2012). Education for Sustainable Development in Primary Schools: Contributions from the Development of a Teacher Training Program. *Contributions to the UN Decade of Education for Sustainable Development*. (Ch. 8). Frankfurt am Main: Peter Lang AG.
11. Steffen W., Rockström J., Costanza R. (2011). How Defining Planetary Boundaries Can Transform Our Approach to Growth. *Solutions for a Sustainable and Desirable Future*. Vol. 2 (3), pp. 59 – 65. [online] [03.11.2016]. Available at <https://www.thesolutionsjournal.com/article/how-defining-planetary-boundaries-can-transform-our-approach-to-growth/>

## Involvement and social education crucial for efficient development of rural areas

Barbara Prus<sup>1</sup> PhD; Malgorzata Dudzińska<sup>2</sup> PhD;

Stanisław Bacior<sup>3</sup> PhD; Cezary Kowalczyk<sup>4</sup> PhD

University of Agriculture in Krakow, Poland<sup>1,3</sup>;

University of Warmia and Mazury in Olsztyn, Poland<sup>2,4</sup>

[plan.zaoczne@gmail.com](mailto:plan.zaoczne@gmail.com)<sup>1</sup>; [gosiadudzi@uwm.edu.pl](mailto:gosiadudzi@uwm.edu.pl)<sup>2</sup>;

[geomm@poczta.onet.pl](mailto:geomm@poczta.onet.pl)<sup>3</sup>; [cezary.kowalczyk@uwm.edu.pl](mailto:cezary.kowalczyk@uwm.edu.pl)<sup>4</sup>

**Abstract:** Sustainable development balances between the three aspects: social, economical and environmental. The positive tendency of development ensures improvement of life quality in rural areas. The development of rural areas is not possible without “intentional, active partial or comprehensive participation of village inhabitants” as they should first of all benefit from the changes in those areas. Active public involvement preceded by education in the field of practical implementation of rural areas development rules will result in gathering experience by the inhabitants, their social integration and responsibility for common good which is rural space. As Bavarian experiences indicate, questionnaire surveys allow to determine current state of knowledge and also to point optimal lines of rural areas development to the inhabitants. Education of residents should be oriented to develop: buildings in rural areas, infrastructure, landscape, agriculture, inter-neighbourly relations as well as social communication forms. Evaluation of status quo performed on the basis of the questionnaire aimed at inhabitants (184 questions assessed in 5-grade scale – 36 questions concern the shape of future building areas, 23 ones are connected with infrastructure development, 28 ones concern landscape forming, 48 – agriculture development in rural areas, 34 – inter-neighbourly relations and 15 – social communication) was proposed in the paper. Positive aspects of the questionnaire form of inhabitants’ education for rural areas sustainability was presented in the paper. The surveys were evaluated by means of SWOT analysis. Findings of this study should be presented to members of local communities as a positive aspect of active public participation. The research based on methods: analysis and synthesis of the literature, methodology of questionnaire surveys. The article presents an important aspect of active public participation in the development of rural areas.

**Keywords:** adult education, inhabitants’ education, questionnaire surveys, rural areas development.

### Introduction

Sustainable development appeared for the first time in 1987 in the report entitled „Our Common Future” prepared by Brundtland Commission (Kates, Parris, 2005; Our Common Future, 1987). It is well known that sustainable development balances between the three aspects: social, economical and environmental (Redclift, 2005). It is worth emphasizing that in modern economic science and practice the problem of sustainable development of rural areas is one of the debating points (Semenowa, Busalova., 2016). Numerous surveys point that the positive tendency of development ensures improving of life quality in rural areas where the problem of sustainability is still relevant (Lanfranchi, Giannetto, 2014; Léonard, Foyer, 2016; Meyhard, 2009; Petrick, Buchenrieder, 2007; Semenova, Busalova, 2016; Torre, Wallet, 2013).

The development of rural areas is not possible without intentional, partially active or comprehensive participation of village inhabitants as they should first of all benefit from the changes in those areas. And any activities at rural area development should not disregard the inhabitants who are “the tools” of given mechanisms. The effectiveness of social activities is determined by the participants’ expectations and their knowledge of the project (Dudzińska, Kocur-Bera, 2015).

Rural areas development in Poland is conditioned in particular by local spatial planning (Pijanowski, Ziobrowski, 2008). In the procedure of programming documents legislation, planning considers participation of local communities both at the stage of requesting in the first level of project’s elaboration and at the following stages while submitting comments to already elaborated projects of planning documents (Bieda, Hanus, 2012; Cymerman, 2011; Niewiadomski, 2008). However, there are well-known cases of conflicts e.g. between expectations of a local community and natural environment welfare (Stachowski, 2008) or economic conflicts between cultural landscape and rural communities (Hernik, Gawroński, 2013). Scientist M. Czepkiewicz (Czepkiewicz, Jankowski, 2015; Czepkiewicz, Młodkowski, 2015) indicate eliciting preferences of stakeholders and members of the public as one of

the ways of seeking public input during planning process. Such preferences are very important because of local knowledge and everyday experience (Rantanen, Kahila, 2009) of inhabitants. This knowledge allows to anticipate conflicts between stakeholders (Brown, Raymond, 2014; Talen 2000) and could provide a socially acceptable, sustainable rural areas development.

The questionnaire in this paper shows experiences that the authors have collect during the Leonardo da Vinci Lifelong Learning Programme in the framework of exchange programme.

**The aim of research:** Improving the quality of academic education in the field of surveying rural management based on experience of practices and higher education in Bavaria.

## Methodology

Active public participation preceded by education in the range of practical realization of rules of rural areas development will result in gaining experience by inhabitants, their social inclusion, responsibility for the common good which is rural space. As Bavarian experiences (Ländliche Entwicklung in Bayern..., 2016) indicate, questionnaire surveys that educate on the subject of rural areas development and at the same time suggest introducing certain standards and behaviours can be the educational support. Surveys allow to determine the current state of knowledge and also to show inhabitants the optimal ways of rural areas development. Inhabitants' education should be targeted towards topic ranges connected with development of multi-faceted character (as the definition of sustainability (Policy Division..., 1999) indicates), so with the development of: 1) housing in rural areas (formation of new building objects and vision of future "shape" of rural area); 2) infrastructure (transport, network of technical utilities); 3) landscape (shaping and living in landscape and rural natural environment); 4) economy (agriculture and farms); 5) inter-neighbourly relations (communities, associations in villages); 6) forms of social communication (knowledge, social communication, common deciding).

Social participation will allow to formulate answers to basic questions connected with rural areas development „in situ”: what are strengths and weaknesses of: building development, infrastructure, landscapes of various kinds (cultural, economic (agricultural) and social one) or forms of social communication. Because these are elements influencing sustainability which can be classified in the category of economic, social and environmental factors.

Economic indicators characterize the development of rural areas and the level of sustainability of reproduction processes in agriculture (Semenova, Busalova, 2016). The aspect of agriculture development in rural areas and also infrastructure development can be included in economic indicators presented in the questionnaire. Among environmental factors - the landscape shaping aspect. Social indicators include inter-neighbourly relations and social communication. The shape of future development can be described as a feature from the area between landscape formation and economic and social aspects.

The main objective of the study was to present the questionnaire which points the optimal lines of rural development to the inhabitants as a tool of residents' education. Authors also attempted to present positive and negative aspects of carrying out the questionnaire among rural community as well as chances and risks that result from this project. In consequence, SWOT analysis was performed. The analysis should be presented as one of forms of education to the inhabitants of rural areas interested in the sustainability of this land. The SWOT analysis should be also presented to the members of local communities to increase their assistance in the decision making process.

The results of the study can be used by public authorities and the governing to plan future development of rural areas considering share of local communities (participation of the society) in forming region's identity and choosing optimal solutions for creating settlement space including the shape of settlement units.

Proposed evaluation of the current state was prepared on the basis of the questionnaire aimed at inhabitants. The questionnaire contains 184 questions assessed by respondents according to assumptions in 5-grade scale - „1” means a very good state, „5” means a very weak one. From among the general number of 184 questions - 36 concern the shape of future building, 23 are connected with infrastructure development, 28 consider landscape forming, 48 – agriculture development in rural areas, 34 – inter-neighbourly relations and 15 – social communication.



Indicators for the assessment of sustainable development in rural areas considered in the questionnaire survey in indicators' groups and with content of detailed survey questions are shown below: own study based on LENA – means in short: *Development of Rural Areas in Bavaria - Sustainability with System - Questionnaire* (Ländliche Entwicklung in Bayern – Nachhaltigkeit mit System – Fragebogen) (Ländliche Entwicklung..., 2016) (Addition1).

## Results and discussion

Community shaping of rural areas development (with inhabitants' involvement), as indicated by Bavarian experiences from LENA programme, is a beneficial activity for citizens of villages and small places. For the present 7 public offices that work on rural areas development are involved within the managed project which enhances rural areas development through forming the country's image and reinforcement of regions' development capability. Projects in the number of 2,400 involve over 1,000 rural communes inhabited by one million people. Integrated rural development also includes 90 projects of regional character (LENA) (Ländliche Entwicklung..., 2016). In this way, local conditionings of small agricultural places are shaped once again and through this activity, attitude of bigger regions is strengthened in numerous communes.

SWOT (the acronym standing for Strengths, Weaknesses, Opportunities and Threats) analysis is a commonly used tool for analyzing internal and external environments in order to attain a systematic approach and support for a decision situation (Kurttila, Pesonen, 2000; Wheelen, Hunger, 1995). The internal and external factors most important to the enterprise's future are referred to as strategic factors and they are summarized within the SWOT analysis (Table 1).

Table 1

### Analysis of strong and weak points, chances and risks (SWOT) that results from implementing the educational questionnaire which concerns rural areas sustainability between inhabitants

Strong points	Weak points
<ul style="list-style-type: none"> <li>• Providing social participation prospect in forming inhabitants' local space and place of living</li> <li>• Possibility to simultaneous educating and surveying inhabitants about development conditions of local character</li> <li>• Developing inhabitants' responsibility for local life environment</li> <li>• Educating inhabitants through drawing attention that the small own contribution helps to develop rural areas sustainability (their life environment)</li> <li>• Raising awareness of local community through the detail of survey questions of how wide rural areas sustainability is and how it is determined by inhabitants' activity</li> <li>• Citizens' active share in planned development (planning) of rural space</li> <li>• Possibility to create test facilities and to present results of social participation</li> <li>• Results of the survey are helpful for local governments in efficient realization of rural areas development process</li> <li>• EU aid measures for rural areas development PROW 2014-2020 „Europe investing in rural areas”</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty in reaching every inhabitant with educational offer and lack of cooperation will of some citizens or communal authorities for the common good</li> <li>• Lack of knowledge of inhabitants on necessary aware development of rural areas in accordance with the sustainability rule</li> <li>• Big expenses paid for trainings' organization, the questionnaire, elaborating results</li> <li>• Detailed form of the questionnaire can cause choice of diametrically different answers and for that reason it may slow down decision-making process</li> <li>• Pointing out changes by conducting the survey can cause expectations of citizens as to quick modifications in spatial development</li> <li>• Inhabitants' opinion can be incoherent with demanded investments of public purpose but „unwanted” by local communities</li> <li>• Lack of legal support for the survey initiative among citizens in order to allow their participation in rural areas development</li> </ul>

Strong points	Weak points
<ul style="list-style-type: none"> <li>• Government support for social initiatives that provide agriculture modernization and restructuring</li> <li>• Possibility to present model objects, nationwide competitions for local governments activities</li> <li>• Possibility to establish contacts and achieve partnership communes</li> <li>• Possibility to realize complex (integrated) arranging of rural areas together with the country development and restoration</li> </ul>	<ul style="list-style-type: none"> <li>• Economic situation, economic crisis, lack of local authorities' interest in subject matter of rural areas development</li> <li>• Lack of possibilities to finance investments indicated by citizens in the survey from budgetary and extra-budgetary resources</li> <li>• Lack of legal instruments to support introduction of investments from so called civil budget</li> </ul>

Source: own study

Conducting the survey among citizens and its fulfilling causes first of all introduction of rural areas development subject matter to local communities. Consequently, the inhabitants become aware of wide context of this concept and numerous detailed issues which compose it. Fulfilling the questionnaire, some problems, which were not seen or linked with sustainability without paying attention to, can be involuntarily recognized. Therefore, the mere reading of the questionnaire by citizens is already some form of their active education.

Citizens' education conducted at the stage of public opinion survey is an important tool of building knowledge about factors that shape sustainability. Being the form of social participation, the tool introduced in such a way has a number of strong points which according to the authors of the present paper predominate over the weak ones (Table 1). The chances are reliable and stabile being supported by finance resources of projects realized with EU participation, whereas the risks can concern only occasional situations.

## Conclusions

Rural areas are high-value goods. And that is the way it should stay. At rural areas, people also feel a need to live attractively and have optimal conditions for working, social communication and cooperation in creating common spaces. Development of rural areas undeniably allows to strengthen the country's position in forming cultural identity, landscape's shape and as a consequence also the position of regions. Surveys precisely directed at inhabitants and touching the most crucial problems of local communities allow to test social opinions that concern rural areas development. It allows to estimate determinants and existing state as well as to get to know citizens' preferences in relation to future development directions. It is also an instrument of the analysis at the service of local authorities which allows to formulate the process of integrated development of rural areas both in terms of future housing improvement, functional and social local terms and conditions as the basis of projects of the country's renewal and also the communes' development. On the other hand, it is a good tool for educating citizens in sustainability problems, relevant aspects or decisions taken every day by the inhabitants which influence the shape of future changes at the rural areas.

Actions taken during realization of postulates of rural areas sustainability will result best when decisions will be taken with the participation of rural community. It is only possible when the inhabitants will become acquaint with every aspect of this task and they will also have even basic knowledge in that range.

Positive response of the survey by the local community will allow to highlight detailed problems of rural areas development. It will also let know the expectations of the citizens. The pressure of inhabitants to realize chosen changes in spatial management in a short time can be one of the weak points as this may be restricted by limited access to sources of funding.

The opinion of the citizens expressed in the questionnaire can be used by local institutions or authorities of local government as the form of social participation of inhabitants and their voice in matters of the place's future development as the opinion supported by multiannual experience of residents.

Presented SWOT analysis enables to perceive positively the survey which provides full and reliable information about multispectral sustainability of rural areas which is the form of education for citizens as well as their active public participation.

## Bibliography

1. Bieda A., Hanus P., Hycner R. (2012). *Geodezyjne aspekty planowania przestrzennego i wybranych opracowań projektowych. (Geodetic Aspects of Spatial Planning and Chosen Elaborates)*. Katowice: Wyd. Gall. (in Polish)
2. Brown G., Raymond C. M. (2014). Methods for Identifying Land Use Conflict Potential Using Participatory Mapping. *Landscape and Urban Planning*, Vol. 122, pp. 196 – 208.
3. Czepkiewicz M., Jankowski P., Młodkowski M. (2015). Geo-Questionnaires in Urban Planning: Recruitment Methods, Participant Engagement and Data Quality. *Cartography and Geographic Information Science*. John Wiley & Sons Ltd. pp. 1 – 17. [online] [22.09.2016]. Available at <http://dx.doi.org/10.1080/15230406.2016.1230520>
4. Czepkiewicz M., Młodkowski M., Zwoliński Z., Jankowski P. (2015). Eliciting Resident's Preferences for Urban Function Change Using Online Geo-Questionnaires. *AGILE 2015*. Lisbon, June 9 – 12, 2015. [online] [08.01.2017] Available at [https://agile-online.org/conference\\_paper/cds/agile\\_2015/shortpapers/81/81\\_Paper\\_in\\_PDF.pdf](https://agile-online.org/conference_paper/cds/agile_2015/shortpapers/81/81_Paper_in_PDF.pdf)
5. Cymerman R. (Eds.) (2011). *Podstawy planowania przestrzennego i projektowania urbanistycznego. (Bases of Spatial Planning and Urban Design)*. Olsztyn: Wyd. UWM. (in Polish)
6. Dudzińska M., Kocur-Bera K. (2015). Community Education and Integrated Organization of Rural Areas based on Land Consolidation Processes in Poland. In *Proceedings of the International Conference: Rural Environment, Education, Personality*, Vol. 8., Jelgava: LLU, pp. 34 – 41. ISSN 2255-808X [online] [08.01.2017] Available at <http://lufb.llu.lv/conference/REEP/2015/Latvia-Univ-Agricult-REEP-2015proceedings.pdf>
7. Hernik J., Gawroński K., Dixon-Gough R. (2013). Social and Economic Conflicts between Cultural Landscapes and Rural Communities in the English and Polish Systems. *Land Use Policy*, Vol. 30 (1), pp. 800 – 813.
8. Kates R. W., Parris T. M., Leiserowitz A. A. (2005). What is Sustainable Development? Goals, Indicators, Values and Practice. *Environment: Science and Policy of Sustainable Development*, Vol. 47 (3), pp. 8 – 23.
9. Kurttila M., Pesonen M., Kangas J., Kajanus M. (2000). Utilizing the Analytic Hierarchy Process (AHP) in SWOT analysis – A Hybrid Method and its Application to a Forest-Certification Case. *Forest Policy and Economics*, Vol. 1 (1), pp. 41 – 52.
10. Lanfranchi M., Giannetto C. (2014). Sustainable development in rural areas: The new model of social farming. *Quality – Access to Success*, 15, pp. 219 – 223.
11. *Ländliche Entwicklung in Bayern (Development of Rural Areas in Bavaria)* (2016). (LENA) [online] [22.09.2016]. Available at <http://www.stmelf.bayern.de/landentwicklung/> (in German)
12. Léonard E., Foyer J. (2016). The Appropriation of Norms of Sustainable Development from the Peripheral, Rural Territorial Level in Mexico. *Espace Géographique*, Vol. 46 (3), pp. 198 – 213.
13. Meyhard R. (2009). *Territorial Development in Rural Areas of Germany*. Dortmund: Technical University of Dortmund.
14. Niewiadomski Z. (Ed.) (2008). *Planowanie i zagospodarowanie przestrzenne. Komentarz. (Spatial Planning and Management. Comments)* Warszawa: Wyd. CH Beck. (in Polish)
15. *Our Common Future*. (1987). World Commission on Environment and Development (WCED). New York: Oxford University Press. p. 8.
16. Petrick M., Buchenrieder G. (2007). Sustainable Rural Development: What is the Role of the Agri-Food Sector? *Studies on the Agricultural and Food Sector in Central and Eastern Europe*, Vol. 39, pp. 18 – 27.
17. Pijanowski J., Ziobrowski Z. (2008). *Nowe zadania planowania miejscowego w kształtowaniu i zagospodarowaniu przestrzennym obszarów wiejskich. (New Tasks of Local Spatial Planning in Creating Rural Areas Management)*. Kraków: Instytut Rozwoju Miast. (in Polish)
18. *Policy Division, Board on Sustainable Development, Our Common Journey: A Transition Toward Sustainability*. (1999). Washington DC: National Research Council (NRC), National Academy Press.
19. Rantanen H., Kahila M. (2009). The SoftGIS Approach to Local Knowledge. *Journal of Environmental Management*. Vol. 90 (6), pp. 1981 – 1990.
20. Redclift M., (2005). Sustainable Development (1987–2005): an Oxymoron Comes of Age. *Sustainable Development*, Vol. 13, pp. 212 – 27.

21. Semenova N. N., Busalova S. G., Eremina O. I., Makeikina S. M., Ivanova I. A. (2016). Assessment of Sustainable Development of Rural Areas of Russia. *Indian Journal of Science and Technology*, Vol. 9 (14), pp. 1-7.
22. Stachowski P. (2008). Miejscowe planowanie i zagospodarowanie przestrzenne na przykładzie terenu w otulinie Parku Krajobrazowego „Puszcza Zielonka” (Local Spatial Planning and Spatial Management Based on the Example of the „Zielonka Forest” Scenic Park). *Annual Set the Environment Protection*, Vol. 10, pp. 575 – 592. (in Polish)
23. Talen E. (2000). Bottom-up GIS: A New Tool for Individual and Group Expression in Participatory Planning. *Journal of the American Planning Association*, Vol. 6 (3), pp. 279-294.
24. Torre A., Wallet F. (2013). Innovation and Governance of Rural Territories. In: Coudel E., Devautour H., Soulard C. T, Faure G., Hubert B. (Eds.) *Renewing Innovation Systems in Agriculture and Food: How to go towards more sustainability?* Wageningen: Wageningen Academic Publishers.
25. Wheelen T. L., Hunger J. D. (1995). *Strategic Management and Business Policy*, (5<sup>th</sup> ed.). Reading, MA: Addison-Wesley.

Addition 1

**I. Shape of future building areas (rural development and look):*****Do we build in such a way the environment allows?***

1. We build so as not to disrupt water management
2. We live on the southern slopes and not on the cold - northern ones
3. We do not build where nature has more right to live
4. We use only so much place to live and work as we really need
5. We do not manage areas with the highest productive values
6. We create places for advertisement and trade together with adjacent places
7. We cannot afford squatters
8. First, we develop squatters – before building up open areas
9. We focus on settlements interior building
10. Work place is our home
11. Apartment and work - good completion
12. Inhabitants can meet their basic commercial and service needs on-site
13. We have another idea to develop the village's centre
14. We have a proper place for every development direction
15. We leave place to our future development ideas
16. We have a „vibrant” market and some small squares
17. Our place has many public green spaces
18. There is always a place to talk to a neighbour between the fences and a street
19. There is always something interesting in our streets, you can find adventure here
20. Our children have places for playing and adventures
21. We love sport; we have many sporting places to offer
22. Our rural stream „teems with life”
23. Peripheral areas of the village are our green visiting cards

***How do we live? Do we take advantage of environmentally friendly technological advances?***

24. Our houses are built in accordance to our needs
25. Our houses are built properly towards the parts of the world, sun and wind
26. We build in the region's style
27. We protect our monuments by using them
28. We build houses making them „grow” with us – modernly
29. We leave many unconcreted areas which allows to keep water and decrease flood risk
30. We take care of free passages for wheelchairs and baby carriages
31. We use natural materials for building
32. We introduce solar energy into our houses and do not let it out any more
33. Our houses are warm and airproof
34. We do not waste drinking water
35. Meadows grow even on our roofs as grass stops water better than gravel
36. Our farms are modern and work in accordance with environment protection

**II. Infrastructure development (road traffic, supply, discharging pollutions)*****How do we move around the village?***

1. We bet on public transport
2. There is fluent traffic in the village; we have roads appropriate for our purposes
3. We have good transport connections

4. Pedestrians and cyclists have priority
  5. All our farms have access to public roads
  6. Our local craft and industry have railway connection
  7. We leave a lot of open space and we stop water as transport space itself takes much land
  8. Our roads are also places for meetings and feasts
  9. We have many parking places matched to our needs
  10. We can sleep calmly; road traffic does not mean noise
  11. We get energy from our own energy sources
  12. We produce electricity and heat from obtained energy
  13. Our healthy drinking water comes from our own certain water intakes
  14. We have everything there we need for living (food, social and health supplies) - we do not need to travel
  15. We realize basic supplies in agreement with local societies
  16. We prefer regional products
  17. What is produced here - will be processed here
  18. Whole used water is cleaned here
  19. Distant settlements have their own cleaning system
  20. We care for soaking of rain water
  21. Water reservoirs are protected against pollution
  22. We obtain energy from biological wastes
  23. We „exchange” wastes for money
- III. Landscape forming (landscape – usage and formation)

***How do we cultivate our land?***

1. We have a lot of productive animals in our landscape
2. Agricultural and forest crops fit into natural land conditions
3. Our farmers properly manage drinking water
4. Bio-farmers play important role here
5. With their lots' proper shape and size, farmers can live in accordance with nature
6. Every farmer has their own lots together, with easy access
7. We care for land loss while shaping the lots
8. Our land is able to accumulate water
9. Our arable lands can produce more than maize only
10. We produce environmentally friendly energy from by-products
11. Our forest: not too much, not too little
12. Access roads to the lots give support to agriculture and landscape
13. Our farmers look for new technologies

***What good do we do for nature?***

14. Water has retention basins in landscape
15. We clean water from harmful substances before they will reach water courses
16. Water reservoirs are „natural” (not transformed)
17. There are many plant and animal species in the forest and on the lots
18. Natural areas in our lots have good mutual connections
19. Our protected areas are legally protected
20. We have many ecological areas
21. We organize space and use obtained energy sources within nature protection

***Does our landscape have cultural identity?***

22. As tradition says – our landscape is beautiful
23. We care for our hidden monuments

***How well can people rest here?***

24. We rest in our place
25. We have special offers for tourists
26. Road network is tailored to our needs (also for strollers, tourists, bicycles)
27. We stay out of our ways (e.g. agriculture and tourism)
28. We have many boards with information about our region

**IV. Agriculture development in rural areas (farm work and household)**

***How do we cultivate our land?***

1. We are aware of our strong and weak economic points
2. We know what lies ahead
3. We have a common economic programme for the future
4. We bet on the region
5. We work together with our adjacent communes
6. Our community is not a supermarket (everyone contributes to the costs)

7. New building permits also work out better for the community
8. Public tasks are transferred into private inhabitants
9. Community's private property relieves communal economy
10. Tax politics is balanced and confronted with adjacent communities

***Is it possible to support us with communal financial means?***

11. We are fully aware of all possibilities to obtain external means
12. Financial means for rural areas development are used optimally
13. Another public and private sources of support are used optimally
14. We are considering future and further financing
15. We set out future goals as an investment programme
16. Working factories provide available goods
17. We invest in developmental supply and wastes utilization
18. Local branches of agriculture receive help for development
19. Future technologies are challenge for us

***Does the commune invest well?***

20. Social and cultural investments educate local community
21. Offers for a free time activities and local leisure – we have plenty of them
22. Communal investments entail private ones
23. The commune provides itself with areas by exchange of lands
24. We do not invest in roads and luxurious objects
25. Communal investments provide and create places of work on-site
26. The commune favours private contribution in common future
27. The commune secures assets for future generations

***How does the commune deal with ventures?***

28. The commune is always a competent partner in talks
29. Specific ventures are searched according to the criterion of work places on a local labour market
30. Ventures that can supplement existing factories are searched
31. Progressive ventures as regards technical, social and ecological aspects are searched
32. Ventures connected with local and regional demand are searched
33. Ventures aimed at low surface usage and low emission of contaminants are searched
34. Ventures according to criteria: valuable land, ground for traditional craft, small processing are searched
35. The commune collaborates with companies

***Which is the state of craft and small processing?***

36. Local companies cooperate with each other
37. Companies are progressive in the range of technique, social base and ecology
38. Our companies keep and create safe workplaces
39. Farms take over the tasks for the common good
40. Regional economy advertises itself with its special image
41. Companies use support sources optimally
42. Neighbourly help and exchange of goods and services bloom here

***Does our agriculture have future?***

43. Many companies bode well for the future
44. Companies invest in economic and ecological progress
45. Companies save through good cooperation with each other
46. Agriculture has standing orders from local centres
47. Agricultural products are offered in the region
48. External aid measures are used optimally

***Which values are important to us?***

1. We cultivate and protect our tradition
2. We are open to the other cultures
3. Our rural community lives, we all stick together
4. We are proud of our independence – we help each other
5. We want to prepare our village for the future

***How do we deal with each other?***

6. We are together in a community; we got rid of historical grievances
7. Everyone decides; everyone is heard: women
8. Everyone decides; everyone is heard: children and the young
9. Everyone decides; everyone is heard: seniors
10. Everyone decides; everyone is heard: all social levels
11. Everyone decides; everyone is heard: newly settled
12. Everyone decides; everyone is heard: foreigners

13. Everyone decides; everyone is heard: minority groups
14. Everyone decides; everyone is heard: all interest groups
15. We celebrate every occasion

***What do we do for the rural community?***

16. Our teams contribute a lot to the rural community
17. Our parochial/religious lands are active in public life
18. We also commit ourselves beyond teams and associations
19. Associations and groups of stakeholders' work „hand in hand”
20. We organize many social and cultural events on our own account: neighbourly help
21. We organize many social and cultural events on our own account: self-help groups
22. We organize many social and cultural events on our own account: community projects
23. We organize many social and cultural events on our own account: care for seniors
24. We organize many social and cultural events on our own account: working with the young
25. We organize many social and cultural events on our own account: cultural events
26. We organize many social and cultural events on our own account: exchange circles
27. We organize many social and cultural events on our own account: community organizations

***What can be offered by commune, state and church?***

28. We have socio-cultural proposals: care for seniors
29. We have socio-cultural proposals: work with children and the young
30. We have socio-cultural proposals: offers for minority groups
31. We have socio-cultural proposals: cultural offers
32. Not only the rich can live here
33. Public good is for everyone
34. The commune and the parish cooperate with us

**V. Social communication (knowledge, active voice in discussion, co-decision)**

***Where do we speak to each other?***

1. There is a place for every point of view here, we speak openly and democratically
2. Commune's politics is commonly known and understood
3. The village's head and council look for dialogue with adjacent communes
4. We plan future in over-communal federation
5. Inhabitants are encouraged to common thinking and discussion
6. Inhabitants' knowledge and opinion are important to us
7. We talk to all social groups

***How do we learn?***

8. Everyone can improve their education
9. It is possible to learn more about natural environment and social relations
10. We teach each other
11. Knowledge about tradition is respected here
12. All important information about settlement and landscape is current and publicly accessible
13. We inform the region about our offer
14. Our place promotes itself outside
15. We are well informed

## The Assessments of Study Courses Influence on the Assessments of Qualification Work

**Oskars Rasnacs**<sup>1</sup> MSc. math.; **Maris Vitins**<sup>2</sup> Dr. sc. comp.  
Red Cross Medical College of Riga Stradins University, Latvia<sup>1</sup>;  
University of Latvia, Faculty of Computing, Latvia<sup>2</sup>  
[oskars.rasnacs@inbox.lv](mailto:oskars.rasnacs@inbox.lv)<sup>1</sup>; [maris.vitins@lu.lv](mailto:maris.vitins@lu.lv)<sup>2</sup>

**Abstract.** The assessments of qualification work at the Red Cross Medical College of Riga Stradins University (RCMC of RSU) and other colleges and universities are influenced by the assessments of definite study courses. It was important to revise the connection of the study course themes with the qualification work. The aim of the research was to find out whether the assessment of Information Technologies and Statistics as well as other study courses affected the assessment of qualification work. There were 1,064 graduates of the RCMC of RSU from 2005 to 2016 inspected by the college documents. The calculations were performed in MS Excel environment. At first, the Pearson correlation coefficients were calculated between the assessments of courses and qualification work. Then, the users were given the opportunity to choose courses to create a regression model in order to predict the assessment of qualification work. Predictions of the assessments of graduates of 2016 were carried out, and the results of the predictions were compared to the real results. The errors were calculated for the difference of predictions and real results. In the course of time, more and more graduates' data are aggregated. The models are updatable with MS Excel Visual Basic codes. The research shows evidence that it is necessary to review the connection between the course themes affecting the result of the assessment of qualification work.

**Keywords:** information technologies, qualification work, study courses, university education.

### Introduction

The main objective of higher educational establishments is to train highly educated specialists (Professional standards, 2010). They are searching for ways to improve the study quality (Dosbergs, 2011). Nowadays, most important skills in the labour market are skills of information technologies and statistics. There are several criteria how to evaluate the new specialist qualification. One important criterion, how to measure the specialist qualification, is the final work defense results. Also, criteria are the assessments of study courses.

At the RCMC of RSU (RCMC of RSU Study programs, 2016) you can acquire the first level higher professional medical education in Medicine and Nursing. The RCMC of RSU is also interested in the improvement of study quality. One of the study quality criteria is the result of qualification work (RSU SKMK kvalifikācijas darba..., 2015). RCMC of RSU is interested in knowing whether it is possible to predict the assessment of qualification work by the assessments of study courses. Important courses related to the qualification work and profession are Information Technologies (IT) and Statistics. Taking into consideration that themes of the qualification work are diverse, assessments in other study courses may affect the assessment of the qualification work.

**Aim of the research.** Predict the assessment of qualification work at the RCMC of RSU knowing assessments of IT and statistics, and other influencing courses.

**Hypothesis of the research.** The assessments of Informatics and Statistics, and courses of specialties have a statistically significant effect on the assessment of qualification work.

### Objectives of the research

1. To determine whether the assessments of Informatics and Statistics at the RCMC of RSU during the period of 11 years from 2005 to 2015 have a statistically significant effect on the assessments of qualification work.
2. If the effect is statistically significant, then create linear and logarithmic mathematical models by the data of 2005 - 2015 in order to predict the assessment of qualification work depending on the assessments of Informatics and Statistics courses separately for the Medicine and Nursing specialties, as well as in total for students of both specialties.
3. To approve the obtained mathematical models (objective 2) for the newest/latest data of 2016 available and draw a conclusion which of the models is the best to obtain most precise predictions.



4. To select two study courses from the Nursing and Medicine specialties separately which have the highest correlation coefficients and which have a statistically significant effect on the assessment of qualification work.
5. To create linear and logarithmic mathematical models by using the data of 2013-2015 in order to predict the assessment of qualification work depending on the two selected (objective 5) study courses from the Nursing and Medicine specialties separately.
6. To approve the obtained mathematical models (objective 6) for the data of 2016 and draw a conclusion which of the models is the best to obtain most precise predictions.

## Methodology

In Latvia, courses and qualification work are assessed with a 10-point grading scale. The higher is the assessment, the higher is the level of knowledge and skills.

MS Excel was used for the data analysis for two reasons:

- availability;
- models are updatable with macro and Visual Basic code.

The authors have analyzed assessments as quantitative data. First of all, it was found out whether the assessments correspond to a normal distribution. According to the Kolmogorov – Smirnov test, almost all of the data used for creating models and their approval, did not correspond to a normal distribution ( $p < 0.05$ ). The only exception was the assessments of qualification work of the Nursing graduates of 2016 ( $p = 0.112$ ). That is why a nonparametric statistic was applied (Teibe, 2007; Moore, 2007). The statistical indices are shown in a Boxplot graph (Figure 1).

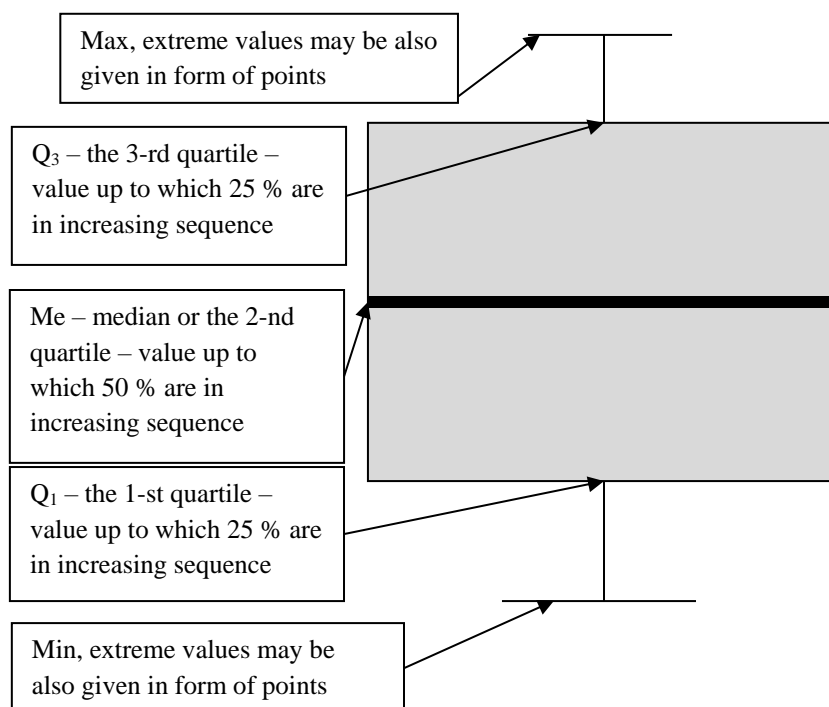


Figure 1. Boxplot structure.

Models were created by applying assumptions as follows:

1. In Latvia, the academic grading system is a 10-point scale where 4 is the lowest passing grade, and 10 is the highest achievable grade. In order to be allowed to work out a qualification work, a student must have at least 4 in all courses.
2. In order to create a predictable model, a failed grade was denoted 3.
3. In order to attach the model to the starting point of coordinates, the assessments were subtracted 3, and when subtracting 3 from the failed grade 3, the outcome is 0 (Data Analysis/Regression/option Constant is zero).
4. Logarithms were applied in models to approximate the data to a normal distribution.

5. Logarithms were applied in expressions by subtracting 2 from the failed assessment 3 to obtain 0;  $\ln(3-2)=\ln 1=0$ .
6. By applying the above mentioned assumptions, models were created in MS Excel environment with a tool Data Analysis/Regression.

## Results and discussion

The descriptive statistics indices of the data used for the model creation are shown in Figure 2.

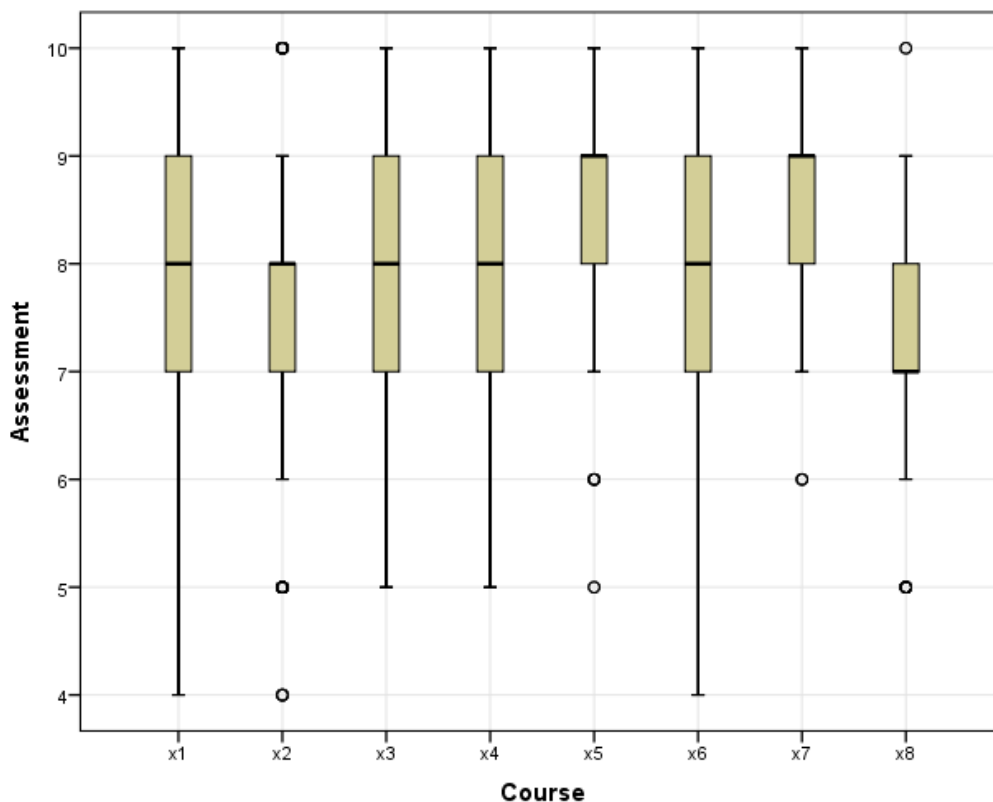


Figure 2. The descriptive statistics indices of the data used for the model creation.

In the graph (Figure 2), the descriptive statistics indices are shown for the following assessments:

- $x_1$  – assessments of qualification work of 524 graduates of Nursing and 415 graduates of Medicine speciality (in total 939), data from 2005 to 2015;
- $x_2$  – assessments of IT and Statistics of 524 graduates of Nursing and 415 graduates of Medicine speciality (in total 939), data from 2005 to 2015;
- $x_3$  – assessments of qualification work of the graduates of Medicine speciality ( $n=149$ ), data from 2013 to 2015;
- $x_4$  – assessments of Propaedeutic and Radiology courses of the graduates of Medicine speciality ( $n=149$ ), data from 2013 to 2015;
- $x_5$  – assessments of qualitative research into Health Care course of the graduates of Medicine speciality ( $n=149$ ), data from 2013 to 2015;
- $x_6$  – assessments of qualification work of the graduates of Nursing speciality ( $n=188$ ), data from 2013 to 2015;
- $x_7$  – assessments of Practical Training of the graduates of Nursing speciality ( $n=188$ ), data from 2013 to 2015;
- $x_8$  – assessments of Anatomy, Cytology and Genetics courses of the graduates of Nursing speciality ( $n=188$ ), data from 2013 to 2015.

The descriptive statistics indices of the graduates of 2016 data used for the approval of models are given in Figure 3.

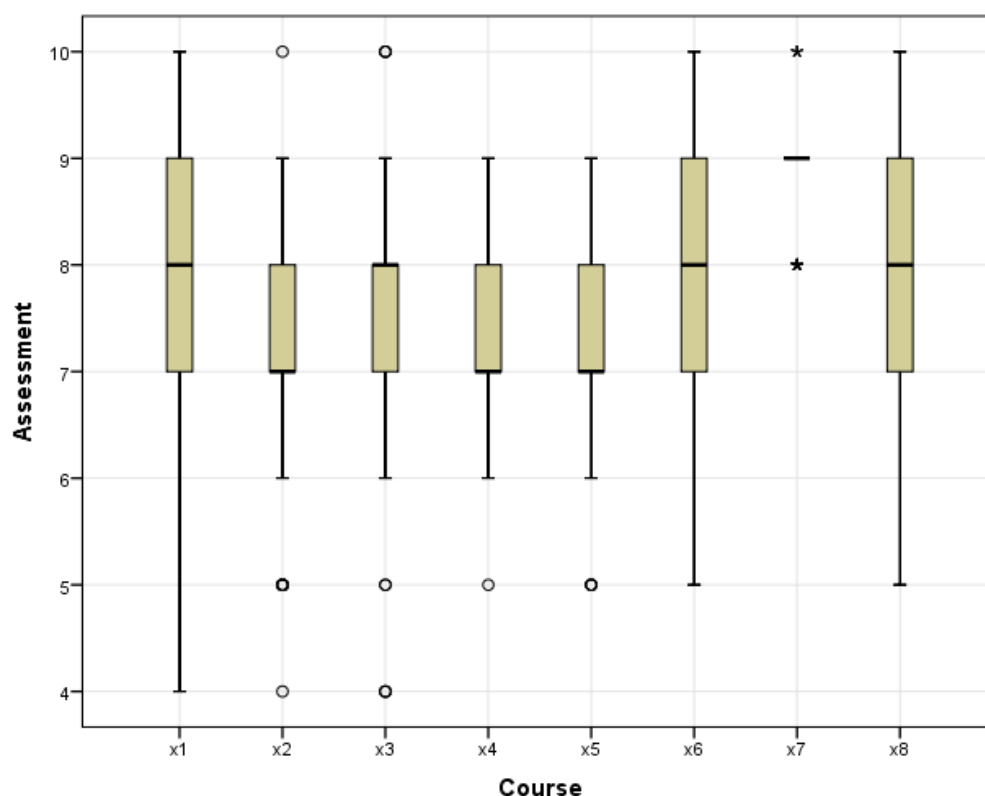


Figure 3. The descriptive statistics indices of the graduates of 2016 data used for the approval of models.

In the graph (Figure 3), the descriptive statistics indices are shown for the following assessments in 2016:

- $x_1$  – assessments of qualification work of 49 graduates of Nursing and 53 graduates of Medicine speciality ( $n=102$ );
- $x_2$  – assessments of IT and statistics of 49 graduates of Nursing and 53 graduates of Medicine speciality ( $n=102$ );
- $x_3$  – assessments of qualification work of the graduates of Medicine speciality ( $n=48$ );
- $x_4$  – assessments of Propaedeutic and Radiology courses of the graduates of Medicine speciality ( $n=48$ );
- $x_5$  – assessments of qualitative research into Health Care course of the graduates of Medicine speciality ( $n=48$ );
- $x_6$  – assessments of qualification work of the graduates of Nursing speciality ( $n=49$ );
- $x_7$  – assessments of Practical Training of the graduates of Nursing speciality ( $n=49$ );
- $x_8$  – assessments of Anatomy, Cytology and Genetics courses of the graduates of Nursing speciality ( $n=49$ ).

The graphs (Figure 2 and Figure 3) indicate that students at the RCMC of RSU have good knowledge in all courses that are included into the models. Median of the assessments is at least 7 points.

At first, the models were written in the form as they were created with MS Excel tool Data Analysis/Regression. Then, they were transformed by simplifying the model expressions.

Models 1 and 2 were created by using the data of 524 graduates of Nursing speciality and 415 graduates of Medicine speciality from 2005 to 2015, in total 939 graduates.

$$y-3=1.009(x-3) \text{ or } y=1.009x-0.027, R^2=0.927 \quad (1)$$

$$y-3=2.802(\ln(x-2)) \text{ or } y=2.802(\ln(x-2))+3, R^2=0.943 \quad (2)$$

where  $y$  - assessments of qualification work,  
 $x$  - assessments of IT and Statistics,  
 $t$  - test  $p < 0.001$ .

Models 1 and 2 were approved of 49 graduates of Nursing speciality and 53 graduates of Medicine speciality of 2016, in total 102 gradates. Predictions by models 1 and 2 are shown in Figure 4.

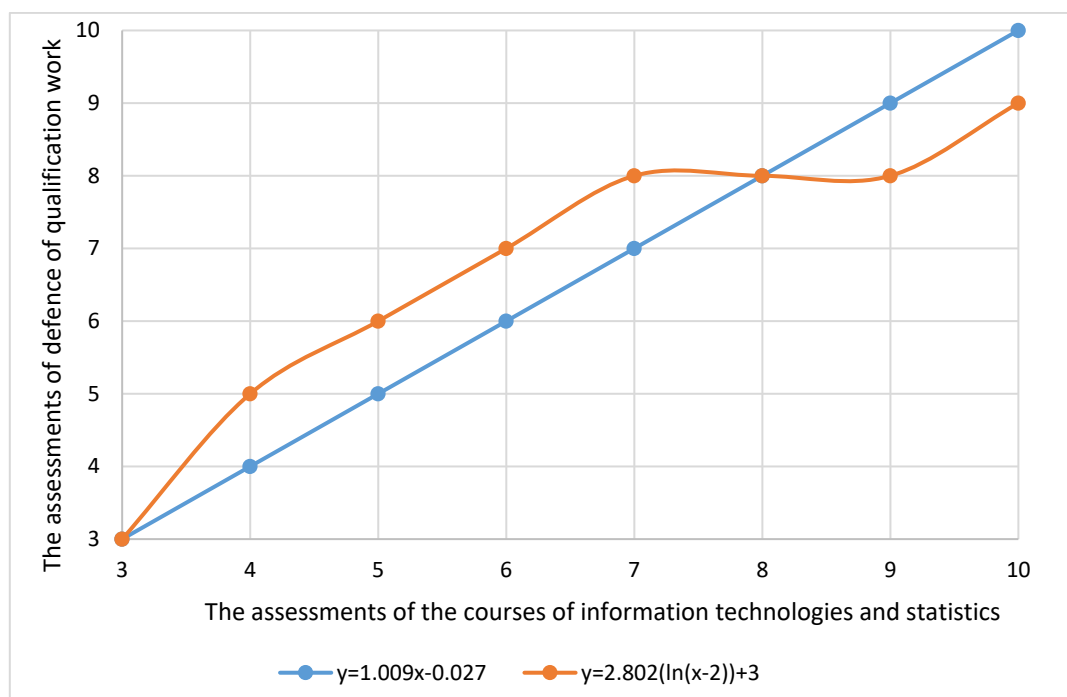


Figure 4. Predictions of the assessments of qualification work by linear and logarithmic models.

The linear model has predicted the same assessments of qualification work as IT and Statistics courses. The logarithmic model, by contrast, has predicted a slightly higher assessment of qualification work while assessments of IT and Statistics are lower. For the high assessments of IT and Statistics courses the logarithmic model has predicted a slightly lower assessment of qualification work.

Models 3 and 4 were created by using the data of 524 graduates of Nursing speciality from 2005 to 2015.

$$y-3=1.014(x-3) \text{ or } y=1.014x-0.042, R^2=0.923 \quad (3)$$

$$y-3=2.821(\ln(x-2)) \text{ or } y=2.821(\ln(x-2))+3, R^2=0.941 \quad (4)$$

where  $y$  - assessments of qualification work,  
 $x$  - assessments of IT and statistics,  
 $t$  - test  $p < 0.001$ .

Models 3 and 4 were approved by using the data of 49 graduates of Nursing speciality of 2016.

Models 5 and 6 were created by using the data of 415 graduates of Medicine speciality from 2005 to 2015.

$$y-3=1.003(x-3) \text{ or } y=1.003x-0.009, R^2=0.932 \quad (5)$$

$$y-3=2.777(\ln(x-2)) \text{ or } y=2.777(\ln(x-2))+3, R^2=0.947 \quad (6)$$

where  $y$  - assessments of qualification work,  
 $x$  - assessments of IT and statistics,  
 $t$ -test  $p < 0.001$ .

Models 5 and 6 were approved by using the data of 53 graduates of Medicine speciality of 2016.

Models 7 and 8 were created by using the data of 149 graduates of Medicine speciality from 2013 to 2015.

$$y-3=0.481(x_1-3)+0.447(x_2-3) \text{ or } y=0.481x_1+0.447x_2+0.216, R^2=0.939 \quad (7)$$

$$y-3=1.343(\ln(x_1-2))+1.317(\ln(x_2-2)) \text{ or } y=1.343(\ln(x_1-2))+1.317(\ln(x_2-2))+3, R^2=0.942 \quad (8)$$

where  $y$  - assessments of qualification work,  
 $x_1$  - assessments of propaedeutic and radiology courses,  
 $x_2$  - assessments of qualitative research into health care course,  
 $t$ -test  $p_{11} < 0.001$ ,  $p_{12} = 0.003$ ,  $p_{11} = 0.005$ ,  $p_{12} = 0.005$ .

Models 7 and 8 were approved by using the data of 48 graduates of Medicine speciality of 2016.

Models 9 and 10 were created by using the data of 188 graduates of Nursing speciality from 2013 to 2015.

$$y-3=0.611(x_1-3)+0.356(x_2-3) \text{ or } y=0.611x_1+0.356x_2+0.099, R^2=0.946 \quad (9)$$

$$y-3=1.357(\ln(x_1-2))+1.501(\ln(x_2-2)) \text{ or } y=1.357(\ln(x_1-2))+1.501(\ln(x_2-2))+3, R^2=0.943 \quad (10)$$

where  $y$  - assessments of qualification work,

$x_1$  - assessments of practical training,  
 $x_2$  - assessments of anatomy, cytology and genetics courses,  
 t-test  $p_{11}<0.001$ ,  $p_{12}<0.001$ ,  $p_{21}<0.001$ ,  $p_{22}<0.001$ .

Models 9 and 10 were approved by using the data of 49 graduates of Nursing speciality of 2016. Mean errors of predictions are shown in Table 1.

Table 1

**Mean errors of predictions (%)**

Model	Nursing+Medicine	Nursing	Medicine
1	18.1	14.1	21.7
2	15.6	11.8	19.0
3	-	14.1	-
4	-	11.8	-
5	-	-	21.7
6	-	-	19.4
7	-	-	16.1
8	-	-	15.6
9	-	12.7	-
10	-	13.8	-

In the present article, only some examples of predicting assessments of qualification work are discussed. It is possible to create similar models with assessments of other courses that have a statistically significant effect on the assessments of qualification work. It may come true that in another period other courses might affect statistically significant the assessment of qualification work. Therefore the models are envisaged to be updated in the course of time at the RCMC of RSU.

### Conclusions

1. The assessments in Informatics and Statistics at the RCMC of RSU during the period of 11 years from 2005 to 2015 have a statistically significant effect on the assessments of qualification work.
2. The linear and logarithmic mathematical models are by the data of 2005-2015 in order to predict the assessment of qualification work depending on the assessments in Informatics and Statistics courses separately for the Medicine and Nursing specialities and in total for students of both specialities.
3. The obtained mathematical models (objective 2) were approved for the newest/latest data of 2016 available; the logarithmical model gives more precise predictions.
4. The assessments of Propaedeutic and Radiology courses and Qualitative Research into Health Care course influence the assessments of qualification work of Medicine speciality; The assessments of Practical Training and Anatomy, Cytology and Genetics courses influence the assessments of qualification work of Nursing speciality.
5. The linear and logarithmic mathematical models by using the data of 2013-2015 in order to predict the assessment of qualification work depending on the two selected (objective 5) study courses from the Nursing and Medicine specialities separately are created.
6. The logarithmical model gives more precise predictions for Medicine speciality. The linear model gives more precise predictions for Nursing speciality.
7. There is no need to create separate predictive models of qualification work assessments for Nursing and Medicine specialities depending on the assessments of informatics and statistics courses because the coefficients and prediction results are almost equal.

8. Logarithms were applied for the assessments of courses in order to obtain a compliance with normal distribution and more precise predictions; an exception is model 10 – prediction of the assessments of qualification work of the Nursing graduates depending on the assessments of Practical Training, Anatomy, Cytology and Genetics courses.
9. Over time, more and more data are available and recommended to work on the models' development; to introduce them more and more factors.
10. For the courses which most influence the assessments of qualification work to recommend professors to review content of the courses.

## Bibliography

1. *Profesiju standarti (Professional Standards)*. (2010). MK noteikumi Nr. 461. [online] [14.11.2016]. Available at [http://www.lm.gov.lv/upload/darba\\_devejiem/profesiju\\_standarti.pdf](http://www.lm.gov.lv/upload/darba_devejiem/profesiju_standarti.pdf) (in Latvian)
2. *RCMC of RSU Study Programs*. (2016). Red Cross Medical College of Riga Stradins University. [online] [14.11.2016]. Available at <http://www.rcmc.lv/en/study-programs/>
3. *RSU SKMK kvalifikācijas darba izstrādāšanas un aizstāvēšanas noteikumi (The Rules of Development and Defence of Qualification Work in RSU RCMC)*. (2015). RSU Sarkanā Krusta medicīnas koledžas direktora rīkojums Nr. 1-8/90. [online] [14.11.2016]. Available at [http://www.rcmc.lv/wp-content/uploads/2012/06/KD\\_aizst%C4%81v%C4%93%C5%A1anas-nosac%C4%ABjumi\\_2015.docx](http://www.rcmc.lv/wp-content/uploads/2012/06/KD_aizst%C4%81v%C4%93%C5%A1anas-nosac%C4%ABjumi_2015.docx) (in Latvian)
4. Dosbergs D. (2011). *Studiju programmas kvalitātes novērtēšana*. Promocijas darbs (*Evaluation of Quality of Study*. PhD Thesis). Riga, Latvia: University of Latvia, pp. 71 – 76. (in Latvian)
5. Teibe U. (2007). *Bioloģiskā statistika (Biological Statistics)*. Rīga: LU Akadēmiskais apgāds, 27 p. (in Latvian).
6. Moore D. S. (2007). *The Basic Practice of Statistics*. (4th ed.). New York: W. H. Freeman and Company. [online] [14.11.2016]. Available at <https://pdfs.semanticscholar.org/84df/48f2e9808ea7a978fb8a8a426c392d8a02b7.pdf>

## Respecting Learner's Cognitive Interests in the Process of Choosing a Theme for the Latvian Language Learning in Primary School

Gunta Silīna-Jasjukeviča Dr. paed.

Riga Teacher Training and Educational Management Academy, Latvia

[gunta.silina-jasjukevica@rpiva.lv](mailto:gunta.silina-jasjukevica@rpiva.lv)

**Abstract:** The potential of a learner for acquiring significant themes in Latvian literature is never fully utilized. Latvian language learning in primary school is related to sociocultural contexts. Skillfully chosen themes connected to linguacultural expression are the initiators of the communication process and the development of a learner's personality. Theme-related text broadens a learner's experience of the world, helps to comprehend regularities in language and promotes the use of them in different types of communication situations, stimulates use of language according to linguistics and speech-related cultural norms, and encourages understanding of language significance in personality development. The study provides theoretical and empirical research on the value of choosing a theme in Latvian language learning in primary school according to a learner's cognitive interests, primarily from perspective of a lingua communicative approach and a learner's active participation in the process of learning. The study was based on the qualitative design. Interview with school students of Grade 2-6 (in total 304) was organized over the period from March to April 2016. 15 classes were chosen randomly in institutions of basic education in the regions of Latvia, including three 2<sup>nd</sup> years, three 3<sup>rd</sup> years, three 4<sup>th</sup> years, three 5<sup>th</sup> years and three 6<sup>th</sup> years. Fifteen 3<sup>rd</sup> year students of the Pre-school and Primary School Teacher Professional Bachelor's Degree Programme of Riga Pedagogy and Education Management were involved in the collection of the data, who conducted a survey among pupils during their pedagogical practice. In total 162 girls and 142 boys participated in research. First year pupils were not included in the survey because the data were to be provided in writing. The pupils who participated in the survey were invited to express their opinion regarding two questions. The collected data were analysed quantitatively and qualitatively. The results from this study show that respecting a learner's cognitive interests, particularly ensuring participation in choosing a theme for a Latvian language lesson, is carried out episodically.

**Keywords:** language learning in primary school, cognitive interest, lingual-culture-oriented theme.

### Introduction

The Guideline issued by the Ministry of Education and Science of the Republic of Latvia for years 2014 – 2020 highlights the idea of education “as an organic component of our daily life – a deliberate choice and a hobby and not a burden or disappointment” (Education Guideline 2014 – 2020, 2013, 13). The highlights include the necessity to from teaching to learning, from authoritarianism to democracy, from a teacher-centred approach to a student-centred approach, from passive participation to active involvement. “To be able to assure that people are ready to live and work in such dynamic time, education must be able to provide a maximum individualised environment for studying. Particularly, individualised approach is one of the biggest challenges in education” (Education Guideline 2014 – 2020, 2013, 96-97).

Similar ideas can be found in the Sustainable Development Strategy of Latvia for year 2030, which emphasises the idea of human ecology, the meaning of their aims, values, freedom, independence and responsibility in education (Latvijas ilgtspējīgas attīstības stratēģija, 2010).

The lingual-communicative approach is becoming more popular in language studies in the primary school in Latvia. According to this approach, improvement of communication, language, socio-cultural competence is moved to the foreground in the process of language studies. Key value in the process of language studies is assigned to the social and personal aspects of communication. A lingual-culture-oriented topic in language lessons is used as a trigger of speech activity and as a means for the acquisition of the cultural values implied in a language (Vulāne, Gavriļina, 2008; Anspoka, Tūbele, 2015).

As known, a language is not only a means for an individual's thinking, self-expression and communication in the process of learning the world, a language is “a symbolic form of existence of an individual which links the individual with the epoch, nation and tradition” (Humbolts, 1985, 9).

Personally significant learning is widely discussed idea in pedagogical and psychological researches (McWilliam, Taylor, 2012; McNeil, Reeder, 2012; Freiberga, 2013; Yeager, Henderson, 2014). The activity, action and behaviour of a school student are triggered and regulated by motives underlain by the individual's willingness to learn about and understand themselves and the world around them.

Action theory points to activity and meaningful participation as an important aspect of student learning. The relationships between the need to learn, motive for getting involved in an activity and achievement of the target make the sense of activity. The motive regulates the behaviour of the individual, shapes the attitude towards the subject of the activity, satisfies the need for attainment of the target (Wells, 2001; Леонтев, 2005; McNail, 2012).

The personality development theories highlight the idea that, in the early school age, the cognitive interests of the pupil are associated with the sociocultural environment (Bronfenbrenner, 2005; Rogoff, 2003). "Cognition, as a certain status of mental tension, involves effort, risk and uncertainty. In cognition, the individual assumes responsibility because they are the unique being in the world which strives for knowledge in line with their will" (Kūlis, Kūle, 1998, 538). Cognitive activity emerging from the pupil's own initiative, includes activity – studying, analysis, explanation of an object. The personal relevance of the acquired knowledge is increased by the emotional experience, thus identifying it as a subjective value (Dewie, 1979). Via personal sense, publicly relevant norms and cultural values concretise in the pupil's consciousness and become motives for their action and behaviour (Freiberga, 2013).

Pupil's cognitive interests and personally meaningful involvement into learning is a valuable learning tool for teachers. Carefully chosen theme and active participation involves providing opportunities for pupils to meaningfully talk and listen, write, read, and reflect on the content, ideas, issues, and concerns of an academic subject (Meyer, Jones, 1993). Found out, understood in a personally significant context, the content of language studies facilitates formation of sustained knowledge and skills.

The aim of the article – to investigate the cognitive interests of the younger school age children theoretically and empirically and to promote the discussion regarding respecting them in opting for the lesson topic in the process of Latvian language studies in primary school.

## Methodology

The study was based on the qualitative design. Interview with school students of Grade 2-6 (in total 304) was organized over the period from March to April 2016. 15 classes were chosen randomly in institutions of basic education in the regions of Latvia, including three 2<sup>nd</sup> years, three 3<sup>rd</sup> years, three 4<sup>th</sup> years, three 5<sup>th</sup> years and three 6<sup>th</sup> years. Fifteen 3<sup>rd</sup> year students of the Pre-school and Primary School Teacher Professional Bachelor's Degree Programme of Riga Pedagogy and Education Management were involved in the collection of the data, who conducted a survey among pupils during their pedagogical practice. In total 162 girls and 142 boys participated in research. Year 1 pupils were not included in the survey because the data were to be provided in writing.

The pupils who participated in the survey were invited to express their opinion regarding two questions:

- 1) How often does your teacher involve the pupils in choosing the topic for the Latvian language lesson?
- 2) What would you like to think, read and write about in your Latvian language lessons?

Three alternative responses were proposed to the pupils as replies to the first question: often, rarely, almost never. In their response to the second question, the pupils were to describe their cognitive interests in a free form, defining the issues they are interested in. The collected data were analysed quantitatively and qualitatively.

## Results and discussions

Several problems were identified during the analysis of the pupils' experience with regard to their involvement in the selection of the Latvian language lesson topics. What caught attention primarily was the fact that after asking Question 1, the pupils in seven classes involved in the study, one school student from 3<sup>rd</sup> year, one from 4<sup>th</sup>, two from 5<sup>th</sup>, three from 6<sup>th</sup>, were surprised about the possibility to be involved in choosing the lesson topic (Figure 1). The quantitative evaluation of the data and analysis thereof according to the personality development theories, which highlight the conclusion that the need



for personally significant cognitive activity and activity in the process of studies prevail in the younger school age (Vigotskis, 2002; Rogoff, 2003; Cummins, Brown, 2007; McWilliam, Taylor, 2012), revealed that pupils are hardly ever or never involved in the choice of their Latvian language lesson topics.

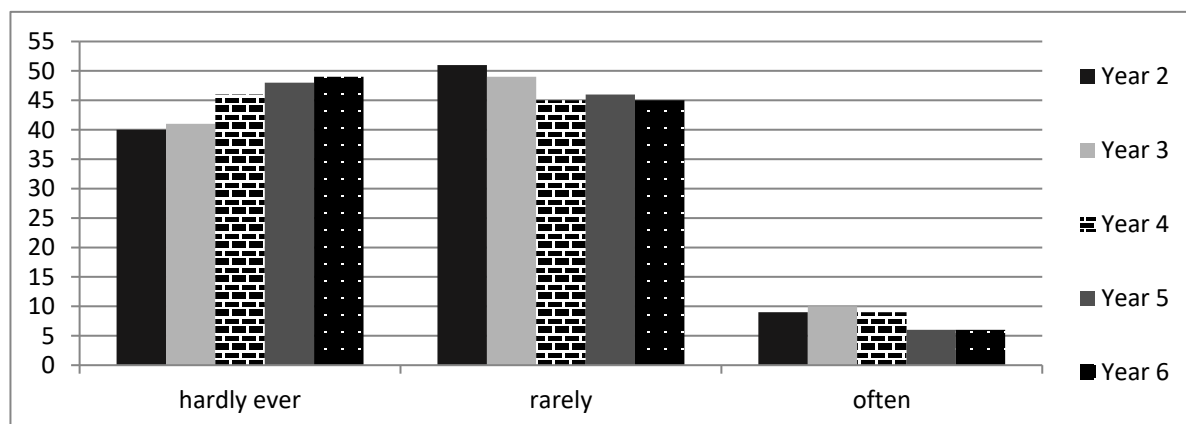


Figure 1. The answers of the respondents to the question “How often does your teacher involve the school students in choosing the topic for the Latvian language lesson?”

It is possible that seeing the school student’s initiative as a significant resource in learning/teaching is challenged in Latvia by the strongly established lingual-didactic traditions, such as use of the content of studies and the corresponding methodology developed within the framework of the structural approach in language teaching/learning in elementary school.

In the structural approach, the central element is the teacher who always knows best what the pupil wants to know and also in what sequence the pupil should acquire the content of their studies. The approach is mainly oriented at regulated learning about language. Uncritical “completion” of the course-books available at the school can often be seen in the pedagogical practice.

Teachers spend a lot of energy on planning measures to facilitate motivation in order to make their pupils interested in topics which are not topical or personally relevant for them. Consequently, the pupil learns about the language instead of widening their experience about the world within a topic which is significant for them and, in association with it, meaningfully discovering the regularities existing in the language subsystems – phonetics, vocabulary, word-building, morphology, syntax and stylistics. According to the linguocommunicative approach, a Latvian language lesson topic which corresponds to the cognitive interests of the pupils offers a natural, and not an artificially created context for language studies. The cognitive interest of the pupil becomes a natural motivator for learning activity. As known, grammar is not an isolated language phenomenon, it exists in association with the use of the language in a particular situation. The individual deals with their significant topics by learning to use the literary pronunciation and spelling standards meaningfully. The acquisition of language regularities within a topic which is significant for the pupil alleviates the degree of cognitive complexity of the content of studies and provides the studies with a wider, life-related context (Vigotskis, 2002; Cummins, Brown, Sayers, 2007; Anspoka, Tūbele, 2015). The lexical and grammatical role of sounds, letters, words, sentences and texts can be meaningfully understood in a concrete situation in which they are used.

To investigate the cognitive interests of the younger school age children, the pupils were asked to answer the 2nd question of the survey. The pupils were to state topics to be explored which are significant for them and which they would willingly think, read, write about or discuss during their Latvian language lessons. According to the theories regarding the development of an individual in interaction with nature, society, culture (Bronfenbrenner, 2005; Rogoff, 2003; Humbolts, 1985), there are 3 significant thematic blocks in study curricula: human – nature; human – society; human-human. “Within a topic, the pupil learns to use language as a means of thinking, the systemic acquisition of the grammar of the language and understandings of the use of the language in various communication situations are easier within a topic” (Anspoka, Tūbele, 2015, 73).

The obtained data were analysed quantitatively, by structuring (according to percentage) the proposals of the pupils into 3 thematic blocks: human - nature, human - society, human - human (Figure 2).

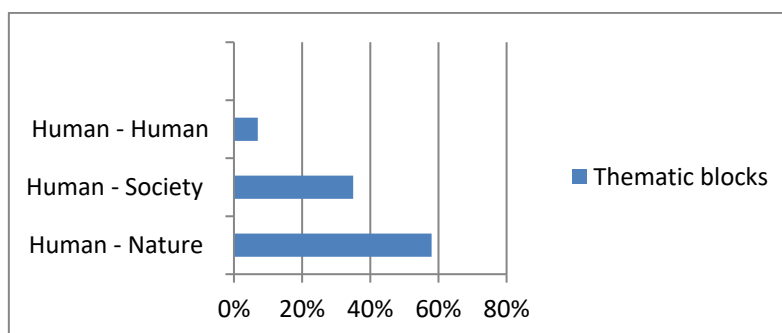


Figure 2. School students' cognitive interests by thematic blocks, percentages.

Then generalization was undertaken by grouping codes with similar meaning into one category (Mayring, 2007; Saldana, 2012). The Table 1 and Table 2 summarises the generalisations (categories) characteristic to the thematic block and the topics offered for exploration which reflect the interests of the pupils.

Table 1

**The themes, which the school students prefer according to block *human-nature***

Categories	Examples of school students' responses
Outer space	<i>I would like to learn more about the outer space.</i> <i>What is the black hole?</i> <i>If there is a black hole, is there a white one?</i> <i>If there was nothing in the beginning, how did the Big Bang occur?</i> <i>How did the world appear?</i> <i>How did people appear?</i> <i>How many worlds are there?</i> <i>How did sky appear?</i> <i>What is the Universe, the Sun and the Moon?</i> <i>How hot is the Sun?</i> <i>How did the Earth appear?</i> <i>I want to know about all planets, their names!</i> <i>What is the black hole?</i> <i>Are there people on other planets?</i> <i>How did the Moon appear?</i> <i>Is there life in the outer space, on what planet?</i>
Categories	Examples of school students' responses
The beginnings / origination of the World	<i>I want to learn about the ocean and the animals living there!</i> <i>How do bees fly?</i> <i>How did Lake Vilcumuižas appear? How did lakes, bogs, water and many people appear?</i> <i>How did the first animal appear? I want to know more about exotic animals living in other countries.</i> <i>How is milk made?</i> <i>How do precious stones and volcanos form?</i> <i>Why do cats purr?</i> <i>Are there any cave men in 2016?</i>
Experiments	<i>I want to know what happens if sugar, salt and petrol are mixed together. Will there be an explosion?</i> <i>I want to know what will happen if we go out and water flowers? How to grow flowers?</i> <i>How to make kvass, colour pencils and sulphuric acid</i> <i>How to make various items? How to make soap so that it floats? How are pasta, jelly cake with berries made?</i> <i>How long does it take to get tree sap?</i> <i>How are vitamins and medicines made?</i>

Categories	Examples of school students' responses
	<i>How is milk made?</i> <i>How does one invent a complex thing?</i> <i>How to swing? How is electricity made? How to make paint? How to purify dirty water?</i>
Human constitution	<i>How does my body look from inside?</i> <i>Why do humans have hair?</i> <i>Why do people not have wings?</i> <i>What are the parts of the body?</i>
Future	<i>What will I look like in 20 years?</i> <i>Who will be my wife?</i> <i>What will the world be like in the future?</i> <i>When the Sun explodes in the future, will the world go into the black hole? Will it be possible to live on other planets? Will the Sun destroy our planet?</i>
Healthy lifestyle	<i>What do E-substances mean in food?</i> <i>Why do teeth ache?</i> <i>How to live long?</i>
Science and technologies	<i>How to learn to multiply?</i> <i>I want to know everything about chemistry. I like making experiments. I even made an experiment at home! Regardless of some trouble, it was great fun!</i> <i>How to design a car?</i> <i>How to program?</i> <i>How does water get to the tap from a well?</i> <i>I want to find out about chemistry sooner!</i> <i>How to make a laser sword?</i> <i>I want to learn how to use multiplication and division.</i> <i>How do such heavy-weight aeroplanes hold up in the air?</i>
God	<i>I want to know about God!</i> <i>Does God exist?</i> <i>How did God appear?</i> <i>Where does God get strength from?</i> <i>If one does not believe God, will they go to hell?</i> <i>Is God real?</i> <i>What did God appear from?</i>

The school students involved in the survey are very good at stating the topics they are interested in. Only 4 % find it difficult, mainly due to spelling/orthography difficulties. A more in-depth investigation revealed that they are mainly school students of the second year. 64 % of the school students demonstrate versatile interests by offering various sets of topics to be explored. As can be seen in the Table 1 and Table 2, the percentage for the cognitive interests of pupils is for the thematic block "Human – Nature" (Table 1) and "Human- Society" (Table 2). The younger school age pupils are least interested in topics related to relationships (Table 3). It should, of course, be taken into account that, according to the conclusions drawn by psychologists, there are two types of cognitive interests – situational and sustainable interest. By purposefully selected techniques, situational, spontaneous and unconscious cognitive interest of the pupil may be turned into sustainable. Situational interest is spontaneous, transient and associated with external impulses and their soon satisfaction. Sustainable interest implies the individual's ability to set cognisable topics which are significant for them and motivation to satisfy the cognitive need (Schraw, Flowerday, 2001). Examples of sustainable interests of the school students can be seen in 42 % of the responses provided by the respondents. Most of the responses have been received from school students of years 4, 5 and 6. School students state their essential questions in greater detail by asking additional questions, such as "*Will I be a millionaire? What should be done to earn well? How can money be washed? How is money produced?*"; "*I would like to know more about chemistry. I like making experiments. I even made an experiment at home! Regardless of some trouble, it was great fun!*"; "*I would like to learn more about the outer space. What is the black hole? If there is a black hole, is there a white one? Can a human breathe in the outer space without a space-suit?*" The sets of questions offered by the school students associated with one topic allow to assume that the

topic has not attracted the pupil's interest incidentally, they have been thinking about it, and the question they have asked attracts them from various aspects.

Table 2

**The theme, which school students prefer according to block *human - society***

Categories	Examples of school students' responses
History	<i>I am interested in ancient things and events. I want to learn about history because one can learn many new things from the ancient times.</i> <i>If someone was punished in the ancient times, was the punishment always fair?</i> <i>In what year did the first television appear?</i> <i>What ancient items have been found in our town?</i> <i>How much time has passed since the appearance of Czech Republic?</i> <i>How was it in Latvia in 1932?</i> <i>Why did dinosaurs die out?</i> <i>How did the USSR appear?</i> <i>History of music because that is what I know much about already.</i>
Language learning	<i>I want to learn other languages to be able to understand foreign languages better.</i> <i>I want to learn how to understand animal language</i> <i>Why do nouns and adjectives differ? Why have parts of speech been invented at all if they are the same words anyway?</i> <i>What is the longest word in Latvian?</i> <i>How to understand a difficult text? How did people learn to speak?</i>
Countries/cultures	<i>I would like country lessons, I am interested in what people do in other countries?</i> <i>How many countries are there in the world? How did national flags appear? I am interested in world events. How many people are there in the world?</i>
Traditions/literature	<i>I want to know who invented these fantasies about Santa Claus and Tooth Fairy.</i> <i>What is Nikņiķis, is he and invented character, where does he live? Why do I need to know about him?</i> <i>How can rabbit dye eggs if my Mom dyes but kind of does not hide?</i> <i>Why do people dye eggs and swing on Easter?</i> <i>Why does Santa Clause not exist? Why are gifts given on Christmas?</i>
Culture/art	<i>I would like to learn more about the art of acting.</i> <i>I am interested in art, design of clothing!</i> <i>How to make cartoons?</i> <i>How to make decorations? I want to learn how to do filming!</i>
Economics	<i>Will I be a millionaire?</i> <i>How to earn well? How can money be washed? How is money produced?</i>
Sports	<i>I want to know about various types of sport. I am interested in hip-hop.</i> <i>Who is the best football player in the world?</i>
Professions	<i>How to become a logger?</i> <i>How to become a good basketball player?</i> <i>What do I need to do to become an artist?</i> <i>I would like to learn about lawyers!</i>

Table 3

**The theme, which school students prefer according to block *human relationship with others***

Categories	Examples of school students' responses
Relationship with family members	<i>How can you comfort a crying brother?</i>
Relationship with other people	<i>Why are some people bad?</i> <i>Why are there wars?</i> <i>Am I the only Tereze in the world?</i>

Categories	Examples of school students' responses
Relationship with teachers	<i>Why do teachers put marks?</i> <i>Why are you my teacher?</i> <i>What are the names of all the teachers in our school?</i> <i>Why does one need to do the homework given by the teacher?</i> <i>Why does one need to learn?</i>

Involvement of school students in choosing the topics for their Latvian language lessons is essential for various reasons. Primarily, it is an opportunity for the pupil to get experience in cooperating with the teacher and other pupils by getting assurance that their thoughts, ideas and proposed topics are a valuable and relevant resource for meaningful learning activities during lessons. The topic allows to create meaningful and purposeful interaction through language by offering versatile, communicative tasks in order to achieve a cognition target which is relevant for the pupil. Pupils should, of course, be involved in choosing the topics regularly. Systematic involvement of the pupil in planning the content and process of their studies creates a supportive, encouraging space that helps student feel comfortable to ask question that interested and important for him, to understand that learning is living.

Secondly, the identification of the pupils' ideas makes it easier for the teacher to develop the thematic plan based not only on the acquisition of the content of language studies, but provides opportunity for cross curricular learning. In such studies, the content of language studies and studies of other subjects becomes a means of dealing with issues which are relevant for the pupils and have socio-cultural significance (Moore, 2012). As it was mentioned, research shows that the cognitive interests of younger school age children are mainly associated with various topics related to natural sciences. According to the linguocommunicative approach, a real-life topic serves as a stimulus for language studies. Within a topic which is relevant for them, a pupil can learn to see and state problem-oriented questions, learn to use various sources of information and types of gathering information, acquire types of reading, various reading strategies, learn about the principles for analysis of texts of various genres and styles, improve their experience in summarising and structuring information for their needs as well as to present it to others and evaluate the accomplished within the context of a target which is significant for them. In accordance with the topic, lingua-culture oriented text broadens a learner's experience of the world, helps to comprehend regularities in language and promotes the use of them in different types of communication situations, stimulates use of language according to linguistics and speech-related cultural norms, and encourages understanding of language significance in personality development. On the level of a word, the pupil can meaningfully widen their vocabulary by learning concepts and terms which are essential in understanding the topic, can learn to use sources of reference to find out details about the meanings of words, perceive and understand the meanings of words in various contexts, and include them in their spoken and written language in communication situations adequately.

A topic which is significant for the pupil helps to see and understand why it is necessary to learn, and, thus, the willingness to learn arises out of an activity initiated by themselves. The pupil does not learn to acquire knowledge and skills, but acquires knowledge and skills in order to live to the utmost. Being aware of their cognitive interests influences the self-regulation of the actions and behaviour of the pupil and facilitates the formation of in-depth learning experience.

## Conclusions

Respecting the pupil's individuality and their cognitive interests is a significant resource in the acquisition of the content of Latvian language studies in primary school. The study provides theoretical and empirical research on the value of choosing a theme in Latvian language learning in primary school according to a learner's cognitive interests, primarily from perspective of a lingua communicative approach and a learner's active participation in the process of learning. The results from this study show that respecting a learner's cognitive interests, particularly ensuring participation in choosing a theme for a Latvian language lesson, is carried out episodically. The potential of a learner for acquiring significant themes in Latvian literature is never fully utilized.

The conclusions drawn in the study suggest further theoretical and empirical research studies. One of the questions is cooperation and the initiative of a pupil in an open process of studies are to assure

formation of a systemic idea regarding the structure of a language? It would be useful to study the experience of teachers and analyse the content of study aids offered by various publishers from the point of view of pupils' cognitive interests. Thinking about the topical issues associated with the reforms in education (development of competence-based study content), the issues associated with the preparation of study aids are to be dealt with urgently. It would be particularly important to develop study aids which view the acquisition of the content of the studies of the Latvian language and other subjects in mutual connections, by assuring the development of the competences in a meaningful context which is associated with the life, cognitive interests and the socio-cultural environment of the pupil.

## Bibliography

1. Anspoka Z., Tūbele S. (2015) *Lingvodidaktika. Latviešu valoda 1.-6.klase (Lingual-didactics. Latvian Language in Grades 1-6)*. Rīga: LVA. (in Latvian)
2. Bronfenbrenner U. (Ed.). (2005). *Making Humans Beings Human: Bioecological Perspectives on Human Development*. Sage Publications: Thousand Oaks, CA.
3. Dewie J. (1997). *Experience and Education*. New York: Touchstone.
4. Cummins J., Brown K., Sayers D. (2007). *Literacy, Technology, and Diversity: Teaching for Success in Changing Times*. Boston: Pearson, pp. 280.
5. Freiberga I. (2013). *Literārais darbs kā līdzeklis pirmsskolas bērna personības attīstības sekmēšanā pedagoģiskajā procesā (Literary Work as a Means of Facilitating Personality Development among Pre-School Children within the Pedagogical Process)*. Promocijas darbs pirmsskolas pedagoģijā. Liepāja: LiepU. (in Latvian)
6. Humbolts V. (1985). *Izlase (Selection)*. Rīga: Zvaigzne. (in Latvian)
7. *Latvijas ilgtspējīgas attīstības stratēģija 2030.gadam (Sustainable Development Strategy 2030)*. (2010). Rīga: LR Saeima. [online] [27.10.2016] Available at [http://www.pkc.gov.lv/images/LV2030/Latvija\\_2030.pdf](http://www.pkc.gov.lv/images/LV2030/Latvija_2030.pdf) (in Latvian)
8. Mayring P. (2007). On generalization in qualitatively Oriented Research. *Forum: Qualitative Social Research*, Vol. 8 (3).
9. McNeil B., Reeder N., Rich J. (2012). *A Framework of Outcomes for Young People*. London: The Young Foundation.
10. McWilliam E., Taylor P. (2012). *Personally Significant Learning*. [online] [20.10.2016] Available at <http://www.ericamcwilliam.com.au/personally-significant-learning/>
11. Meyer C., Jones T. B. (1993). *Promoting Active Learning Strategies for the College Classroom*. San Francisco: Jossey-Bass.
12. Moore A. (2012). *Teaching and Learning: Pedagogy, Curriculum, Culture*. New York: Routledge, Taylor and Francis group.
13. Yeager D., Henderson M.D., Mello S.D., Paunesku D., Gregory M.W., Spitzer B.J., Duckworth, A.L. (2014). *Boring but Important: A Self-Transcendent Purpose for Learning Fosters Academic Self-Regulation*. USA: University of Texas at Austin.
14. Rogoff B. (2003). *The Cultural Nature of Human Development*. USA: Oxford University Press.
15. Saldana J. (2012). *The coding manual for qualitative researchers*, (2nd ed.). London: SAGE Publications Ltd.
16. Schraw G., Flowerday T., Lehman, S. (2001). Increasing Situational Interests in the Classroom. *Educational Psychology Review*, Vol. 13, (3), pp. 211 – 224.
17. Vulāne A., Gavriļina M. (2008). *Valodā veldzējas tautas dvēsele.... (Soul Refresing in Nations Language...)*. Rīga: Mācību grāmata. (in Latvian)
18. Wells G. (2001). *Action, Talk And Text: The Case Of Dialogic Inquiry*. Santa Cruz: University of California.
19. Vigotskis Ļ. (2002). *Domāšana un runa (Thinfiging and Speach)*. Rīga: EVE. (in Latvian)
20. Леонтев А.Н. (2005). *Деятельность. Сознание. Личность (Action. Awareness. Personality)*. Москва: Смысл. (in Russian)

## Study of Criminal Attitude towards Violence and Personality Traits in Males

**Laura Simane-Vigante**<sup>1</sup> Mg. psych.; **Yana Chuzhuyeva**<sup>2</sup> B. sc. psych., Master student;

**Irina Plotka**<sup>3</sup> Dr. psych.; **Nina Blumenau**<sup>4</sup> Dr. sc. Ing.

Latvian University of Agriculture, Latvia<sup>1</sup>; Baltic International Academy, Latvia<sup>1,2,3,4</sup>.

[l.simane@inbox.lv](mailto:l.simane@inbox.lv)<sup>1</sup>; [jana.cuzujeva@inbox.lv](mailto:jana.cuzujeva@inbox.lv)<sup>2</sup>; [irinaplotka@inbox.lv](mailto:irinaplotka@inbox.lv)<sup>3</sup>; [nina.blum@gmail.com](mailto:nina.blum@gmail.com)<sup>4</sup>

**Abstract:** The problem of studying criminal attitudes, development of tools needed to measure them, as well as these tools' adaptation from original versions into other languages, is particularly topical at the moment. A poorly developed field is the study of the relationship between criminal attitudes and personal traits. The research aim is to study the relation of criminal attitude towards violence and personality traits in males. Research questions: Is there a relationship between criminal attitude towards violence and personality traits (extroversion, psychoticism, neuroticism) in males who have not been convicted? Which of the studied personality traits are the best predictors of the criminal attitude towards violence? Participants: 192 males aged 18 to 39 years ( $M = 23.2$ ,  $SD = 3.4$ ). All the participants have never been brought to justice for violence. Methods used: the Criminal Attitudes to Violence Scale (CAVs); the Eysenck Personality Questionnaire Revised - Abbreviated (EPQR-A). Results: qualitatively different results have been found in groups of participants with high and low CAVs values. In the group with high CAVs values a positive relationship between the criminal attitude towards violence and psychoticism has been found; psychoticism makes the main contribution to criminal attitude towards violence. In the group with low CAVs values a negative relationship between the criminal attitude towards violence and psychoticism, negative relationship between CAVs and extraversion and positive relationship between CAVs and neuroticism have been found; psychoticism and extraversion make the main contribution to criminal attitude towards violence.

**Keywords:** criminal attitude, criminal attitude towards violence, personality traits, explicit measures.

### Introduction

The relevance for studying the problem of criminal attitudes is confirmed by the information provided by the Central Statistics Database of Latvia: 47 406 crimes were committed during the year 2015, a third of which (15 511) were considered to be violent. Despite the existence of a large number of studies related to the research of the causes of criminal behaviour, there is a lack of studies aimed at understanding the relationship between the choice of a violent behaviour and personality traits of an individual.

The authors of the recent study believe it is appropriate to consider the problem of criminal violence in the context of the criminal attitude and attitude towards violence.

#### Theoretical approaches for studying criminal attitudes

Numerous studies by various authors (Nesdale, Maass, 2009; Mills, Kroner, 2002; Simourd, Van De Ven, 1999; Polaschek, Collie, 2004) indicate the existence of a relationship between criminal attitudes and criminal behaviour. In the context of The Risk-Need-Responsivity (RNR) Model, described by D.A. Andrews, J. Bonta, J.S. Wormith, criminal attitudes are one of the "Big Four" risk factors that can influence the criminal behaviour and recidivism (Andrews, Bonta, 2006).

Up to date, there is not one specific theoretical model explaining how criminal attitudes are classified or grouped. Within the literature, there is a different understanding of the concept of criminal attitude. Sometimes it is defined as criminal thinking, distorted thinking, irrational beliefs (Andrews, Bonta, 2010). For example, the criminal thinking is defined as the thought content and the thinking process, leading to the initiation and maintenance of the law violating behaviour (Walters, 2006).

Thinking errors or cognitive distortions are defined as a thought process that supports criminality, meaning that positive interpretations of certain situations help to justify or commit specific criminal behaviours. In other words, criminal attitudes point to a belief that individuals feel permitted to engage in criminal behaviours, regardless of the norms of the society or the negative effect on other individuals (Egan, McMurran, 2000).

Individuals, focused on criminal behaviour and incorporating the concept of criminal behaviour, are more exposed to risk of being involved in this particular behaviour (Boduszek, McLaughlin, 2011). A.M. Holsinger (1999) believes that people who have been socialized in crime-prone society and have



acquired antisocial attitudes towards criminal behaviour are more likely to commit crimes in the future. R. Akers Model (1985) is interesting because it explains the criminal activity as a result of decision-making process which is involved in the creation and development of cognitive, behavioural and motivational techniques (criminal attitudes). So, based on this model, people who are involved in the criminal behaviour for the first time because of the socialization with the anti-social "friends" in the future, by means of various reinforcements, acquire knowledge about how to obtain the benefits and avoid the punishment from actual or anticipated impact of the specific (criminal) behaviour (Akers, 1985; Boduszek, McLaughlin, 2011).

The diversity understanding of the construct of the criminal attitude, leads to different methodological approaches, measurement procedures and the problem of the research validity. For example, there is a Criminal Sentiments Scale-Modified (CSS-M) which includes the following subscales: Attitudes towards the Law, Courts, Police; Tolerance for Law Violations; Identification with Criminal Others and obviously focuses on the context of attitude (Shields, Simourd, 1991). Another instrument measuring the mentioned context is Psychological Inventory of Criminal Thinking Styles (PICTS) reveals the distortions in thinking, such as rationalization or a feeling of permissiveness (Walters, 1995).

#### Attitudes towards criminal violence

Along with the analysis of the influence of criminal attitudes on criminal behaviour in the context of violent offenses, it is important to also note the role of attitude towards violence. There are a number of studies pointing to a relationship between positive attitudes to violence and violent behaviour. The beliefs that contribute to approval of various types of aggression (including violence), acquired in a very early age, contributes to the maintenance and demonstration of this kind of behaviour in the future (Slaby, Guerra, 1988; Huesmann, Guerra, 1997; Zelli, Dodge, 1999). In the study in year 1997, D. Polashek and colleagues pointed out the predictive role of attitude towards violence in the context of the presence of sexual and non-sexual violence against women (Polaschek, Ward, 1997). Violence is understood as an expression of hostility and anger with the intention to hurt or cause harm to people or property through the use of physical force (APA Dictionary, 2015). It is important to note that the main factor that turns "violence" to "criminal violence" is the law. Without the law violence may be immoral, demoralizing and can cause damage, but it will not constitute as a crime (Riedel, Welsh, 2002).

Earlier developed techniques aimed at measuring attitudes towards violence, in practice, proved not to be very suitable tools for measurement of attitudes towards violence of violent inmates. For example, Attitudes Towards Violence Scale (ATVS) (Funk, Elliott, 1999) and Attitudes to Guns and Violence Questionnaire (AGVQ) (Shapiro, Dorman, 1997) have been developed on a sample of non-offender adolescents. The EXPAGG-M, focused on the measurement of a wide range of aggressive attitudes, also has been developed on a sample of students (Archer, Haigh, 1997). However, when tested on a sample of prisoners, the method could not distinguish between prisoners convicted of violent crimes from ordinary prisoners by the Instrumental (Instrumental) scale. It is true to say that there are factors that significantly obstruct the usage of research methods which were developed and adapted on non-criminal samples on violent, convicted criminals (Polaschek, Collie, 2004).

Criminal Attitude towards Violence scale (CAVs) is a technique that combines two constructs: The criminal attitude and Attitude towards violence (Polaschek, Collie, 2004). One of the short-term priority objectives for the mentioned scientists was to create an easily understandable and relatively short scale, as the criminals have low literacy levels and they can stay focused for a limited amount of time. Originally CAVs consisted of 75 statements within the context of non-sexual acts of physical violence. Some statements were taken from EXPAGG-M; (Archer, Haigh, 1997), and the Attitudes Towards Violence Scale (ATVS) (Funk, Elliott, 1999). Most of the statements are new and created by the authors, based on their clinical experience and the experience of their fellow practitioners working with prisoners convicted for violent crimes. As a result, this technique measures the attitude towards the non-sexual physical violence clearly addressing the individual, who is involved in the criminal lifestyle, such as "Carrying a weapon or a knife lets other people know that it is better not to mess with me". After several stages of adaptation and approbation CAVs was shortened to 20 item scale that proved to be the most reliable while measuring criminal attitude towards physical violence (Polaschek, Collie, 2004).

For the first time in Latvia this scale was used by L. Simane-Vigante under the supervision of Doctor of Psychology, Professor I. Plotka with the permission of D. Polashek. L. Simane-Vigante studies the



problem of criminal construct: criminal attitudes and criminal attitudes towards violence with both - explicit and implicit methods of measurement (Simane-Vigante, Plotka, 2015).

### The role of personality in predicting the criminal attitude towards violence

Based on their study of 255 prisoners, scientists S. Yochelson and S. Samenow presented the idea of the important role of the personality to develop and maintain criminal attitudes (criminal thinking styles) (Yochelson, Samenow, 1976).

A meta-analysis conducted by P. Gendreau, T. Little, and C. Goggin (1996), has identified a large number of factors predicting recidivism, four of which were the best predictors - criminal friends, the offender's criminal history, criminal attitudes, antisocial personality of the offender. In the construct of antisocial personality authors put concepts as sociopathy and psychopathy, measured with instruments such as the Minnesota Multiphasic Personality Inventory (MMPI) (Schiele, Baker, 1943); the Psychopathy Checklist (PCL-R) (Hare, 1991); the Socialization scale (SOC) of the California Personality Inventory (CPI), (Gough, 1957; Gendreau, Little, 1996).

E.M. Cale presented a meta-analytic review in 2006, where H.J. Eysenck's crime theory (Eysenck, 1977) serves as a theoretical basis for the study of the relationship between personality characteristics and anti-social behaviour. The main personality traits "Big 3" in the context of the H.J. Eysenck's theory are - extraversion (E), neuroticism (N), and psychoticism (P). In this approach out of all personal traits, psychoticism (impulsivity / disinhibition) most closely associated with anti-social behaviour, and extraversion / sociability least closely linked with antisocial behaviour (Eysenck, Eysenck, 1994; Cale, 2006). Therefore, it can be concluded that antisocial attitudes, criminal bonds, recidivism and antisocial personality are closely linked both theoretically and empirically (Boduszek, McLaughlin, 2011).

It is important to note that in the context of this paper, the criminal attitude towards violence is investigated with self-assessment procedures, defined as the conscious, controlled and direct, allowing access only to the explicit attitudes (Plotka, Igonin, Blumenau, 2016).

Theoretical analysis confirms the validity of the research studying the link between criminal attitudes and personality traits. However, studies investigating the influence of personal characteristics on criminal attitudes towards violence are very few.

The aim of the present research is to study the relation of criminal attitude towards violence and personality traits in males.

Research questions: Is there a relationship between criminal attitude towards violence and personality traits (extroversion, psychoticism, neuroticism) in males who have not been convicted? Which of the studied personality traits are the best predictors of the criminal attitude towards violence?

## **Methodology**

### Participants

192 men, aged 18 to 39 years ( $M = 23.2$ ,  $SD = 3.4$ ) "Non-convicts" previously not convicted adult male volunteers. 22 of them have higher education, unfinished higher education- 114, secondary vocational education- 28, secondary (secondary education) - 25, basic education - 3. 128 participants have a permanent job, 64 are temporarily employed. Three participant's native language is Latvian, 188 - Russian and 1 has a different native language. 153 men evaluated their financial situation as average, 13 below average and 26 - above average. 95 participants are in a stable a relationship, 97 – are not involved in a relationship at the moment.

### Measures

The Criminal Attitudes towards Violence scale (Polaschek, Collie, 2004) in the further linguistic adaptation in Russian. It is one-factor scale, which consists of 20 items. The variable, which is measured by this scale, is the attitude towards physical criminal violence of non-sexual nature and it reveals the participant's willingness to be involved in criminal and violent behaviour. The results of testing the internal consistency of the translation techniques were satisfactory Cronbach's alpha coefficient  $\alpha = 0.77$ ) and the next stage of the adaptation can occur.

The Eysenck Personality Questionnaire Revised-Abbreviated (EPQR-A) (Francis, Brown, 1992) in the primary linguistic adaptation in Russian. The questionnaire consists of 24 questions and includes four scales: extraversion, neuroticism, psychoticism and lie scale. Total Cronbach's alpha coefficient  $\alpha = 0.70$ .

For both measures the method of three times reverse translation was used. The scales were translated in Russian language.

### Procedure

Data collection was conducted with the help of printed and electronic versions of the test for measuring attitude towards criminal violence and personality traits, which was carried out individually and in groups.

### Results and discussion

Measured variables:

- 1) "Strength of criminal attitude towards physical non-sexual violence";
- 2) "Psychoticism", "Neuroticism", "Extraversion".

*To answer the first research question* descriptive statistics were calculated and a study of the empirical data distribution's correspondence to normal distribution was conducted. It was found that the distribution of the empirical data does not correspond to a normal distribution. Therefore, the Spearman and Kendall rank correlation coefficients to study the relationship were used. All correlation coefficients in absolute value do not exceed 0.20 and are not statistically significant, except the Kendall's correlation coefficient between the neuroticism and CAVs:  $\tau(192)=0.106, p=0.048<0.05$  that shows on a very weak monotonic positive relationship. Therefore, non-monotonic relationships were examined. In the first stage a non-linear regression analysis for linear, quadratic and cubic models was used. A quadratic relationship between psychoticism (dependent variable) and CAVs (independent variable) was found:  $F(3, 188) = 15.23, p<0.001$  (Figure1). Further investigation was therefore continued with correlation coefficients. CAVs was divided into two groups according to median  $Mdn=53.00$ . Scores, which are less than median correspond to low level of CAVs; scores, that are higher than median correspond to high level of CAVs. In the groups with high and low CAVs values, Spearman's and Kendall's correlation coefficients were calculated.

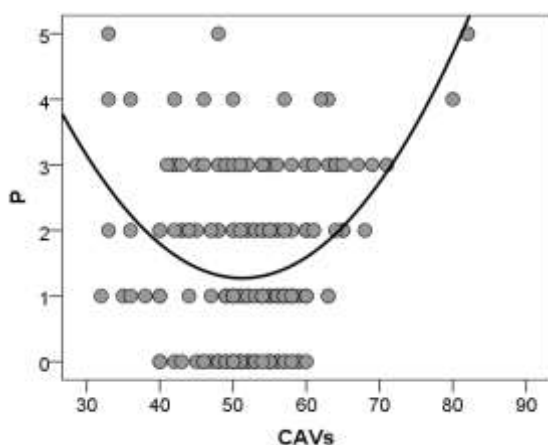


Figure 1. Quadratic regression model. Fit line.  
P - psychoticism (dependent variable), CAVs (independent variable).

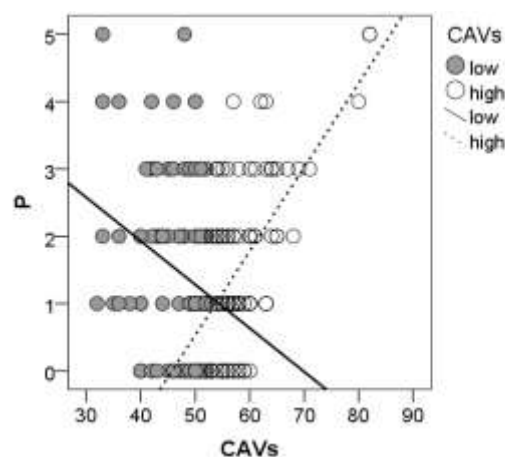


Figure 2. Scatter. Variables CAVs- psychoticism (P) for participants with low CAVs and high CAVs.

### CAVs – Psychoticism

In the group of participants with low CAVs' values, the relationship between CAVs and psychoticism is monotonic, negative. Spearman's correlation coefficient  $r_s(91) = -0.229^*, p<0.05$ . In the group of participants with CAVs' high values, the relationship between the CAVs and neuroticism is positive. Spearman's correlation coefficient  $r_s(101)=0.377^{**}, p<0.001$  (Figure 2). For the entire group of participants CAVs relationship with neuroticism is not revealed. Spearman's correlation coefficient is equal to  $r_s(192)=0.083, p=0.250, ns$  (ns - not significant).

### CAVs – Extroversion

In the group of participants with low CAVs' values the relationship between CAVs and extroversion is monotonic, negative. Spearman's correlation coefficient  $r_s(91) = -0.301^{**}$ ,  $p < 0.01$ . In the group of participants with high CAVs values the relationship between CAVs and extroversion was not found. Spearman's correlation coefficient  $r_s(101) = 0.070$ ,  $p = 0.490$ , ns (Figure 3). For the entire group of participants the relationship between CAVs and extroversion was not found. Spearman's correlation coefficient  $r_s(192) = 0.011$ ,  $p = 0.875$ , ns.

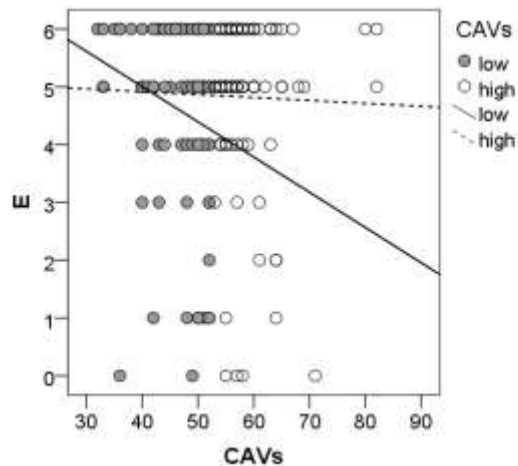


Figure 3. Scatter. Variables CAVs- extroversion (E) for participants with low CAVs and high CAVs.

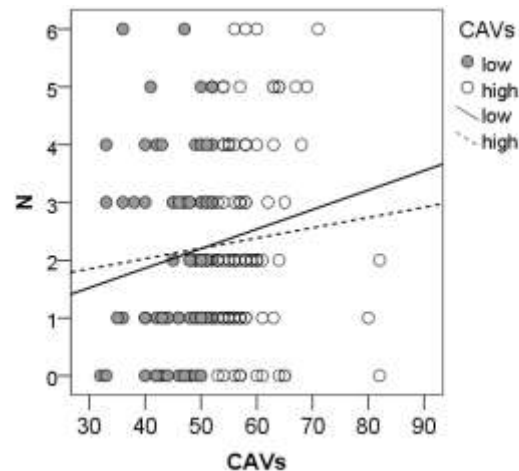


Figure 4. Scatter. Variables CAVs- neuroticism (N) for participants with low CAVs and high CAVs.

### CAVs – Neuroticism

In the group of participants with low CAVs values the relationship between CAVs and neuroticism is monotone, positive. Spearman's correlation coefficient  $r_s(91) = 0.214^{*}$ ,  $p < 0.05$ . In the group of participants with high CAVs values the relationship between CAVs and neuroticism was not found. Spearman's correlation coefficient  $r_s(101) = 0.097$ ,  $p = 0.335$ , ns. For the entire group of participants a weak positive correlation between CAVs and neuroticism was revealed. Kendall's correlation coefficient is equal to  $\tau(192) = 0.106$ ,  $p < 0.05$  (Figure 4). This result can be considered less accurate than the one described above.

*To answer the second research question* a multiple regression analysis was used. Since the relationship between the variables: "Strength of criminal attitude towards physical non-sexual violence" (CAVs) and "Psychoticism" was non-monotonic, then for writing the regression equation and determine which of the given predictors ("Psychoticism", "Neuroticism", "Extraversion") contribute most to CAVs, the scale CAVs was divided into two intervals - above the median and below the median. For each interval the regression equation was constructed. In both cases Stepwise, Forward and Backward methods gave the same results.

*High CAVs values.* For the predicted values an equation was obtained:

$$\text{CAVs (estimate)} = 54.197 + 2.715 * \text{Psychoticism.} \quad (1)$$

The greatest impact on the "Strength of criminal attitude towards physical non-sexual violence" is made by the variable "Psychoticism" ( $\beta_1 = 0.582$ ,  $t(100) = 7.12$ ,  $p < 0.001$ ). It means, that the variable "Strength of criminal attitude towards physical non-sexual violence" (CAVs) increases with the increase of variable "Psychoticism". Variables "Neuroticism" and "Extraversion" are not included in the regression equation.

The coefficient of determination  $R$ -Square = 0.339 shows that 33.9 % of variability of the dependent variable "Strength of criminal attitude towards physical non-sexual violence" is due to the influence of the independent variable "Psychoticism". The Adjusted  $R$ -square = 0.332. The standard error is estimated at 4.55. ANOVA showed that the model (1) is significant:  $F(1, 99) = 50.69$ ;  $p < 0.001$ .

*Low CAVs values.* For the predicted values an equation was obtained:

$$\text{CAVs (estimate)} = 51.503 - 1.132 * \text{Psychoticism} - 0.739 * \text{Extraversion.} \quad (2)$$

The greatest impact on the variable "Strength of criminal attitude towards physical non-sexual violence" (CAVs) is made by the variable "Psychoticism" ( $\beta_1 = 0.275$ ,  $t(90) = -2.75$ ,  $p < 0.01$ ), then, by "Extroversion" ( $\beta_2 = -0.218$ ,  $t(90) = -2.17$ ,  $p < 0.05$ ).  $R$ -Square=0.118 shows, that 11.8 % of variability of the dependent variable "Strength of criminal attitude towards physical non-sexual violence" is due to the influence of the independent variables "Psychoticism" and "Extroversion". Adjusted  $R$ -square=0.098. Standard error of estimate is 5.06. ANOVA showed that the model (2) is significant:  $F(2, 88) = 5.91$ ;  $p < 0.01$ . The negative sign of the standardized coefficients indicates a decrease in the variable "Strength of criminal attitude towards physical non-sexual violence" with increasing of the values of variables "Psychoticism" and "Extroversion". Variable "Neuroticism" was not included in the regression equation.

Thus, at high values of CAVs the greatest positive impact on the "Strength of criminal attitude towards physical non-sexual violence" is made by the variable "Psychoticism". At low values CAVs the greatest negative impacts on the "Strength of criminal attitude towards physical non-sexual violence" is made by variables "Psychoticism" and "Extroversion".

#### Interpretation of the results:

1. For the entire sample of students a positive but very weak correlation between neuroticism and the strength of the criminal attitude towards physical violence was found. Emotional stability is characterized by low scores on the neuroticism scale. High scores imply on emotional instability, which can be revealed as high emotionality, impulsivity, lack of interest, lack of confidence, sensitivity, sensibility and a tendency to irritability. Neurotic personality is characterized by inadequately strong reactions in relation to the stimuli that cause them. Individuals with high scores in neuroticism scale faced with stressful situations may develop neurosis. It is possible that with increasing emotional instability the strength of attitude towards physical violence may increase. Vice versa, with increasing strength of attitude towards criminal violence, individual can develop emotional instability. Neuroticism does not contribute significantly to attitude towards physical violence. Perhaps the revealed positive relationship was present due to a third variable, which is positively associated with both - neuroticism and attitude towards criminal violence. That is, under certain conditions, neuroticism and strength of attitude towards violence are accordingly increasing.

2. High scores on extraversion scale correspond to individuals that are characterized by sociability, impulsiveness, irascibility, self-confidence, optimism and high activity levels. Feelings and emotions do not apply to strict control, so extroverted individuals are prone to risky behaviour. Extraverts are usually quick to get angry, become aggressive easily and may be unreliable. Low scores on extraversion correspond to introverts. Such individuals are quiet, shy, prone to self-analysis, reserved and distant from all people but are close to friends. They plan and think about their actions in advance, do not trust sudden motives, take decision-making very seriously, love everything to be in order. They control their feelings, it is not easy to irritate them. They are pessimistic, highly appreciate moral norms.

In the group of participants with low CAVs values, a negative correlation between extraversion and the strength of criminal attitude towards physical violence was found. In the group of participants with high CAVs values the relationship between extraversion and the severity of the criminal attitude towards physical violence is not revealed.

In the group of low CAVs' values a negative relationship between the "Extroversion" and the "Strength of criminal attitude to physical violence" can be explained by an error of explicit (self-reported) measurement. It is possible that high values of CAVs are underestimated by extraverts and low values are overestimated by introverts. In this case, there is a need for implicit measurements of the strength of criminal attitude towards physical violence.

3. High scores on Psychoticism scale are characterized by a tendency to antisocial behaviour, pretentiousness, inadequate emotional reactions, highly prone to conflict situations, tendency of non-contact, self-centeredness, lack of empathy, hostility towards others, cruelty, non-conformism, social indifference, carelessness and recklessness. Participants with low scores on the psychoticism scale are socialized.

In the group of participants with low CAVs values a negative correlation between psychoticism and the strength of the criminal attitude towards physical violence was found. In the group of participants with

high CAVs values a positive correlation between psychoticism and the strength of the criminal attitude towards physical violence was found.

With increase of low strength criminal attitude towards physical violence the anti-social orientation may be suppressed by the participants. With further increase in the strength of attitude towards violence antisocial orientation is no longer suppressed, on the contrary, it becomes higher.

In the group of low CAVs' values a negative relationship between the "Psychoticism" and the "Strength of criminal attitude to physical violence" can also be explained by an error of explicit (self-reported) measurement. As psychopathic personality is antisocial, for the participants in the group with CAVs below median, CAVs values may be underestimated, while socially responsible participants may overestimate low CAVs values. In this case also, there is a need for implicit measurements of the strength of criminal attitude towards physical violence.

4. For participants with CAVs values above the median in the regression equation with the dependent variable the "Strength of the criminal attitude towards physical violence" only the variable "Psychoticism" was included (with a positive coefficient). Thus, out of neuroticism, extraversion and psychoticism only psychoticism contributes in criminal attitude towards violence. This result is consistent with Cale's (2006) conclusions, that out of the personality traits, psychoticism is most closely associated with anti-social behaviour.

5. For participants with CAVs values below the median in the regression equation with the dependent variable the "Strength of the criminal attitude towards physical violence" variables "Psychoticism" and "Extraversion" were included, both with negative coefficients. This result is likely to be interpreted as a measurement error, explained in second and third paragraphs. Only implicit measurements of attitude towards violence could clarify the results.

## Conclusion

The main idea of the theoretical background was to analyse researches of the problems of the criminal violence causes and their relationship with personality traits in men. The analysis showed that the construct of criminal attitude towards violence overlaps with both - general criminal attitudes and attitudes towards violence.

This multidimensional construct of criminal attitude's causes makes it difficult to create various techniques for its measurement and as a result leads to ambiguities in the interpretation and validity evaluation of such research. In the recent study special attention was paid to the analysis of the tools that are necessary for measuring attitudes towards violence. The difficulty has been associated with the selection of the necessary tools to measure attitudes towards criminal violence. Criminal violence refers only to those violent acts that are prohibited by law, and, as a rule, include the use of physical force. The essence of the concept of criminal attitude towards violence is the approval of the use of physical violence in the course of committing criminal acts. In the context of this work criminal attitude towards violence is a kind of criminal attitude. For criminal attitude towards violence measurement the Criminal Attitude towards Violence scale was used, which is a method, which measures attitude towards non-sexual physical violence referring to the respondent's involvement in criminal lifestyle. The first stage of linguistic adaptation was carried out for the Eysenck Personality Questionnaire Revised-Abbreviated (EPQR-A).

Chances are that at low values on CAVs, neuroticism, extraversion and psychoticism are not related to criminal attitudes towards violence. Starting of some CAVs values, that are close to the median, a positive correlation relationship between the strength of attitude to the criminal violence and psychoticism is revealed.

The limitation of this study: the investigated participants never were not attracted to criminal responsibility.

For further investigation of the relationship between the criminal attitude towards physical violence with neuroticism, extraversion and psychoticism, the implicit measurements are needed.

## Bibliography

1. Akers R. (1985). *Deviant Behavior: A Social Learning Approach*. Belmont: Wadsworth.
2. Andrews D.A., Bonta J., Wormith J.S. (2006). The Recent Past and Near Future of Risk and/or Need Assessment. *Crime & Delinquency*, Vol. 52, pp. 7 – 27.
3. Andrews D.A., Bonta J. (2010). *The Psychology of Criminal Conduct* (5th ed.). New Providence, NJ: LexisNexis Matthew Bender.
4. Archer J., Haigh A.M. (1997). Do Beliefs about Aggressive Feelings and Actions Predict Reported Levels of Aggression? *British Journal Social Psychology*, Vol. 36, pp. 83 – 105.
5. Boduszek D., McLaughlin C. G., Hyland P.E. (2011). Criminal Attitudes of Ex-Prisoners: The Role of Personality, Criminal Friends and Recidivism. *Internet Journal of Criminology*, Vol. 9, pp. 1 – 10.
6. Cale E.M. (2006). A Quantitative Review of the Relations between the “Big3” Higher Order Personality Dimensions and Antisocial Behaviour. *Journal of Research in Personality*, Vol. 40, pp. 250 – 284.
7. Egan V., McMurrin M., Richardson C., Blair, M. (2000). Criminal Cognitions and Personality: What does the PICTS Really Measure? *Criminal Behaviour and Mental Health*, Vol. 10(3), pp. 170 – 184.
8. Eysenck H.J. (1977). *Crime and Personality*. London: Routledge and Kegan Paul.
9. Eysenck H.J., Eysenck S.B.G. (1994). *Manual of the Eysenck Personality Questionnaire*. San Diego: Educational and Industrial Testing Services.
10. Francis L.J., Brown L.B., Philipchalk R. (1992). The Development of an Abbreviated form of the Revised Eysenck Personality Questionnaire (EPQR-A): Its Use Among Students in England, Canada, the USA and Australia. *Personality and Individual Differences*, Vol. 13, pp. 443 – 449.
11. Funk J.B., Elliott R., Urman M.L., Flores G.T., Mock R.M. (1999). The Attitudes Towards Violence Scale a Measure for Adolescents. *Journal of Interpersonal Violence*, Vol. 14 (11), pp. 1123 – 1136.
12. Gendreau P., Little T., Goggin C. (1996). A Meta-Analysis of the Predictors of Adult Offender Recidivism: What Works! *Criminology*, Vol. 34, pp. 575 – 607.
13. Gough H. G. (1957). *Manual for the California Psychological Inventory*. Palo Alto, CA: Consulting Psychologists Press.
14. Hare R. D. (1991). *The Hare Psychopathy Checklist-Revised (PCL-R)*. Toronto, ON: Multi-Health Systems.
15. Holsinger A.M. (1999). Assessing Criminal Thinking: Attitudes and Orientations Influence Behaviour. *Corrections Today*, Vol. 61, pp. 22 – 25.
16. Huesmann L.R., Guerra N.G. (1997). Children’s Normative Beliefs about Aggression and Aggressive Behavior. *Journal of Personality and Social Psychology*, Vol. 72, pp. 408 – 419.
17. Mills J.F., Kroner D.G., Forth A.E. (2002). Measures of Criminal Attitudes and Associates (MCAA): Development, Factor Structure, Reliability, and Validity. *Assessment*, Vol. 9, pp. 240 – 253.
18. Nesdale D., Maass A., Kiesner J., Durkin K., Griffiths J., James B. (2009). Effects of Peer Group Rejection and a New Group’s Norms on Children’s Intergroup Attitudes. *British Journal of Developmental Psychology*, Vol. 27, pp. 799 – 814.
19. Plotka I., Igonin D., Blumenau N. (2016). Implicit Attitudes and Measurements: Effect of Context. *International Business: Innovations, Psychology, Economics*, Vol. 7, No 2(12), pp. 7 – 150. [online] [12.11.2016]. Available at [http://www.kuryba.lt/failai/zurnalai/2016\\_2.pdf](http://www.kuryba.lt/failai/zurnalai/2016_2.pdf)
20. Polaschek D.L.L., Ward T., Hudson S.M. (1997). Rape and Rapists: Theory and Treatment. *Clinical Psychology Review*, Vol. 17, pp. 117 – 144.
21. Polaschek D.L.L., Collie R.M., Walkey F.H. (2004). Criminal Attitudes to Violence: Development and Preliminary Validation of a Scale for Male Prisoners. *Aggressive Behaviour*, Vol. 30, pp. 484 – 503.
22. Riedel M., Welsh W. (2002). *Criminal Violence. Patterns, Causes and Prevention*. Los Angeles, CA: Roxbury Publishing Company.
23. Schiele B.C., Baker A.B., Hathaway S.R. (1943). The Minnesota Multiphasic Personality Inventory. *Journal-Lancet*, Vol. 63, pp. 292 – 297.
24. Shapiro J.P., Dorman R.L., Burkey W.M., Welker C.J., Clough J.B. (1997). Development and Factor Analysis of a Measure of Youth Attitudes Toward Guns and Violence. *Journal of Clinical Child & Adolescent Psychology*, Vol. 26, pp. 311 – 320.
25. Shields I.W., Simourd D.J. (1991). Predicting Predatory Behaviour in a Population of Young Offenders. *Criminal Justice and Behaviour*, Vol. 18, pp. 180 – 194.

26. Simane-Vigante L., Plotka I., Blumenau N. (2015). Research of Attitudes Towards Criminal Violence with Implicit and Explicit Measures of Cognition, *Journal of Education, Psychology and Social Sciences*, Vol. 3 (2), pp. 72 – 77.
27. Simourd D.J., Van De Ven J. (1999). Assessment of Criminal Attitudes: Criterion-Related Validity of the Criminal Sentiments Scale-Modified and Pride in Delinquency Scale, *Criminal Justice and Behaviour*, Vol. 26, pp. 90 – 106.
28. Slaby R.G., Guerra N.G. (1988). Cognitive Mediators of Aggression in Adolescent Offenders: 1. Assessment. *Developmental Psychology*, Vol. 24, pp. 580 – 588.
29. Walters G.D. (1995). The Psychological Inventory of Criminal Thinking Styles: Part I. Reliability and Preliminary Validity. *Criminal Justice and Behaviour*, Vol. 22, pp. 307 – 325.
30. Walters G.D. (2006). Appraising, Researching and Conceptualizing Criminal Thinking: a Personal View. *Criminal Behaviour and Mental Health*, Vol. 16, pp. 87 – 99.
31. Yochelson S., Samenow S.E. (1976). *The Criminal Personality (Vol. 1): A Profile for Change*. New York: A Jason Aronson Book.
32. Zelli A, Dodge K.A., Lochman J.E., Laird R.D. (1999). The distinction between beliefs legitimizing aggression and deviant processing of social cues: Testing measurement validity and the hypothesis that biased processing mediates the effects of beliefs on aggression. *Journal of Personality and Social Psychology*, Vol. 77, pp. 150 – 166.



## Learning to Learn Scenarios of Carers in a British Residential Home

**Dalia Staniuleviciene** Dr. sc. soc.

Appleby House, England

[d.staniuleviciene@gmail.com](mailto:d.staniuleviciene@gmail.com)

**Abstract:** In different environments and different groups, learning to learn is explained as unique to every individual. Every person goes through certain stages of learning to learn, developing different scenarios. In this article, using a British residential home as a specific environment, the attitude of carers towards learning to learn scenarios in a residential home is revealed. The carers discuss their practical experience while working in a residential home and give their own examples about learning to learn. The societal learning to learn scenario is mentioned: this is described as relevant in a working environment. The reason why participants prefer the societal learning to learn scenario is that this scenario has more positive long-term implications in relation to clients, family, staff. The decisions "that are taken on the floor" can have long term results. Learning to learn scenarios can be very simple, including looking after people, making small differences in their lives, making residents' life a bit happier, making people smile, making them laugh, making them comfortable and cared for. Some of the participants explained that they feel more effective and useful giving positive feelings and getting cooperation as a feedback. People are unique so that it helps to try new ways of dealing with them. Using a residential home as an example such small actions as making a cup of tea, assisting residents to dress, in this way slowly building a relationship with him/her affect the care in the long term. Friendly feelings and trust makes the process positive and successful. Learning to learn scenarios consists of involvement in the working environment, training and learning as you go, working as a team, adjustments on a case to case basis, shadowing, sharing skills with co-workers and being open to superiors' suggestions.

**Keywords:** adult education, learning to learn, residential home, scenarios.

### Introduction

The research for this article took place in what is known as a "residential home", "the common name for a care home, which supplies accommodation for people who are no longer able to manage everyday tasks or to maintain an independent home of their own. In general, residential home take people who need less care than is provided in a nursing home" (Bailey, 2015, 218).

Statistics show that "every seven seconds someone in the world is diagnosed with dementia" (Atkins, 2013, 8). According the statistical data of the Alzheimer's Society 800 000 people with dementia live in the UK (Atkins, 2015). The facts show that every third person over 65 has dementia. That means that many older people need more attention and qualitative care. But the facts show that not all care homes are suitable to people with dementia. Indeed, the research shows "that difficult behaviour is frequently caused by the behaviour of the care workers and the design of the home" (Andrews, 2015, 331).

So the scientists are searching for new learning forms to make education meaningful in any working environment (Fink, 2003; Illeris, 2006; Illeris 2009; Wirth, Perkins, 2008). With these facts in mind, it is important to make the environment safe and positive to people with dementia. This means that care workers have to continue learning in the working environment to guarantee the high quality of services for residents. Then the question arises: what are the best learning to learn scenarios for carers in a residential home?

**Research object** – learning to learn scenarios of carers.

**The aim** of this research is to reveal learning to learn scenarios of carers in a British residential home.

### Research tasks:

1. To identify personal characteristics of carers helping to work and learn in a British residential home.
2. To explain the meaning of learning scenarios and learning to learn in the work environment.
3. To highlight ways for employees to improve in a residential home.



## Methodology

The base for empirical research are the ideas about key trends of adult learning to learn that are based on learning to learn scenarios, presented after adapting and modifying the ideas of the authors (Dewey, 1997; Kukla, 2000; Savin–Baden, 2000; Staniuleviciene, 2014; Vygotsky, 1986).

Learning to learn is ability to learn, to organize one's own learning, including effective management of time and information, both individually and in groups. Learning to learn engages learners to build on prior learning and life experience to use and apply knowledge and skills in a variety of situations – at home, at work, in education and training (Key Competences..., 2007).

Eight carers from a British residential home participated in this research (6 females and 2 males). The research took place in a residential home in the UK, from the 11-th of October to 18-th of November in 2016. The participants' ages were 24-70 years of age. The research restriction was that the majority of research participants were female (6 females and 2 males). The participants were not divided into age or accumulated experience subgroups in this case, the priority was to involve into the survey all full-time day carers.

“Suitable research participants are selected. The most important selection criterion is that the participant should be experiencing the phenomenon that is researched and should be interested in it. Research participants become co-workers for the researcher, thus, interpersonal communication and empathy are highly important in the research:”... the object of qualitative research is informants' knowledge on their experiences and the construct of their experiences (Bitinas, Rupsiene, Zydziunaite, 2008, 125).

The participants in the research were provided with 5 open-ended written questions, 8 carers received their interview questions in written form. These 8 carers had to answer questions about their personal characteristics/features which help them to work and learn new things in a residential home; about meaning of learning scenarios and learning to learn in a work environment; and the meaning of social relations. The participants were asked to give one example to show how they have improved as employees in a residential home.

The collected data was analysed using content analysis. The research results are presented as a text highlighting the research participants' personal characteristics/features, learning to learn scenarios, learning to learn, social relations, and improvements in a residential home.

## Results and discussion

### *Personal characteristics of carers helping to work and learn in a residential home*

“An important role in learning to learn scenarios is played by adult's personal features” (Staniuleviciene, 2014, 136).

When talking about personal characteristics, carers have identified the following ones, presented in Table 1. The most often mentioned characteristics are empathy and patience, the other useful characteristics - kindness and the willingness to go the extra mile (being extra careful and extra vigilant so that you are more able to accommodate the residents' needs).

According the research participants, working and learning to help people depend on personal features and the ability to see things from the resident's point of view:

*working in residential care for years I can say that you need patience, the ability to see the things from the resident's perspective, also known as empathy, confidence in your own ability, basic compassion to motivate yourself, when you see someone who needs help, you want to help, but if you have none of these qualities, any help you give will be ineffective [C8].*

It is important to understand each client, to be sensitive to the client's needs. According to the informants:

*I suppose the point is the more you know about the resident the more you are able to meet that person's needs better. Talking to the resident the more you know about the client the better you understand and assist them meeting their full potential, what motivates them, what makes them happy, what makes them sad, how it can relate to their care [C8].*

Table 1

**Personal features/characteristics of carers**

Category	Subcategory	Respondents' answers
Learning to learn dimension	Personal features/characteristics	<p>Empathy [C1, C4, C6, C8].</p> <p>Patience [C5, C6, C8].</p> <p>Understanding. Sensitive to the client's need. Open-mindedness [C1].</p> <p>For me I think the most important thing is that I like to socialize. I am a fast learner and not the last I really care about people [C2].</p> <p>Listening to others. Working with others to improve your learning. Doing training and shadowing [C3].</p> <p>Team work and encouragement [C7].</p> <p>Empathy and sociable skills are the strongest attributes [C4].</p> <p>Flexibility, willingness, commitment [C5].</p> <p>Kindness, willing to go the extra mile [C6].</p>

Open-mindedness helps to learn new things: *being open minded is when you can learn new things every time, every shift you come to work [C1].*

Talking about flexibility, participants noted: *flexibility is not being too rigid. In the caring context it means always to be willing to look for other methods that would cause less harm or distress to the clients. Behaving in residents' best interests without disturbing their freedom – that means flexibility.*

*Opposite of flexibility is inflexibility, good example could be always sticking to a schedule regardless of the circumstances, it means when the schedule matters more than the resident.*

That's why willingness is important. It is being helpful to have a positive attitude.

In making conclusions it is important to highlight some more ideas of participants: *what I've noticed over time - the clients first will recognize you, but because of dementia they will gradually lose the memory of who you are, but they will remember the positive feelings they have with you. And that is usually enough to gain their cooperation [C8].*

*Another quality is a good sense of humour, being professional - "take the job seriously not yourself"- you may begin to think that you are able to do the job better than someone else, who has the insight to do the job better. You do the job best and correctly but without any empathy. Some people call it "having a good bed side manner". As an example one carer can do everything as a routine correctly but without any feelings, warmth.*

*If a client is smiling when they see you, the client's experience is going to be more positive straight away, because you have a trusting relationship, the client has positive memories about you and it helps them be more respectful to what you say. Who will you listen to? Someone who is cold and very official or someone who is genuine and warm? The answer is clear. So the carer has to be very genuine, sincere, which helps the resident to be more inclined to come to you and talk with you. Through proper communication you learn how to solve the small and big problems that occur in the working environment [C8].*

*Personal characteristics for the respondents include having an open mind, patience, empathy and humility (humility is opposite to arrogance, not reaching the point when you know all about your job). Being open minded involves being open to new concepts, new methods, and new ideas to do things in the everyday job. The carers need patience, because things do not always run to plan and to put them right the carer may have to wait for a client who is slow in his/her behaviour and thinking. Empathy is being able to see things from another point of view, without necessarily agreeing with them. When you disagree with somebody you need to stop and try to work out why they have come to that particular conclusion or action; if you put yourself in their situation, you may work out why they are reacting in a particular way.*

*For me I think the most important thing is that I like to socialize. I am a fast learner and not the last I really care about people [C2].*

*It is important team work and encouragement [C7], where empathy and sociable skills are the strongest attributes [C4].*

*That's why it is important working with others to improve your learning, doing training and shadowing [C3], where such personal features as flexibility, patience and willingness, commitment (not backing out when things get tough) are vital [C5].*

This part of the research has proved the importance of personal features/characteristics of carers, as one of the learning to learn dimensions, enriching the learning to learn experience.

### **Carers about learning scenarios and learning to learn in the work environment**

Scenario is a postulated sequence or development of events (Stevenson, 2010). "A learning scenario is an a priori description of a learning situation, independently of the underlying pedagogical approach. It describes its organization with the goal of ensuring the appropriation of a precise set of knowledge, competences or skills. It may specify roles, activities and required resources, tools and services" (Learning Scenario, 2013). "Analysis of literary resources helped to identify key learning to learn scenarios that take into consideration learner's personal characteristics, values, present knowledge, skills and abilities to organise the process of learning, learn and act independently, learn and act in group, solve problems and reflect on learning and activity". Learning to learn scenarios are individual for each participant, but all scenarios are connected through such components as values, personal features, knowledge, abilities and skills (Staniuleviciene, 2014, 57-59). The Table 2 provides the participants' answers about learning to learn scenarios in their work environment.

Table 2

**Learning to learn of carers in the work environment**

Category	Subcategory	Respondents' answers
Learning to learn scenarios	Learning to learn in the work environment	<p>Learning to make adjustments for the general welfare of the residents and oneself [C1].</p> <p>I think that all you need to do is to listen to everybody, to pay attention, to try to see inside every resident, to try to put yourself in their place [C2].</p> <p>Learning as you go, learning new things whilst working [C3].</p> <p>To share our skills with other co-workers. Shadowing [C4].</p> <p>Being open to my colleagues' and superiors' corrections and suggestions [C5].</p> <p>To evolve in the working environment [C6].</p> <p>To learn new skills, to upgrade yourself [C7].</p> <p>It's my brain process from hands on experience [C8].</p>

According to respondents, the learning to learn scenario is something that would contribute to improve the services to the elderly.

Some of them explain that learning to learn scenarios for them *are the easiest way of learning through practising*. The others prefer *training classes conducted regularly with hands on experience, the combination of practice and theory*.

The answers given by the participants show that practical scenarios, ones that will prepare them for what to expect in the work place, *online training and learning from other co-workers are effective in the working place*.

*It is important not to forget to take breaks when people are too tired: the type of scenario that makes you sit down and be patient and remind you of empathy.*

The answers by the respondents show that practical experience is more significant than learning theory in the residential home. It is important to mention that hands-on experience is significant as it will give a good idea of the capabilities of the carer. The research has revealed that a practical approach would be more effective in the working place.

More detailed information about learning to learn scenarios is presented in Figure 1. Discussing the components in Figure 1 evolving in the working environment means that when a worker evolves in the working environment he/she tries new techniques and observes the results. If the outcome is positive, then the technique is adapted, if it is negative - the technique is discarded, not used.

Training and learning as you go means that when interacting with other professional carers one observes other carers and their techniques. Making these observations, carers try to make their notes about different methods and choose the best one. Similar activities are done shadowing, sharing skills with co-workers. But later on, when the carer is working independently, training and learning as you go means working and adapting to a changing situation.

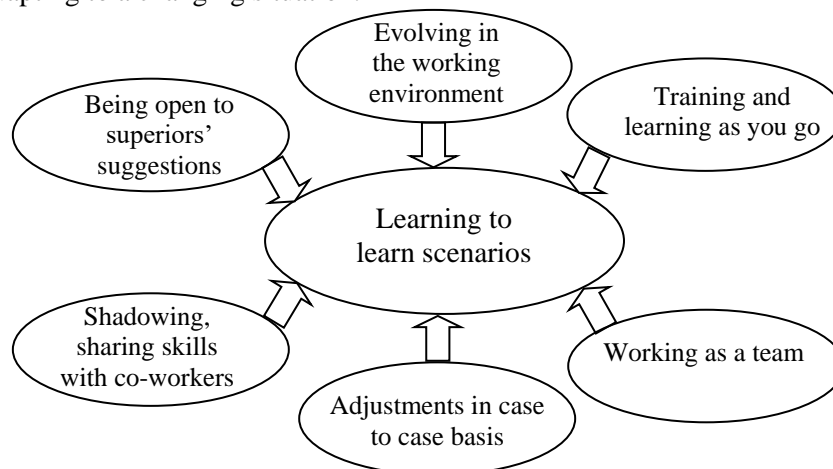


Figure 1. Learning to learn scenarios in a residential home (by the author).

Adjustments in a case to case basis means looking at individual cases and making the right choice, using whatever appropriate care for the residents is needed.

Working as a team is communicating and moving in the same direction, finding the best possible outcome for the clients/residents. Being open to superiors' suggestions means listening to constructive criticism and acting on it.

Learning to learn, according the respondents, involves refocusing his/her skills every day, sharing his/her knowledge with colleagues and being open to constructive suggestions and criticism.

### Improving as an employee in a residential home

Employees learn how to adapt and to anticipate clients' individual needs, depending on the individual situation:

*Make adjustments with my actions as the need arises on a case to case basis [C1].*

Individual employees observe each other and learn different things from each colleague: *usually I am just looking around. All my colleagues are different, they all have different ways of working, I am trying to take what is good, any trick, you see if it is useful [C2].*

Respondents mentioned that they use intuition because one never knows when the friendly face of a worker will work better than other methods used in the residential care setting: *also I am using my heart, you never know when a smile can beat all the other methods [C2].*

Working in residential home every day is a challenge. Unexpected random occurrences make the job more challenging: *being a carer in a residential home makes me feel like moving every day in an adventure [C2].*

These random occurrences may challenge the carer to look for new solutions, new working methods. Every positive response from the residents is emotionally rewarding for the carers so that they try continuing to learn: *the human brain is a big mystery and I really found it amazing that I can work with them (residents), to see their reactions [C2].*

It is very important to create a strong bond between residents and workers, even between staff and families [C4].

All these ideas of the respondents show that social relations are important in improving as an employee.

*How I interact and how a carer interacts with society in general. E.g. if you say that you area dementia carer most people reaction is positive. It means dealing with society and society's reaction to you. It*

*may react different, so I depending on what they are reacting to, like most people are surprised that I am a male carer, that they expect me to act in a certain way, they expect me to be different than a female carer. But after they see how I work, they find it to be very reassuring [C8].*

*Reason why I prefer societal learning to learn scenario because you have more positive long term implications in relation to clients, family, staffing. The action you take on the floor can have long term results.*

*Using residential home as an example, the small actions like making a cup of tea, to the major ones, assisting residents to dress and slowly building a relationship with him/her will affect the care you can give in the long term. A good way of putting it they will always associate good feelings with you, but may be not able to remember why. They will associate good feelings and trust you, which makes it easier to care for them [C8].*

A learning to learn scenario in a residential home is more societal from the learned experiences of each carer. It means that the carers, residents, their family members, friends and other case workers are part of society and can all make changes in their community and the wider society in general.

The findings of this survey explain the importance of learning to learn scenarios and complement K. Illeris (2006; 2009) ideas about key processes of adult learning.

## Conclusions

The conducted research has proved that the most personal dominant characteristics of carers helping to work and learn in a British residential home are empathy and patience. The other useful characteristics are kindness, open-mindedness, flexibility, commitment and willing to go the extra mile.

Proper communication is extremely useful in establishing the residents' needs and helpful in solving problems in the working environment.

The results of survey confirmed that learning scenario is constructed of the series of events in the work environment. The results of the research show that a practical approach is more dominant and effective in the work environment.

Learning to learn scenarios consist of involvement in the working environment, training and learning as you go, working as a team, adjustments in case to case basis, shadowing, sharing skills with co-workers, and being open to superiors' suggestions.

This research has revealed that practical experience is more effective for employees to improve in a residential home. The answers of the carers confirm that making adjustments with his/her actions as the need arises on a case to case basis is the most effective way to improve in a residential home.

Social relations are also important for improving as an employee.

Learning to learn, according to the respondents, means sort of refocusing his/her skills every day, sharing his/her knowledge with colleagues and being open to constructive suggestions and criticism that makes to think about new solutions and new working methods in a residential home.

The answers of the participants emphasize that the best way to improve in a residential home is to learn persistently every day because of positive long term results.

## Bibliography

1. Andrews J. (2015). *Dementia: The One-Stop Guide*. London: Profile Books LTD.
2. Atkins S. (2013). *First Steps to Living with Dementia*. Oxford: Lion Books.
3. Atkins S. (2015). *Dementia for Dummies*. Chichester: John Wiley & Sons Ltd.
4. Bailey A. (2015). *Alzheimer's and Other Dementias*. (4<sup>th</sup> ed.). Bridgwater, Somerset, UK: Class Health.
5. Bitinas B., Rupsiene L., Zydziunaite V. (2008). *Kokybinių tyrimų metodologija. (Qualitative Research Methodology)*. Klaipėda: S. Jokuzis Press. (in Lithuanian)
6. Dewey J. (1997). *Experience and Education*. New York: Touchstone Book.
7. Fink E. (2003). *Nietzsche's Philosophy*. London; New York: Continuum.

8. Illeris K. (2009). *International Perspectives on Competence Development. Developing Skills and Capabilities*. London: Routledge.
9. Illeris K. (2006). *Three Dimensions of Learning: Contemporary Learning Theory in the Tension Field between the Cognitive, the Emotional and the Social*. Malabar, Florida: Krieger.
10. *Key Competences for Lifelong Learning. European Reference Framework* (2007). Belgium: European Communities.
11. Kukla A. (2000). *Social Constructivism and the Philosophy of Science*. London and New York: Routledge.
12. *Learning Scenario*. (2013). Telearn Thesaurus [online] [15.01.2017]. Available at [https://www.tel-thesaurus.net/wiki/index.php/Learning\\_scenario#Definition](https://www.tel-thesaurus.net/wiki/index.php/Learning_scenario#Definition)
13. Savin–Baden M. (2000). *Problem-based Learning in Higher Education: Untold Stories*. Buckingham: The Society for Research into Higher Education and Open University Press. [online] [15.01.2017]. Available at <https://www.mheducation.co.uk/openup/chapters/033520337X.pdf>
14. Staniuleviciene D. (2014). *The Reflective Experience of Adult Learning to Learn*. Doctoral Thesis. Kaunas: Vytautas Magnus University.
15. Stevenson A. (Ed.). (2010). *The new Oxford dictionary of English* (3<sup>rd</sup> ed.). Oxford: Oxford University Press.
16. Vygotsky L. (1986). *Thoughts and Language*. Cambridge: The MIT Press. [online] [15.01.2017]. Available at [http://s-f-walker.org.uk/pubsebooks/pdfs/Vygotsky\\_Thought\\_and\\_Language.pdf](http://s-f-walker.org.uk/pubsebooks/pdfs/Vygotsky_Thought_and_Language.pdf)
17. Wirth K.R., Perkins D. (2008). *Learning to Learn*. [online] [15.01.2017]. Available at <https://www.macalester.edu/academics/geology/wirth/learning.pdf>

## Modern Educational Domain: Combinatorial Modelling of Individual Learning Path

Katerina Stepanenko<sup>1</sup> PhD; Liya Torosyan<sup>2</sup> PhD  
Plekhanov Russian University of Economics, Russia<sup>1, 2</sup>;  
[valentinova\\_kate@mail.ru](mailto:valentinova_kate@mail.ru)<sup>1</sup>; [liya-torosyan@yandex.ru](mailto:liya-torosyan@yandex.ru)<sup>2</sup>

**Abstract:** this article is aimed at individual learning path (ILP) modelling in the framework of student-centered educational paradigm, and defines rationale of individual learning path introduction into institutions of higher education. The topicality of the research is stipulated by the increasing necessity to reflect the prevailing educational tendency towards student-centeredness in a foreign language learning process by adjusting it to individual needs of every student. The special emphasis is put on the idea that individual learning path framing is aimed at individualization, differentiation and exposure of each and every student's unique individual features. To verify the abovementioned ideas the elaborated model was tested basing on cognitive, diagnostic, empirical methods. The two groups in total 75 students participated in the research project at the Plekhanov Russian University of Economics, February 2016. They are third-year bachelor students majoring in "Economics" and "Management" and studying English as a second language. The authors put forward two hypotheses suggesting a deliberate choice of participants: third-year students are able to consciously bear responsibility for their learning outcome. Research findings show that individual learning path implementation into the English language learning process enhances students' motivation, provides their deeper involvement into the learning process and gives more freedom regarding what and how to be taught. The abovelisted tenets witness that individual learning path implementation into the educational process inevitably boosts students' foreign language learning incentives, revealing their unique features. Further implementation of the model is seen in its introduction into the university curriculum so that learning courses will be adjustable to students' needs and requirements.

**Key words:** combinatorial model, individual learning path modelling, university education.

### Introduction

The modern educational domain focuses on the concepts of individualization and differentiation with a student considered to be the focal point of the educational process. The topicality of the research is stipulated by the fact that modern education tends to be student-centred. Consequently, teacher's role comes to providing assistance creating an atmosphere for students' self-development and autonomy enhancement. Current shift of emphasis in the learning process results in permanent search for new methods and technologies that expand educational opportunities for every student.

The issue of necessity to shift from the traditional educational model to the student-centred one was initially considered by the Russian scientist I.S. Yakimanskaya. She claimed that Education is for All and for Each (Якиманская, 2013). This statement implies that despite being mass-available Education should be individually adjustable to students' needs. And an ILP is seen to be one of the most effective educational tools for making the ideas of individualization and differentiation feasible which in their turn lay the groundwork for student-centeredness. The ILP has been in focus of research among a number of scientists who identified its concept, determined the advantages of its implementation into the learning process and devised its structure (Stepanenko, Torosyan, 2016; Сысоев, 2013; Хуторской, 2005).

According to I.P. Podlasy (Подласый, 2007), a traditional educational model dates back to the theory of J.A. Komensky (1592-1670) and J.F. Herbart (1776-1841). Initially this model consisted of four stages (clarity, association, system and method). However, such new components as knowledge conveyance and awareness, mastering, synthesizing, practical implementation started to fill up the model. In the modern theory of education there are a lot of descriptions of its possible modifications. Despite the variety of models, scientists do not diverge considerably in understanding educational stages sequence. Traditionally an educational process starts with aim determination, followed by knowledge perception, skills practice and students' performance assessment.

Modelling results in creating an educational model which is considered to be an adjustment of teaching methods to a particular learning goal and working conditions (Азимов, Щукин, 2009).

A learning model is defined by A.V. Gvozdeva as a sequential, rationally managed and results-oriented foreign languages teaching project, which represents a hierarchy of goals to be achieved, the components of which are aimed at reaching the set goals by joint efforts of all the participants of the learning process (Гвоздева, 2008). As mentioned previously an educational process splits into several stages which are to be rigidly followed. In this paper the stages of foreign language learning on the basis of ILP are identified and their sequence is presented according to the order of their implementation.

The first stage (Diagnostic stage) requires diagnostics of students' skills in four types of speech (reading, writing, speaking, listening). Besides, it is essential to analyze students' educational needs and requirements, interests and preferences via feedback questionnaires and opinion polls and to correlate the findings to must-have competences that are to be developed according to the federal state standards of higher education.

The second stage (Selective stage) presumes a choice of the courses combination taking into consideration their compatibility in order to elaborate individual study routes (i) for every student. Students might be consulted by leading teachers in case they have any difficulties in selecting the courses to cover.

The third stage (Procedural stage) involves realization of the planned assignments reflected in individual study routes. At this stage students are to fulfill tasks according to their individually selected course syllabus. Simultaneously students are provided with all necessary instructions and learning guidelines.

The fourth stage (Reflexive stage) includes foreign language learning outcome presentation, mistakes detection and correction, professional post action review by a teacher in order to introduce amendments into the ILP and adjust them to further pedagogical support. It should be also noted that the reflexive stage is a two-pronged process in which not only teachers but also students should be deeply involved. Hence, three-dimensional control should be implemented, including teacher's control, self-control and collaborative control. Self-control is a form of control, which implicates conscious assessment of individual advancement and further adjustment of acquired competencies to the required ones. Collaborative control is a form of control when students are offered to assess their groupmates' progress basing on their own reasoning skills without having a relevant benchmark.

Consequently, the compliance with the abovementioned stages ensures the effectiveness of the foreign language learning process on the basis of ILP and enables both teacher and students to manage their educational process and reach optimal results. It is common knowledge that any learning process is to be based on approaches to education and didactic principles. The most effective approaches and principles to language learning on the basis of ILP are seen to be competence – based, communicative, student-centred ones.

The competence-based approach presumes complex knowledge acquisition. The aim of competence-based approach is to form and develop universal (key) competencies. In other words, the approach targets a student as a personality who is willing to implement acquired knowledge, abilities and skills in their professional activity (Вербицкий, 2009; Зимняя, 2006).

The student-centred approach is based on principles of individualization and differentiation and aimed at exposure of every student's unique individual features. The implementation of the student-centred approach enables students to manage their own learning process independently bearing responsibility for their learning outcome. Learners are closely involved in the decision-making process regarding what and how to be taught (Nunan, 1988; Stepanenko, Torosyan, 2016; Подласый, 2007; Хуторской, 2005; Якиманская, 2013). The courses included into the combinatorial model are to be selected by students in a definite compatibility that implicates students' deeper involvement into the learning process by opting for a combination of courses according to their educational needs and requirements.

The communicative approach is aimed at teaching students to orientate in a foreign language environment and develop their communicative skills. The process of foreign languages learning on the basis of communicative approach is directed at development of communicative competence in real-life conditions (Hymes, 1972; Richards, 2006; Widdowson, 1979).

To achieve the aim the following didactic principles have been selected:

- accessibility: it is a learning principle which correlates the learning content, methods and forms, knowledge load according to students' age and individual abilities, skills and interests;



- differentiation and individualization presumes the usage of different learning methods and forms in relevance to learning goals, educational stages, students' command of a foreign language and their aptitude for foreign languages;
- learning process management means thorough learning process planning, determination of learning material introduction sequence, assessment frequency;
- professional direction of learning process calls for professional tasks solution from the initial stage of education.
- autonomy presumes 'student-teacher' dependency limitation to exercise students' accountability for their learning process and to give them more freedom in managing their performance in compliance with their own needs and requirements (Benson, Voller, 2013; Benson, 2003; Holec, 1981; Little, 1991, 1995).

ILP realization should be accompanied by a relevant pedagogical support. The pedagogical support is considered by A.R. Murasova as cooperation between a teacher and a student when the latter is provided with more freedom in decision-making process (Мурасова, 2009). According to M. R. Bityanova pedagogical support does not imply that a student should be protected from difficulties. On the contrary, a student should be assisted in making relevant and responsible life choices (Битянова, 2000).

The research enabled to identify ILP related types of pedagogical support initially based on the viewpoint of E.A. Aleksandrova (Александрова, 2003). Below the types of ILP pedagogical support in terms of teacher's involvement degree, time-period, duration are presented.

Teacher's involvement degree:

- direct support which is realized in a close dialogue with a student providing face-to-face communication;
- indirect (distant) support means "student-teacher" interaction via distant forms (e-mails, social nets, Skype, Viber, Whats App).

Time period:

- preventive support enables teachers to anticipate possible difficulties among students and provide them with differentiated learning material;
- immediate support is given to a student just in time of an encountered difficulty.

Duration:

- prolonged support is applied when a student is unable to overcome a difficulty independently. This process lasts for a long time and requires teacher's observation skills and willingness to provide permanent assistance;
- occasional support is appropriate from time to time when a student asks for assistance and might be consulted on demand.

It should be noted that all the abovementioned types of pedagogical support can be applied variably depending on students' individual skills and abilities.

The role of a teacher in pedagogical support of ILP can be different. The four main roles of a teacher in modern educational process were defined:

- Moderator enables students to make decisions autonomously and unlock student's full potential. Providing assistance for students in selecting courses and devising ISR can be served as a bright example of this role.
- Facilitator helps students to tag their individuality, to apply methods of reflection, to bear responsibility for their learning outcome.
- Partner motivates equal partnership relations when teachers and students share information, discuss the learning outcomes, try to find solutions to encountered difficulties collaboratively.
- Coach helps students to identify critically important values, to explore new ways of personality development by elaborating self-generated solutions to problems.

Professional teacher should be able to play all roles variably depending on students' individual skills and abilities, command of foreign languages, their expectations and requirements. It is essential for a teacher to be flexible in applying types of pedagogical support and changing roles in compliance with students' requirements.

On the whole, the present paper is aimed at ILP modelling, introduction of a hands-on combinatorial model, which is based on the concepts of variability, diversity and compatibility that fits in with existing federal state standards of higher education. The model allows to implement in practice the ideas and concepts of individualization and differentiation aiming at learners' personality development through their deeper involvement into decision-making process regarding the content of the selected course syllabus.

The elaborated model (Figure 2) was introduced into the English language learning process for the students majoring in "Economics" and "Management" to validate the belowlisted hypotheses.

The first hypothesis is that ILP implementation into the foreign language learning process enables students to reveal their unique individual features. The second hypothesis is that the opportunity to select the proposed courses of the combinatorial model will boost students' motivation to learn foreign languages.

## Methodology

This study examines the possibility of the ILP implementation into the foreign language learning process on the basis of the elaborated combinatorial model which is devised to develop students' must-have competencies in the framework of a student-centered educational paradigm. This was achieved through:

- analysis and synthesis of methodic and psychological-pedagogical literature;
- analysis of foreign language educational programs, federal state standards of higher education for the graduates majoring in "Economics" and "Management", course books and guidebooks for bachelor students;
- opinion polls to survey students' attitudes towards ILP implementation into the foreign language learning process and how they felt about selecting courses to reveal their unique features;
- quantitative and qualitative analysis of research phase results, statistical processing of obtained results.

### *Participants and procedure*

The research phase of the project began on 08 February, 2016 in Moscow, Russia and lasted one term (5 months). It started with the diagnostic stage. The participants were 40 third-year students majoring in "Economics" and 35 third-year students specializing in "Management", aged 20-21, studying at Plekhanov Russian University of Economics. This choice is not accidental. The third-year students are more attuned to the idea of being in charge of their learning process. The students were tested to determine their level of foreign language command. The entry test results showed the B1, B1+ level of English according to the CEFR for languages. At this very stage the students were asked to fill in questionnaires in order to conduct their educational needs' analysis and to understand the most preferable aspects of the language to be covered till the end of the term. Having processed the survey results the courses syllabus were outlined in compliance with students' requirements. At selective stage students were offered to opt for three courses out of nine offered. The students were forewarned that a certain compatibility of courses should be followed and were provided with all possible combinations. According to the selected combination of courses an ISR was designed and handed out to each student. Individual study routes contained the selected combination of courses, set of assignments and deadlines for each assignment submission. At the procedural stage students were fulfilling the assignments and submitting the results according to the set deadlines. At these stage teachers were providing pedagogical support via consultations, face-to face communication, e-mail, chats, social network VKontakte. At the reflexive stage all forms of control (teacher's control, self control, collaborative control) were implemented. Having accumulated received information all the participants were assessed, all the mistakes were discussed individually, the students were offered possible further self-development scenarios. Moreover, learners actively participated in discussions of work results and shared comments on encountered difficulties in private or distantly. The reflexive stage ended with another research opinion poll introduced among the same participants. Students had to answer the following questions:

1. Do you think that the possibility to select courses helps you to bring out your unique features?
2. Do you reckon that ILP implementation into the learning process can be considered as a motivating factor to learn foreign languages? (Figure 1)

The predominant aim was to identify the outcome of ILP implementation into the learning process and determine its correlation with top teaching priorities such as students' motivation developing and their individual features revealing.

## Results and discussions

On the whole, the survey results may be summarized as follows. The first question targeted students' assessment of their disposition towards choosing courses ought to be covered as the most effective tool to identify their unique features in the context of learning forms variability and diversity. Figure 1 illustrates that 84 % of students would prefer such ILP implementation into the learning process to discover their individual peculiarities, 6 % expressed a negative view and 10 % gave a neutral answer. Analysis of the results reveals that the majority of the participants were in favor of courses selection as it best meets their educational needs and spots their unique features. Another 16 % of the respondents gave either a negative or a neutral view that shows students' reluctance to be in charge of their learning process and to shift from the model "I'm taught" to the model "I learn".

Figure 2 illustrates that 81 % of students consider that ILP implementation into the learning process serves as an efficient way to boost their foreign languages learning incentives. 8 % showed negative attitude towards its implementation and only 11 % gave a neutral answer. The study shows that the dominant number of the students supported ILP introduction into a foreign language learning process as it immeasurably contributes to their motivation enhancement. The remaining part of the respondents denied evident benefits from ILP implementation or demonstrated unawareness of them that indicates their unwillingness to bear the burden of responsibility for their own learning outcome.

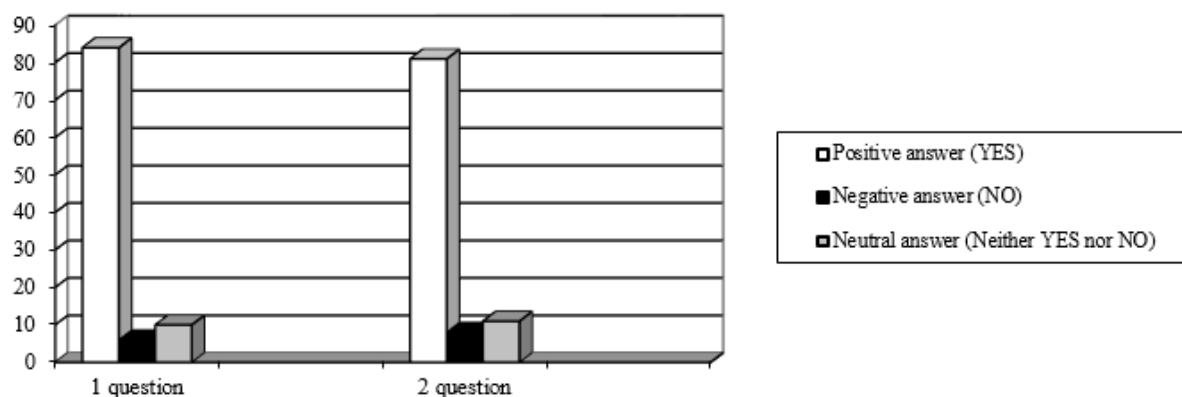


Figure 1. Opinion poll results 1 and 2.

The positive feedback collected from participants is considered to be a sound argument proving abovementioned hypotheses and can serve as the basis for further research and implementation of the combinatorial model into the teaching practice. The findings allow to judge that the model elaborated by the authors for this research session appeared to be effective and result-orientated. The model is based on fundamental methodological framework and ensures the development of students' general and professional competencies according to the federal state standards of higher education. The courses reflected in the model might be altered according to the university curriculum, students' needs and requirements, set learning goals. The model is to be embedded into all levels of education in institutions of higher education.

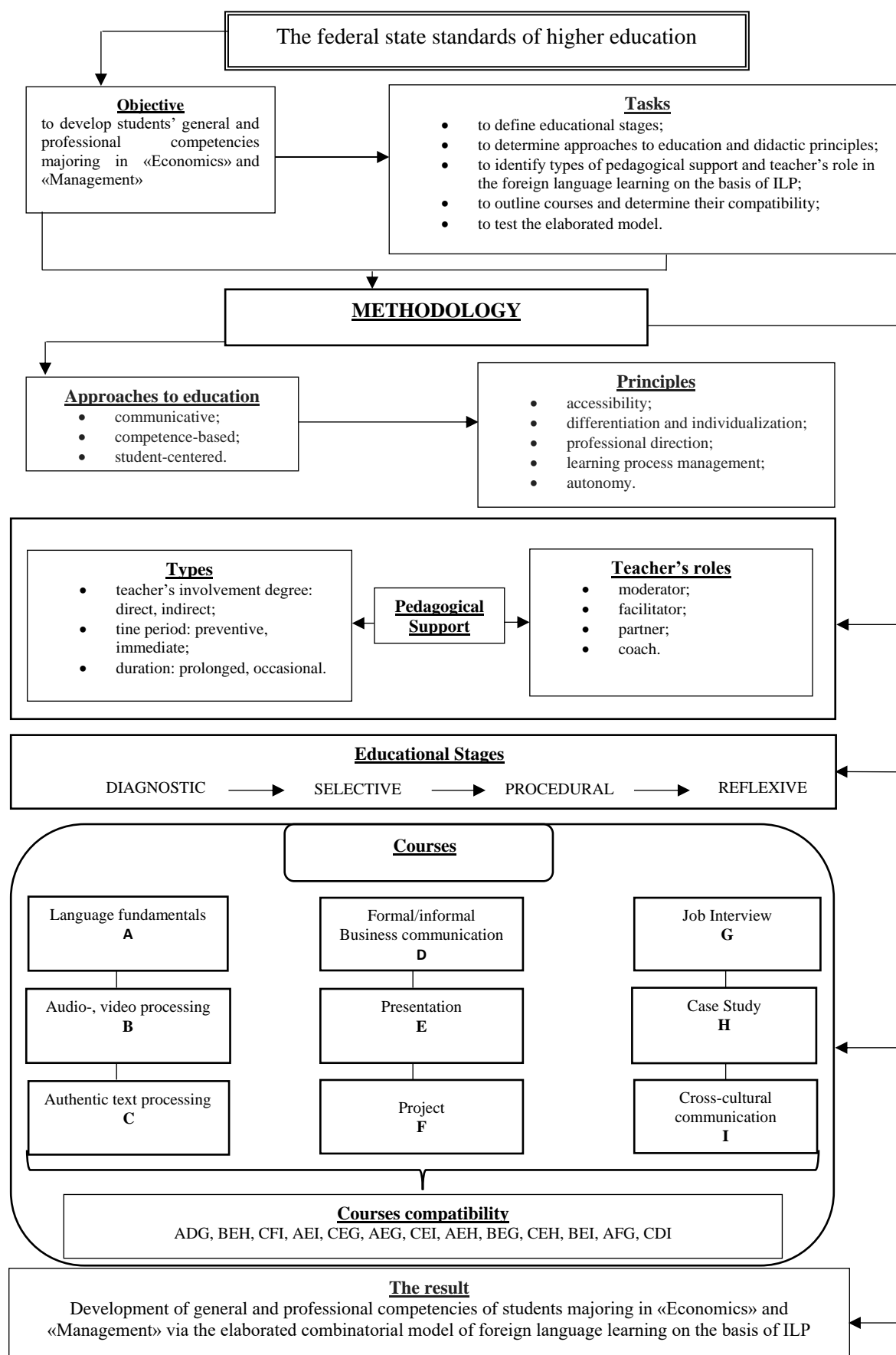


Figure 2. The combinatorial model of the foreign language learning on the basis of ILP.

## Conclusions

Russian modern educational domain has been developing divergently and has been focused on the concepts of individualization and differentiation. According to the above presented analysis the authors have come to the below-listed conclusions, which confirmed the abovementioned hypotheses.

The proposed combinatorial model is devised in complete compliance with the federal state standards of higher education and is based on the ideas of variability and diversity. The model implementation requires application of the identified approaches to education and didactic principles, adherence to the determined educational stages. The research results reveal that the possibility to select a combination of courses best meets learners' individual features and requirements. The offered ILP combinatorial model opens breaking opportunities and frontiers for the foreign language learning process management both by students themselves and by teachers using different types of pedagogical support. It seems extremely important to preserve close collaboration "student-teacher" by giving the former opportunity to be in charge of their learning process and the latter to shift from a traditional teacher's role to an innovative one becoming a coach, facilitator, partner or moderator in dependence to the given pedagogical scenario.

## Bibliography

1. Benson P., Voller P. (2013). *Autonomy and Independence in Language Learning*. NY: Routledge.
2. Benson P. (2003). Learner Autonomy in the Classroom. In Nunan D. (Ed.) *Practical English Language Teaching*. New York: McGraw Hill.
3. Holec H. (1981). *Autonomy and Foreign Language Learning*. Oxford: Pergamon.
4. Hymes, D.H. (1972) "On Communicative Competence" In: J.B. Pride, J. Holmes (Eds.). *Sociolinguistics*. Harmondsworth: Penguin, pp. 269 – 293. [online] [06.11.2016]. Available at <http://www.homes.uni-bielefeld.de/sgramley/Hymes-1.pdf>
5. Little D. (1991). *Learner Autonomy 1: Definitions, Issues and Problems*. Dublin: Authentik.
6. Little D. (1995). Learning as Dialogue: The Dependence of Learner Autonomy on Teacher Autonomy. *System*, Vol. 23(2). Great Britain: Pergamon, pp. 175 – 181. [online] [06.11.2016]. Available at <https://pdfs.semanticscholar.org/98cc/d256a30f03fd1fdd7c09c38a498d69cee047.pdf>
7. Nunan D. (1988). *The Learner-Centered Curriculum*. Cambridge: Cambridge University Press.
8. Richards J. C. (2006). *Communicative Language Teaching Today*. New York: Cambridge University Press. [online] [06.11.2016]. Available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.618.3876&rep=rep1&type=pdf>
9. Stepanenko K., Torosyan L. (2016). The Modern Educational Domain: Prerequisites and Prospects for Individual Learning Path Development. *Journal of Language & Education*. Vol. 2 (1), pp. 39 – 47. [online] [06.11.2016]. Available at <https://jle.hse.ru/data/2016/04/14/1129630052/Katerina%20Stepanenko,%20Liya%20Torosyan.pdf>
10. Widdowson H. (1979). *The Communicative Approach and its Application*. Oxford: Oxford University Press.
11. Азимов Э. Г., Щукин А.Н. (2009). *Новый словарь методических терминов и понятий: теория и практика обучения языкам (New Dictionary of Methodological Terms and Concepts)*. Москва: Изд-во ИКАР. [online] [06.11.2016]. Available at [http://szlavintezet.elte.hu/russian/segedanyag/tanari\\_ma\\_anyagok/azimov\\_slovar.pdf](http://szlavintezet.elte.hu/russian/segedanyag/tanari_ma_anyagok/azimov_slovar.pdf)
12. Александрова Е.А. (2003). *Педагогическая поддержка культурного самоопределения как составляющая педагогики Свободы (Pedagogical Support of Cultural Identity as an Integral Part of Pedagogy of Freedom)*. Саратов: Издательство Саратовского университета. (in Russian)
13. Битянова М.Р. (2000). В начале совместного пути (At the Beginning of the Way Collaboratively). *Школьный психолог*, № 10. с. 2. (in Russian)
14. Вербицкий А.А. (2009). *Личностный и компетентностный подходы в образовании: проблемы интеграции (Student-Centered and Competence-Based Approaches in Education: Integration Issues)*. Москва: Логос. (in Russian)
15. Гвоздева А.В. (2008). *К вопросу о проектировании методической модели обучения иностранным языкам в рамках интегративно-дифференцированного подхода (On the Issue of Building up a Model of Learning Foreign Languages within the Framework of Integrated and Differentiated Approach)*. Przemysl: Naukaistudia. с. 15 – 18. (in Russian)

16. Зимняя И.А. (2006). Компетентностный подход: каково его место в системе современных подходов к проблеме образования? (Competence-Based Approach: where is its Place in the System of Modern Approaches to the Issues of Education?). *Высшее образование сегодня*, № 8, с. 20 – 26. (in Russian)
17. Мурасова А.Р. (2009). *Педагогическое сопровождение культурного самоопределения студентов (Pedagogical Support of Students' Cultural Identity)*. Ульяновск: УЛГТУ. (in Russian)
18. Подласый И.П. (2007). *Педагогика: Кн.2: Теория и технологии обучения: учебник для студентов вузов. 2-е изд., испр. и доп. (Pedagogics. Handbook II: Theory and Technology of Education: Manual for Graduate Students. (2<sup>nd</sup> ed.))*. Москва: Владос. (in Russian)
19. Сысоев П.В. (2013). Обучение по индивидуальной траектории. (Learning via Individual Education Path). *Язык и культура*. № 4(24), с. 121 – 131. (in Russian)
20. Хуторской А.В. (2005). *Методика личностно-ориентированного обучения. Как обучать всех по-разному? (Student-Centered Education. How to Teach `Differently?`)* Москва: Владос-пресс. (in Russian)
21. Якиманская И.С. (2013). *Основы личностно ориентированного образования (Basics of Student-Centered Education)*. Москва: Бином. (in Russian)

## Team-Based Learning in Business English

Jelena Stepanova Mg. sc. soc.  
University of Latvia, Management College, Latvia  
[helen\\_stepanova@inbox.lv](mailto:helen_stepanova@inbox.lv)

**Abstract:** Business English is a main language of communication in the international business environment. The implementation of appropriate teaching-learning approach, such as team-based learning, allows students to engage into educational process and demonstrate higher achievements in language acquisition. The aim of the article is to analyze the theory-grounded investigation to trace if the team-based learning is good for Business English teaching and therefore serves as approbation of this stage of the research to continue it, as well as what the priorities are and if the learners accept them. The paper is an example of an interdisciplinary research and lies at the border of such areas as linguistics, educational sciences, sociology and psychology. The article reflects the results of empirical research on team-based learning implementation in Business English course in Latvian Business College where participated 40 first-year students, who mastered their language skills and communicative competences reaching an academic success through this approach. Mixed methods were used as the approach to research design, analysis of scientific literature, questionnaires and observations. Analyzing the results of the research it can be told that team-based learning in teaching Business English proved to be successful tool as it assisted to academic success in linguistics, communication and understanding of the business English discipline through teamwork and critical thinking and majority of students (82-100 %) gave a positive feedback. The research demonstrated that team-based learning gives more freedom and authorizes the students to be more responsible for their own studies and knowledge as the process involves both individual work and teamwork and the contribution to the team is significantly important there. Such self-determination leads to success as in academic studies as in life-long competences and proves team-based learning approach to be a useful and transformative tool for teaching Business English.

**Keywords:** team-based learning, Business English, university education.

### Introduction

Education has changed its essence, now it is not a pure theory that students passively acquire on the lectures, it is rather an active practice, which students do in the classroom. The more students are involved in a hands-on training, the higher the result is, the better their achievements are at the end of the course and the deeper their motivation is in respect of further studies, life, work and career.

Among the different types of profession-oriented education nowadays, business education becomes more popular. It includes a wide range of skills, which affect not only professional knowledge, but also personal characteristics such as personality development, communication skills, proactivity, ability to solve conflicts, meet challenges and develop creative approach to entrepreneurship (Fillis, Rentschler, 2010). In regard to this, tougher requirements to the quality of business education appear. Business colleges and universities should arrange such an educational process that includes the development of all mentioned above skills. These requirements are put forward as by the Ministry of Education, by the business environment- employers, as well as by the students and their parents.

One of the most important discipline in business education is Business English. Since English is one of the two foreign languages which modern European citizens are expected to know according to Common European Framework of Reference (Council of Europe, 2001, 4), in addition, all communication in the modern business world in Europe is carried out in English. Thus, understanding the importance of business education for the modern society and the place of business English in it- it is important not to stand still in the teaching methods, but constantly improve it adapting new approaches for the implementation of the most active practical training.

For many years in post-secondary education problem-base learning (PBL), case-based learning and concept-base learning have been used with varying degrees of success. However, there is a growing body of evidence that team-based learning (TBL) is a successful method to incorporate peer teaching in teams with effect for learning outcome (Haidet, Kubitz, 2014). Team-based learning (TBL) is a unique concept to the 21st century pedagogy. It incorporates various theories of adult learning, such as cooperative theory (May, Doob, 1937), theory of margin (McClusky, 1970), three dimensions of

learning model (Illeris, 2009), model of learning process (Jarvis, 1987), lifelong and self-directed learning (Tough, 1967), transformational learning (Mezirow, 1991) and pedagogies of engagement (Edgerton, 2001) (Nagaswami, Defouw, 2011).

Team-based learning concept includes grouping students into diverse teams of 5-7 students that work together throughout the class (Michaelsen, Bauman-Knight, 2004). There is a three-phase process which includes the pre-class preparation where the teacher has to organize the learning materials to enable students to take responsibility on their own and their peers' learning process with following in-class team discussion. If students take individual accountability it will provoke the better team interaction. This accomplishes both competences-what individuals know or are able to do in terms of knowledge, skills and attitude and productivity - extent to which individuals can adapt to generate new knowledge and continue to improve performance. The second phase of the process includes regular testing at the beginning of a new theme. First, the students complete the individual Readiness Assurance Test (iRAT) and then they complete the same test with their team- members -the group Readiness Assurance Test (gRAT). The students get two marks- for individual test and for group test. Usually, the tests are multiple choice; however, open questions also might take place. Having completed the individual and group tests, the students discuss the answers with teacher and other teams. This discussion provokes students to appeal questions that they got incorrect. Appealing the questions and discussing it, the students review the material, evaluate their understanding and defend the choice they made. To conclude the Readiness Assurance Process, the teacher gives a lecture that focuses on concepts with which students struggled the most (Sweet, Michaelsen, 2012). Afterwards the teacher introduces the additional practice exercises- the third phase of the teaching-learning process.

The terms *team*, *work team*, *group*, *work group*, *cross-functional team*, and *self-directed team* are often used interchangeably. Whatever the title, a team is a small number of people with complementary skills who work together for a common purpose. A key element in team success is the key concept of synergy, defined by a situation where the whole is greater than the sum of the parts. Team provides a depth of expertise that is unavailable at the individual level. Teams open lines of communication (Lehman, DuFrene, 2011). The differences between the team, pseudo-team and group are summarized in the Table 1.

Table 1

**Team vs. Pseudo-Teams vs. Group Criteria**

<b>Team</b>	<b>Pseudo-Team</b>	<b>Group</b>
Synergy	Anti- synergy	Individualism
Win-win	Win-lose	Lose-lose
First to understand then to be understood	No understanding	First to be understood then to understand
Active listening	Passive listening	Lack of listening
Common goals	Partial common goals	Lack of common goals
Positive roles	Negative roles	Lack of roles
Transformation	Partial transformation	Lack of transformation

Simple grouping students into a team structure does not signify that they automatically start functioning as a team. Such group should go through the process of development to begin to function as a team. Members of the team have to be trained to behave as team members in the following areas- problem solving, goal setting and conflict resolution to develop the synergy and make the process of collaboration transformative for all participants (Lehman, DuFrene, 2011).

Successful team work increases productivity, involvement, engagement and creativity, besides such successful teams increase information and knowledge exchange, there is an increased diversity of views and acceptance of solutions and as a result- higher performance level (Thill, Bovee, 2014).

The main risk is to create a pseudo-team where no one is interested into results and higher achievements. This is a task for the teacher to assist in creating such a team where every member is willing to commit, cooperate, communicate and contribute to the teamwork and to establish 'the three R's' - roles, rules and relationships (Lehman, DuFrene, 2011).



The great theoretical basis of team-based learning was provided by P. Hrynchak and H. Batty (2012). According to them, the main emphasis in team-based learning is on the constructivist learning, in which the “focus is on the mental representation of information by the learner” (Svinicki, 2004, 242; Brame, 2013).

In team-based learning, the teacher carefully plans the lesson’s objectives, prepares the Readiness Assurance Tests and then acts only as a guide who assists in the learning process. The teacher’s choice of the tasks allows students to re-evaluate their experience, as Readiness Assurance Tests observe students’ experiences, comparing their understanding with the understanding of the questions with peers-team members and, as a consequence, construct new understanding (Brame, 2013).

The scientist R. Hake (1998) from Indiana University investigated team-based learning for many years and concluded that team-based learning and flipped classrooms have a lot in common. R. Hake researched the teaching of 2084 students in 14 physics courses in passive, teacher-centered way of teaching versus interactive engagement methods. At the end of the research he found out that students involved into interactive methods demonstrated twice higher gains than in the traditionally taught way (Hake, 1998). Later team-based method was broadly introduced in the USA in the healthcare education, proving its effectiveness.

Replacing half of the lectures with TBL activities, such as Readiness Assurance Tests, discussions and case studies teachers could see much higher performance on the exams. Additionally, the attitude toward the lectures and engagements have changed dramatically, what proves it is more effective learning strategy (Koles, Stolfi, 2010).

This article is a part and the first stage of empirical research of the author’s PhD dissertation. The author would like to research how team-based learning in teaching business English allows students to engage into educational process and demonstrate higher achievements in academic studies. The aim is to investigate teaching business English via team-based learning on the example of four groups at Latvian Business College (LBK) and to define the dynamic links of the educational process between the team-based learning and the learners’ success in this subject. The object of the research is learners’ achievements in acquiring business English through team-based learning. The team-based learning is appropriate for creating dynamic links of the educational process leading to an effective way of incorporating peer-group teaching with enthusiasm for learning of business English:

- it provides optimal educational settings to trust, mutual respect, interdependence and positive attitude towards learning;
- it challenges lecturers to be more creative and flexible with curriculum design.

The results can serve as approbation of this stage of the research to continue it, as well as it provides the information what the priorities are and if the learners accept them. The present paper is an example of an interdisciplinary research and lies at the border of such areas as linguistics, educational sciences, sociology and psychology.

## Methodology

The paper focuses on illustration of team-based learning implementation in Business English course on the faculty of Business Administration at Latvian Business College.

The research had been conducted from February 2016 until June 2016. In the research participated 40 first-year students, age from 18 till 45 years old. The English language proficiency levels according to the results of the placement tests are A2 (Pre-Intermediate) in two groups and B2 (Upper-Intermediate) in other two groups.

Humanist, constructivists, as well as social learning and language learning theories were applied within the frame of this research.

The methods of the research included 1) study, analysis and evaluation of scientific literature; 2) pre-course, mid-course and after-course questionnaires and observations were used as a research method to evaluate the expectations of the students towards TBL in business English teaching/learning and then the success of TBL in business English Classes.

Providing the hypothesis of the research is - TBL is appropriate for creating dynamic links of the educational process leading to an effective way of incorporating peer-group teaching with enthusiasm for learning of Business English:

- it arranges optimal educational settings to trust, mutual respect, interdependence and positive attitude towards learning;
- it challenges lecturers to be more creative and flexible with curriculum design.

The following criteria were formulated to measure the students' achievements: four language skills: speaking, writing, reading and listening, critical thinking, team-work skills and perspective transformation.

## Results and Discussions

To investigate the outcome of TBL application in teaching business English according to the settled criteria, the analysis of the pre-course questionnaires, mid-course questionnaire and post-course questionnaires was made.

In order to analyze the previous English learning experience of the students, the students were asked if they faced any of these approaches: teacher-centered, student-centered, team-based learning, case-study learning, project-based learning, game-based learning, problem-based learning. The analysis showed that majority faced teacher-centered (24 responses) and student-centered (17 responses). However, team-based learning (12 responses) has been faced only by minority of the students and most of them had no idea about this method.

Then, the students provided the information on the achievements, which they expect to get from the course: life-long competences, 4 language skills: speaking, reading, writing, listening skills, critical thinking skills, skills to work in teams. Analyzing their expectations and replies, it is obvious that the main skill the students desire to obtain is 'speaking skill', and then follow 'skills to work in teams', which completely fits the purposes of TBL approach. The other most often mentioned skills the students hope to obtain are 'listening skills', 'business vocabulary', 'writing skills' and 'skills to conduct the negotiations'. These skills are also parts of TBL teaching approach, as working in teams the students not only speak and work in teams, but also listen carefully to their team members, write the individual and group Readiness Assurance Tests, extend the business vocabulary and negotiate with each other. One more criteria and the question was if the students would like to work only in teams; the opinions shared 45 % of students answered that they would like to work only in teams, and 55 % replied that would like to work not only in teams. However, the TBL approach satisfies both needs as it includes iRAT as an individual work and gRAT as group work. Besides according to the pre-course questionnaires, the students even if they had never faced TBL before hoped that it could be useful and transformative for them.

The analysis of the outcome of the TBL approach in business English measuring the students' achievements according to the established criteria is presented in the following graph (Figure 1).

Analyzing the results of the survey, it is possible to conclude that:

- 100 % of students agree that the lessons, where TBL approach was used, were clear and interesting;
- 92 % of students believe that the lessons increased their understanding of the subject;
- 87 % confirm that the lessons improved their analytical and critical skills;
- 95 % of students agree that the lessons improved their skills to learn in teams.

Summarizing the main language skills and students' evaluation of contribution of TBL into teaching-learning of these four skills- speaking, listening, reading and writing, it is possible to make a conclusion that:

- 92,5 % of students think that lessons improved their READING English skills;
- 85 % assume that lessons improved their LISTENING English skills;
- 85 % confirms that the lessons improved their SPEAKING English skills;
- 82,5 % of students believe that the lessons improved their WRITING English skills.

To sum up the survey it should be told that 90 % agree that they liked working in teams during the course and 87,5 % acknowledge that team-based learning was useful and transformative as they expected at the beginning of the course.

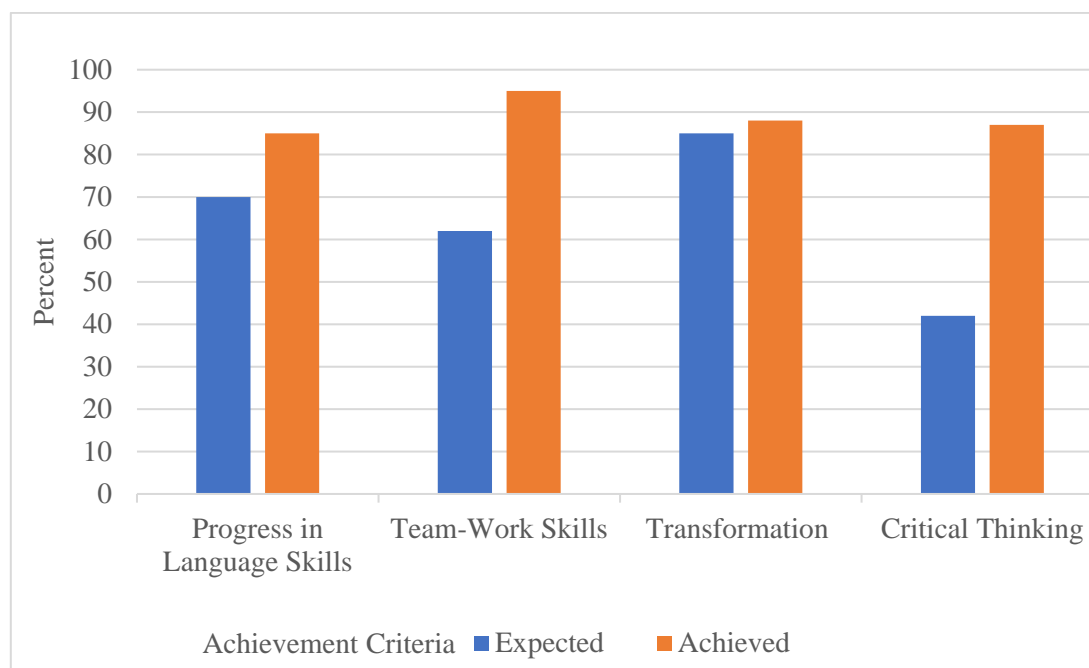


Figure 1. Analysis of TBL outcomes in business English.

Thus, it is possible to conclude that the main expectations of the students were justified and even over justified- 70 % of students expected to acquire the speaking skills in pre-course survey and in the post-course survey 82,5 % confirmed that they had improved their speaking skills. Besides 62 % planned to acquire skills to work in teams and 95 % agreed that they had acquired these skills. Also, 85 % supposed that the TBL approach might be useful and transformative for Business English acquisition and the reality was even better and 87,5 % found it on completion of the course.

Thus, summarizing the questionnaires analysis it can be told that team-based learning in teaching business English proved to be successful tool as it assisted to academic success in linguistics, communication and understanding of the business discipline through teamwork and critical thinking.

## Conclusions

Team-based learning approach is a useful and transformative tool for teaching Business English. The process involves individual work and teamwork, the contribution to the team is important too, as according to this approach, the peer evaluation is done at the end of the course and it influences the final mark of the students. The students whose names are the most often mentioned by the peers in the peer evaluation form get extra points to the final mark.

However, in spite of the very positive feedback from majority of students (82-100 %), it is important to notice the minority of students (5-15 %) who gave the neutral or negative feedback. It is crucial to understand the reasons why TBL was not so successful tool for their academic achievements. According to the observations, the reasons could be as follows:

- Poor language knowledge, as it was impossible to form completely homogeneous groups with absolutely equal language level;
- Poor attendance, in some groups the attendance was so low because of different personal reasons and the students skipped the first part of the lectures with TBL Readiness Assurance Tests.
- Personal characteristics- shyness, lack of self-assurance, probably caused by circumstances, as homesickness, as most students arrived to study from abroad and went through the process of adaptation and integration.
- Attitude to studies, as not everyone prepared for RAT at home properly.

Besides, according to the constant observations on the lessons, it might be concluded that the number of tests during one-term course should not exceed half of the lectures' number; otherwise, the students are overwhelmed with constant testing and feel suppressed. Writing the tests, the teacher should be creative

and formulate the questions corresponding to the language level and studied materials. The materials for studies should be well arranged with appropriate tasks for preparation. However, the tests should not include only such kind of questions, which demand the pre-class preparation; there should be questions, which involve the general experience and knowledge, thus the students start thinking critically and analytically. Then, the further discussion of the answers in teams might shift the students' paradigm and increase the understanding of the subject.

Finally, the main observation is that team-based learning gives more freedom and authorizes the students to be more responsible for their own studies and knowledge. Such self-determination might lead only to success as in academic studies as in life-long competences.

The teacher to contribute more to the success of TBL should:

- Pay more attention to team-formation, in order to create teams as productive and successful as possible. The special tests determining the roles in the teams should be done at the beginning of the course. However, it must be told that even if the teams should be formed once for the whole term, for the teams it this empirical research it was impossible because of poor attendance in some groups;
- Prepare creative RATs and well-arranged materials, as well as the list of tasks to prepare for the next test, providing home reading and quizzes for it;
- Support the students who face personal difficulties on the lessons explaining more if necessary and involving everyone in the team in general discussions;
- Develop better grading system for those who do not contribute to the teamwork.

## Bibliography

1. Brame C. (2013). *Team-Based Learning. USA*: Vanderbilt University Center for Teaching. [online] [14.11.2016]. Available at <https://cft.vanderbilt.edu/guides-sub-pages/team-based-learning/>
2. Council of Europe. (2001). *Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR)*. Strasbourg: Language Policy Unit. [online] [14.11.2016]. Available at [http://www.coe.int/t/dg4/linguistic/Source/Framework\\_EN.pdf](http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf)
3. Edgerton R. (2001). *Education White Paper*. [online] [14.11.2016]. Available at [http://www.faculty.umb.edu/john\\_saltmarsh/resources/Edgerton%20Higher%20Education%20White%20Paper.rtf](http://www.faculty.umb.edu/john_saltmarsh/resources/Edgerton%20Higher%20Education%20White%20Paper.rtf)
4. Fillis I., Rentschler R. (2010). The Role of Creativity in the Entrepreneurship. *Journal of Enterprising Culture*, Vol. 18. [online] [14.11.2016]. Available at <https://pdfs.semanticscholar.org/a249/25292643de97035bf40b380ec3575b535c01.pdf>
5. Haidet P., Kubitz K., McCormack W.T (2014). Analysis of the Team-Based Learning Literature: TBL Comes of Age. *J Excell Coll Teach*, Vol. 25(3-4), pp. 303 – 333. [online] [14.11.2016]. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4643940/#R39>
6. Hake R. (1998). Interactive-Engagement Versus Traditional Methods: A Six-Thousand-Student Survey of Mechanics Test Data for Introductory Physics Courses. *American Journal of Physics*, Vol. 66(1), [online] [14.11.2016]. Available at [http://www.montana.edu/msse/Data\\_analysis/Hake\\_1998\\_Normalized\\_gain.pdf](http://www.montana.edu/msse/Data_analysis/Hake_1998_Normalized_gain.pdf)
7. Hrynchak P., Batty H. (2012). The Educational Theory Basis of Team-Based Learning. *Medical Teacher*, Vol. 34, pp. 796 – 801.
8. Illeris K. (Ed.) (2009). *Contemporary Theories of Learning. Learning Theorists...in their Own Words*. UK: Routledge.
9. Jarvis P. (1987). *Adult Learning in the Social Context*. London: Croom Helm.
10. May M.A., Doob L.W. (1937). *Competition and Cooperation*. NY: Social science research council. [online] [14.11.2016]. Available at <https://babel.hathitrust.org/cgi/pt?id=mdp.39015008023809;view=1up;seq=1>
11. Koles P., Stolfi A., Borges N.J., Nelson S., Paremelee D.X. (2010). The impact of team-based learning on medical students' academic performance. *Academic Medicine*, Vol. 85 (11), pp. 1739 – 1745.
12. Lehman C.M., DuFrene D.D. (2011). *Business Communication*. (16<sup>th</sup> ed.). USA: South-Western Western Cengage Learning.

13. McClusky H.Y. (1970). An Approach to a Differential Psychology of the Adult Potential. In Grabowski S. M. (Ed.) *Adult learning and instruction*. Syracuse, N.Y.: ERIC Clearinghouse on Adult Education.
14. Mezirow J. (1991). *Transformative Dimensions of Adult Learning*. Sanfrancisko, USA: Jossey-Bass Inc., Publishers.
15. Michaelsen L.K., Bauman-Knight A., Fink L.D. (2004). *Team-based Learning: A Transformative Use of Small Groups in College Teaching*. USA: Stylus Publishing.
16. Nagaswami S., Defouw D., Compton S. (2011). Team-Based Learning in Anatomy: An Efficient, Effective, and Economical Strategy. *Anatomical Sciences Education*. [online] [14.11.2016]. Available at [https://www.researchgate.net/publication/51715967\\_Team-Based\\_Learning\\_in\\_Anatomy\\_An\\_Efficient\\_Effective\\_and\\_Economical\\_Strategy](https://www.researchgate.net/publication/51715967_Team-Based_Learning_in_Anatomy_An_Efficient_Effective_and_Economical_Strategy)
17. Sweet M., Michaelsen L.K. (Eds.). (2012). *Team-Based Learning in the Social Sciences and Humanities: Group Work that Works to Generate Critical Thinking and Engagement*. Virginia, USA: Stylus Sterling.
18. Thill J.V., Bovee C.L. (2014). *Excellence in Business Communication*. (10<sup>th</sup> ed.). UK: Pearson. [online] [14.11.2016]. Available at <https://yfresources.files.wordpress.com/2014/09/excellence-in-business-communication-bovee-thill-10th-ed-2013.pdf>
19. Tough A.M. (1967). *Learning without a Teacher: A Study of Tasks and Assistance During Adult Self-Teaching Projects*. Toronto, Canada: The Ontario Institute for Studies in Education. [online] [14.11.2016]. Available at <http://allentough.com/books/lwt/intro.pdf>

## **Academic Discourse and its Implications for Higher Education: Students' Cognitive Flexibility Development and its Backward Input in Academic Discourse Development**

**Elena V. Tikhonova**<sup>1</sup> PhD; **Natalia V. Rezepova**<sup>2</sup> PhD.

RUDN University, Russia<sup>1</sup>; Plekhanov Russian University of Economics, Russia<sup>2</sup>

[etikhonova@gmail.com](mailto:etikhonova@gmail.com)<sup>1</sup>; [natalia0309@list.ru](mailto:natalia0309@list.ru)<sup>2</sup>

**Abstract:** this paper is aimed at the Cognitive Flexibility analysis as a component of Sophisticated Thinking and possible prospects for its enhancement through both teachers' and students' academic activities. To test potential input of academic activities in cognitive flexibility development a special study was conducted. Throughout extra English classes with 5-month duration participants of the study (156 students in general) discussed research papers of their lectures as topics for the discussion. The papers were devoted to the students themselves as a part of the educational content interpreting and clarifying on the issues being of high interest among the youth. Thus, processing the papers supposed simultaneous students' involvement into academic activities. Prior to the experiment sessions and after, all participants were encouraged to pass Stroop Colour Word Test and Free association test to measure their current level of Cognitive Flexibility. After the last session on papers' discussion the students were simultaneously asked to perform Self-Reported Questionnaire. Both of the monitoring instruments are meant to verify each other to reveal and evaluate ongoing and subsequent levels of students' Cognitive Flexibility (degree of being categorical/rigid or lenient). This was measured by means of clarifying on the skills regarding utilization of elicited cause-and-effect connections; perceiving ability to be involved in teamwork; encouraging interest to new approaches of the renowned agenda; refusing from non-reversible reasoning; changing attitude to academic activities. The authors put forward the hypothesis suggesting a deliberate choice of the participants: as first and second-year students have vague motivation and relatively low level of Emotional Intelligence, they may have lowered Cognitive Flexibility. Still, five and six-year students are able to demonstrate far more developed skills mostly based on their working experience that supposes involvement into working atmosphere, thus contributing to enhanced Cognitive flexibility and less rigidity. Surprisingly, the results obtained through Self-Reported Questionnaires demonstrated the impressive rise in the participants Cognitive Flexibility level immediately after the third study session. The aforesaid witnesses that such activities allow research papers to be more practically-oriented, that, in its turn, inevitably increases their validity and further incorporation in formation of modern educational design.

**Keywords:** academic discourse, cognitive flexibility, higher education, sophisticated thinking.

### **Introduction**

Currently Russia is deeply involved in international educational policies of European countries. Topical political trends have a direct impact on the formation of educational environment for modern training of highly qualified specialists in undergraduate, graduate and post-graduate programs. Along with the formation of a unified educational system, there is a scientific space integration – process implemented through consolidated efforts of all countries.

These facts necessitate a development of scientific research competence of teachers as a part of their professional portfolio within modern educational landscape. Still, university research activities should not be unidirectional. Joint involvement of teachers and students will predetermine multitasking of educational communication, which, in turn, will promote and enhance cognitive flexibility, in parallel with a change in the nature of the following interaction chain: teacher-students, students-students (teamworking, mutual respect, new approach to research activities). On top of that, these activities will clearly make students think and analyze rather than assign someone else's point of view, subsequently creating prerequisites for enhancement of Sophisticated Thinking. These all inevitably demand active students' engagement in universities' research activities, and the issue about validity of scientific research based on empirical rather than theoretical study arises. Moreover, postindustrial stage of modern society development introduces new requirements to educational system aimed at full renovation of educational design landscape as mere incorporation of new educational elements into existing educational system cannot fit the demands of nanotechnological industry. It is self-evident that such renovation is impossible without intensifying both teachers and students' research activities.

Thus, reality disposes Complex Problem Solving; Critical Thinking; Creativity; People Management; Coordinating with Others; Emotional Intelligence; Judgement and Decision Making; Service Orientation; Negotiation; Cognitive Flexibility as key criteria to professional competencies of future specialist (Tikhonova, Kudinova, 2016). The authors of the paper believe that Sophisticated Thinking (ST) incorporating such constituents as Critical Thinking, Cognitive Flexibility, Complex Problem Solving, Creativity and Emotional Intelligence can be one of the responses suggested in novel conditions to be appealing to academic community and university youth. The problematic issue about modern university youth lies in their unwillingness and inability to process information and make thorough decisions on its basis. As a matter of fact, students substitute their own thinking and generate ideas with authoritative and approved statements which, in its turn, is explained with underdevelopment of Lower Order Thinking Skills and evident preference towards Higher Order Thinking Skills that are not able to benefit without proper acquisition of Lower Order Thinking Skills (Tikhonova, Kudinova, 2015).

When an individual accomplishes a complex assignment one's behavior needs adjusting to the surrounding circumstances in which the task is being implemented. Still, these circumstances persist to alter as the assignment extends, consequently in order to be flexible an individual has to consider these conditions on a recurrent basis. On the one hand, cognitive flexibility vitally hinges on consideration processes, e.g. to be cognitively flexible, an individual needs to distinguish the surrounding conditions that could intermeddle with an ongoing assignment. Conversely, cognitive flexibility is also applied to the way people introduce their knowledge about an assignment and the feasible schemes in which to interact with. Human actions are managed by an individual's knowledge with reference to the values of the environmental criteria. This knowledge has been acquired through the use of adopting previous comparable situations. Still, this knowledge has to be revised when the scenario changes in order to redefine possible updated task demands/requirements. It results in Cognitive Flexibility Theory interpretation which states that people who represent the task from complex perspectives can freely expound situational shifts in the surroundings and, therefore, can be more cognitively flexible. So, these individuals have flair for rapid restructuring their knowledge hence adjusting their replies to drastically transforming situational requirements.

J.P. Guilford (1967), being a pioneer in acknowledging *cognitive flexibility (CF)* in early prototypes of creativity and intelligence studies, set off a flow of a profound interest towards the phenomenon. Currently, CF is considered to be a distinguishing feature of human cognition and intelligent behavior (Boroditsky, Neville, 2010; Deak, 2003; Jordan, Morton, 2008). There are various behaviors that are viewed and regarded as flexible (e.g., Complex Problem Solving; Critical Thinking; Judgment and Decision Making;), accordingly, cognitive flexibility can be inferred in numerous ways. Some interpret it as a unique cognitive ability or skill (Aron, 2008; Smith, Kosslyn, 2014) while others consider it to be a feature of different cognitive processes (Blaye, Bonthoux, 2001; Plunkett, 2005).

To scrutinize cognitive flexibility as a specific, unique ability, it is crucial to revise "shifting" being understood as a person's ability to promptly adapt from one judgement, requirement, or assignment to another while giving a feedback. This generalized statement is solidly underpinned by the view of H.M. Geurts (2009) who outlined that "one component of executive function is cognitive flexibility, which refers to the ability to shift to different thoughts or actions depending on situational demands", and A. Diamond (2006) who declared that "cognitive flexibility ... is the ability to flexibly switch perspectives, focus of attention, or response mapping". Regarding CF within the task-switching paradigm (Vandierendonck, Liefoghe, 2010) it is necessary to highlight the aspect whether shifting is the same phenomenon as CF or is a mere tool involved in CF.

An opposite approach has been introduced by researchers (Barsalou, 1983; Barsalou, 2003; Shafto, Coley, 2007; Sloutsky, Fischer, 2008) who analyze cognitive flexibility as a property of various cognitive processes (e.g., flexible categorisation, flexible language use, flexible feedback in induction tasks). In all this research array, the key idea is that flexibility arises to be a property of the examined process. Thus, providing no distinctive definitions they only witness that the examined process is flexible and causes flexible feedback, simultaneously analysing the outward conditions that stimulate the flexibility occurrence (e.g., stimuli, assignment requirements, related experience).

Contemplating those viewpoints, we believe that the concept of CF is a "unified framework that conceptualizes cognitive flexibility as a property of the cognitive system" (Ionescu, 2012, 194). On the



one hand, there are the mechanisms and processes of the cognitive system (e.g., shifting, memory, categorization); on the other, there are the cognitive system's properties (e.g., prospectivity, reproductivity) (Ionescu, 2012, 194).

**The research goal** is to prove that as a part of Sophisticated Thinking, a more developed Cognitive Flexibility will significantly contribute to its enhancement.

### Methodology

The research goal is to prove that as a part of Sophisticated Thinking, a more developed Cognitive Flexibility will significantly contribute to its enhancement. The authors set a goal to demonstrate that Cognitive Flexibility is in its turn strongly promoted by profound research activities, because it does not allow to assign someone else's point of view, being initially aimed at producing new and different skills.

The research goals determine its objectives, namely: development of students' conscious motivation for engagement in research activities; demonstration of the fact that research linked with education is not totally disconnected with reality, and each student's position can influence its possible results; postulation of the statement that teachers' academic activities are far more effective being aimed at educational interaction improvement; and, finally, presentation of the evidence that CF is teachable and there is an essential necessity to familiarize students with academic tools.

As modern university youth demonstrates self-centred positioning that exudes their own interests and key priorities within the educational process, there is a crucial need to introduce something brand new to get students interested. Researchers who work as teachers can substantially improve the educational landscape and approaches to its organization in those groups where they teach. So, they change the students' attitude to education, science, developing their CF through enhancement of team working skills, negotiating, flexibility in categorization, language use, and responses. All these capacities are considerably improved in the process of research activities.

As a consequence, the core hypothesis of this paper is explicable: in striving to foster cognitive flexibility for its further use in enhancing academic discourse skills, whether it is possible to connect the notion of CF as shifting with the notion of being a flexible solver, who has awareness of multitasking and the ability to generate new strategies. And if this "connection" is able to activate two-tier process which enhances students' teamwork and students' autonomy through academic discourse development. This study addressed one hypothesis according to which first and second-year students have uncertain motivation, relatively low level of Emotional Intelligence and Cognitive Flexibility while five and six-year students are able to show far more extensive skills. Being involved into working atmosphere they have to be less rigid, more multitask-oriented and more opened for new ideas and their analysis.

**Participants.** Participants of the study (156 students in general: 80 first and second-year students at C1 English level at Plekhanov Russian University of Economics, and 76 - five and six-year students at RUDN University of Russia) were informed about the purpose and the essence of the study and voluntarily took part in it. The age of the participants extended from 17 to 26 years. Regarding race / ethnicity, 75 % recognized themselves as Russians, 9 % as Africans, 5,5 % as Tatars, 4,5 % as Armenians, 3 % as Ukrainians, 3 % as Others.

**Methods.** The computerized method of Stroop Colour Word Effect (SCWE) was used to test the current level of the selective attention and cognitive flexibility of the participants, presentation of stimuli (one at a time) that enables a more precise measurement of reaction time (RT) for individual trials.

Originally Stroop included three components in his test. First, the individual was invited to label a set of colored words (Word task). Second, the individual labeled the bar color (Color task) of X's (e.g., XXX in red, blue, or green ink). The Color-Word task during which the individual was demonstrated the colors names printed in unmatched ink colors (e.g., the word "red" in green ink) and was invited to label the ink color rather than the word itself came the third.

The Stroop interference effect refers to the increase in reaction latency observed when an individual is required to identify the color of a color-word when these aspects of the stimulus are incongruent (e.g., the word red presented in the color blue) compared to the time required to name the color of a neutral (e.g., XXX in blue, or congruent, e.g., the word red presented in the color red) stimulus. The conflict between the relevant (color of the word) and irrelevant (name of the word) dimensions of the



stimulus on incongruent trials presents a particularly difficult task for the selective attentional system. A system that efficiently suppresses the irrelevant dimension (i.e., the word) should exhibit faster color naming than a system in which impaired suppression of the word dimension allows greater competition between the word name and the color name for response output (Raveendranadh, Mur, 2013). The underlying cognitive mechanism involved in SCWE is named selective or directed attention, as the participant has to manage attention, resist interference from irrelevant stimuli, inhibit or stop one response in order to express or do something else. Herefrom, as we suppose, the ratio of change in the reaction time of each participant to identify the color can reflect the presence/absence of alteration in the level of cognitive flexibility development of the study participants. Reaction time of each participant to identify the color of each word can perform as this criterion as well. Presentation of stimuli (one at a time) enables a more precise measurement of reaction time for individual trials through elapsed time on reading aloud. Referred indicators were recorded using computerized version of the Stroop Color Word Test (SCWT) including 40 coloured words.

Concept analysis through Free association test (FAT) was applied to verify SCWT. The concept being a basic cultural cell in the mental world of a person fixes on the meaning of a sign (word, phrase, term, lexico-grammatical structure, action). As a linguistic-cognitive phenomenon it is viewed as the information about a person's knowledge, suggestions, thoughts, images about the objects of the world. It actually shows the importance the person confers onto a phenomenon even if it is not easily verbalized in daily life and, what is more important, it captures changes and differences of how the world is perceived by the person at syn- and diachronic levels.

The concept is a multidimensional meaningful mental construct, including "sign body" (sound cover of the word), notion (unit, reflecting objectively significant features in concepts), conception (subjective sensory images of reality, depending on the individual characteristics: experience, age, academic background, having previously influenced sensory receptors), subject content (reflects the involvement of an object, phenomenon in any type of activities), estimations, emotions, associations (Пищальникова, Рогозина, 2004). Namely the functional and dynamic relationship between the stable components of the concept, and the change in the relations between them indicate the emergence of a qualitatively new content concept.

The third part of the research was the discussion organized during extra foreign language classes, based on the studies of high school teachers, aimed at changing the educational landscape, capable to make it much more appealing and challenging. After the third session, the same tests were again offered to the students. The research was finalized with the Self-Reported Questionnaire (SRQ) incorporating three questions.

**Procedure.** All the participants were explained that data would be collected through word association responses and Stroop Colour Word test before the first session and after the third one. All the necessary instructions were given to them. SCWT was conducted with each study participant individually. All instructions were presented on a laptop screen, if necessary, they were additionally repeated by an experimenter orally. The study participant was sitting in front of the monitor at a comfortable distance for himself. The experimenter stood alongside of a tested person so as to have opportunity to see the monitor. The participants were instructed that they would be demonstrated words printed in colors that do not correspond to the written word with the goal to name the color in which the word is written, ignoring the meaning of the written word to give their verbal response to the stimulus quickly and accurately without making errors (e.g., if the word "blue" is written in yellow, the examinee must say "yellow"). The software records the time of the stimulus onset.

The FAT included 10 words. 5 of them were aimed to identify the students' views and experiences of the concepts connected with the ideas discussed. The others were used as distractors designed to disguise the true purpose of the FAT. As stimuli we used the words *game*, *science*, *research*, *language*. Tests were distributed among the participants with the task to write next to each stimulus word the first association that came to their mind. Each student placed his/her age, gender, and ethnic and religious affiliation on the test. For the sake of clarity a few examples were provided in oral form before the start of the test. The necessity of spontaneity of the answers was stressed.

The research procedure included 3 sessions in the course of which the researchers asked the participants problematic questions that could not be responded to without in-depth reflection on the perspective, which forced the students to acquaint themselves with diverse viewpoints, justify those, and the

participants understood that their own position on the topic was far from reality, and seeing different facets of the problem, often changed their attitudes.

The first session lasted 2 months and was based on the scientific research about gamification (Тихонова, 2015), which many students treated as experts. This session was designed to familiarize the students with the concept, which states that gaming technologies in non-gaming processes change educational reality and allow to pursue fundamentally different results. Thus, after reviewing the new interpretation of gamification, students had to abandon the original categorical judgments associated with the term (thereby demonstrating a penchant for CF). The second session continued 2 months and was centered around the scientific article about analysis of English radio news as a teaching method (Резепова, 2009). This session was focused on the CF development, reflected in a greater involvement and desire to participate in research activities. The participants already began to offer ways to detect peculiarities adhered to the text's structure in English radio news, analyzed texts from BBC Radio 4, comparing the styling of sounding voice and various Internet communications. For the first time the students generated an idea about a need to fix the features identified by them for the rest to be able to learn these and engage in similar research. The third session went on 1 month and was carried out on the basis of the scientific article about storytelling (Тихонова, 2016), through which students familiarized themselves with a new technique of theoretical material positioning, for example, by means of introducing characters. The session was aimed at testing themselves in educational practice and subsequent change of students' perception in science and science as a notion. Here they, in reality, have assessed, as seemingly small research on creating of an educational history changes the focus of narration and perception of the material, how much better it is understood, and tried different variants of its representation. The students again expressed their desire to fix the material in the article form, noted a necessity for further study of the issue, as it can greatly affect the efficiency of the educational process.

After the third session, the same tests were again offered to the students. Sessions have been held to identify their attitude to being engaged in scientific research and its inclusion into the educational process. Self-Reported Questionnaire incorporated the three following questions:

- How do you feel about your activities within the boundaries of the research?
- While performing the tasks referred to the research areas what captured you most of all?
- Do you believe that it is justified and necessary to combine scientific and educational activities at the University?

## Results and discussion

The Stroop Colour Word Effect allowed to test the changes connected with CF and focused attention of the research participants. The participants showed a significant decrease in response time on the stimuli being demonstrated (Table 1). Findings were statistically analyzed via use of *Wilcoxon signed rank test*. Calculated p-value happened to be less than 0.05, that enables to infer on the existence of statistically significant difference in findings obtained from 156 participants in Pre and Post-tests.

Table 1

### Changes in average RT<sup>a</sup> of the participants while performing The Stroop Colour Word Test

Pre-test	Post-test
43,7	27,5

Note. P-value < 2.2e-16. Evaluation is based on *Wilcoxon signed-rank test*.

<sup>a</sup>Reaction Time.

To verify the findings the FAT was applied. Being limited by the format of the article, we cannot address the structure of each concept behind the cue words, so the concept "research" was chosen for the analysis as potentially most clearly reflecting students attitude towards science and academic activities. The figure shows the ratio of the concept "research" components, obtained through the FAT.

According to the received data in the Pre-test the following most common associations were obtained: - **notions**: knowledge (5), facts (3), studying (9), information (5), process (3), analysis (2) (66 % of the total number of the associations); - **conceptions**: science (31), innovation (7), laboratory (5), scientist (37), reveal (5), discovery (6), evidence (5), results (1), formula (1), basis (1), figures (4) (18 %); -

**estimations and emotions:** empty (3), wasting time (5), difficult (11), nonsense (1), rubbish (1), smth new (3) (16 %).

After the Post-test responses were subdivided into the following groups: - **notions:** knowledge (4), facts (2), studying (7), information (5), process (3), analysis (2), activity (20) (29 %); - **conceptions:** interesting (8), empty (1), wasting time (1), difficult (9), nonsense (1), rubbish (1), smth new (5), in need (5), inspiration (3), improving reality (4) (46 %); - **emotions and estimations:** science (5), innovation (9), laboratory (1), scientist (8), reveal (6), discovery (6), evidence (5), results (16), formula (1), basis (1), figures (3), university (11) (25 %).

Analysis of the results reveals the transformation of the concept structure in the minds of the research participants: the first presentation of the words stimuli identified predominantly neutral attitude to the very concept of "research". The prepotency of the conceptual component in the concept structure demonstrates, in our view, distant, quite neutral attitude of the participants to the very concept of "research". The structural component of "conception" includes fairly neutral associations related to the subject field "science". However, "emotions and estimations" component includes mainly negatively colored perception of the concept, marking it as "empty, wasting time, difficult, nonsense, rubbish".

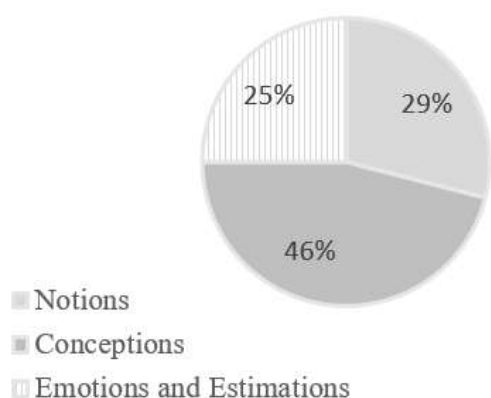


Figure 1. "Research" concept structure (Post-Test).

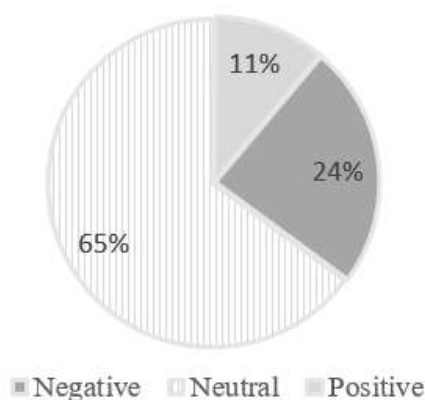


Figure 2. "Research" concept structure: Emotions and Estimations (Post-Test).

Post-test results recorded percentage change in components: "concepts", "emotions and estimations" rose (Figure 1). In so doing, emotional-evaluative tone of perspective perception has changed significantly in a positive way (65 %) from all emotional-evaluative reactions being fixed (Figure 2). That, in our view, proves a positive impact of the research activities undertaken by the participants in its process, on facilitation of their attitude transformation.

Interestingly, in the component "conceptions" there emerged responses "university" (11 responses): if primarily students didn't relate the research to universities, at this stage the research activities happened to be perceived by them as related ones within the educational process. It should be of a special note that comparisons for differences in responses received from the participants with different religious and ethnical backgrounds revealed almost identical performance on all tests. Thus, their data were analysed as a single group of N = 156 students.

Through the SRQ, offered for filling in as a final stage of the measurement, we succeeded in identifying the following trends in evaluation of the activities being performed by them.

While answering the first question in the SRQ (*How do you feel about your activities within the boundaries of the research?*), the majority of the participants (76 %) evaluated their research activities on the course of the study positively, 20 % - neutrally, 3 % - negatively, 1 % - refused to reply. In the process of reasoning their interest towards implemented activities the participants emphasized that the found academic activities can be applicable as they tracked a connection of theoretical research with real life. The very notion of "research" lost the aura of mystery for them by showing its real value, the possibility of incorporating the identified patterns and realities in their routine practice. The participants were surprised with a potential chance to have a direct impact on the educational paradigm: such awareness was shown by 32 % that, in our view, reflects a serious shift in their cognitive evaluations. Interestingly, quite many noted a positive influence of the implemented activities on the development

of English communicative competence: a passion for process suppressed fear of expressing their points of view in a foreign language, stimulated desire to develop academic writing speech (45 %). Through such activities the participants marked the opportunity to not only develop cooperative qualities, ability to work in a team, but an independent position, a well-reasoned grounding, critical thinking: as in the academic context misappropriation of another's point of view is seen as impossible in principle.

Comments on the second question (*While performing the tasks referred to the research areas what captured you most of all?*) formed successive priorities of the research participants (listed the most frequent answers): (1) acquaintance with the phenomena, which were previously unfamiliar (44 %); (2) inability to explain the studied phenomena with relevant life experience and knowledge, hence active cognition of new (self-consistently as well) (29 %); (3) a new vision of the phenomena and processes (7 %). There were some negative comments about a need for considerable time, no real need to participate in such activities because they are not so important for future professional engagement. However, a critical position was demonstrated only by 1,5 % of the participants. Neutral statements to uniquely identify evaluation of the research by the recipients were fixed as well: e.g., interesting but difficult; ability to collaborate with other students, unusual.

The third question (*Do you believe that it is justified and necessary to combine scientific and educational activities at the University?*) revealed that more than 76 % of the participants, to varying degrees, were interested in bringing scientific and research activities in academic sphere, and expressed their willingness to actively participate in those, since it promotes educational horizons, personal growth, develops skills for multitasking, improves understanding of infeasibility of a unified and inflexible viewpoint. Another 15 % marked neutral attitude to the described phenomenon, stating that, although they liked to participate in the study, they find such activities time-consuming and would prefer to momentarily take part in them.

## Conclusions

The research has indicated that the hypotheses were only partially confirmed.

Registered findings demonstrate development of the CF in a situation of an active students' involvement in joint research activities with their teachers. Many participants really confirmed a change in attitude towards their own rigidity of judgements, noting the necessity of refraining from explicitness in the approaches to the reality interpretation, having expressed an interest to implement multiple tasks simultaneously.

Clear motivation of the students to participate in the research, producing their autonomous and creative solutions, their willingness to reason the viewpoints in discussions prove the relevance of maximum incorporation of academic activities in educational practice. We are talking about independent, serious research (albeit in a mini format) in a collaboration with university professors, as they seriously improve working atmosphere, and promote maximum cooperation within the chain teacher-student, student-student. Meanwhile, the five and six-year students did not demonstrate a more developed level of the cognitive flexibility comparing to the first and second year students.

Researcher' approbation of their concepts in the classroom and immediate feedback to them, in our view, contributes greatly to their optimum incorporation into the educational practice. The investigated statements of the article, despite the need for further testing and longer research, are of interest in the context of building the most effective educational concepts.

## Bibliography

1. Aron A.R. (2008). Progress in Executive-Function Research - from Tasks to Functions to Regions to Networks. *Current Directions in Psychological Science*, Vol. 17, pp. 124 – 129. [online] [06.11.2016]. Available at <http://journals.sagepub.com/doi/pdf/10.1111/j.1467-8721.2008.00561.x>
2. Barsalou L.W. (1983). Ad Hoc Categories. *Memory & Cognition*, Vol. 11(3), pp. 211 – 227. [online] [06.11.2016]. Available at <http://psych.utoronto.ca/users/peterson/psy430s2001/Barsalou%20LW%20Ad%20Hoc%20Categories%20Mem%20&%20Cog%201983.pdf>
3. Barsalou L.W. (2003). Situated Simulation in the Human Conceptual System. *Language and Cognitive Processes*, Vol. 18 (516), pp. 513 – 562. [online] [06.11.2016]. Available at <https://pdfs.semanticscholar.org/f526/c778fbc03e03c232d40cdc9634f470b42723.pdf>

4. Blaye A., Bonthoux F. (2001). Thematic and Taxonomic Relations in Preschoolers: the Development of Flexibility in Categorization Choices. *British Journal of Developmental Psychology*, Vol. 19 (3), pp. 395 – 412.
5. Boroditsky L., Neville H., Karns C., Markmann A.B., Spivey M.J. (2010). Flux: Fundamental or Frivolous? In Ohlsson S., Catrambone R. (Eds.). *Proceedings of the 32<sup>nd</sup> annual meeting of the cognitive science society*. Austin, TX: Cognitive Science Society, pp. 2918 – 2919.
6. Deak G.O. (2003). The Development of Cognitive Flexibility and Language Abilities. *Advances in Child Development and Behavior*, Vol. 31, pp. 271 – 327. [online] [06.11.2016]. Available at <http://cogdevlab.ucsd.edu/files/2013/05/DeakACDB2003.pdf>
7. Diamond A. (2006). The Early Development of Executive Functions. In E. Bialystok, F. Craik (Eds.), *Lifespan Cognition: Mechanisms of Change*. New York, NY: Oxford University Press, pp. 70 – 95.
8. Geurts H.M., Corbett B., Solomon M. (2009). The Paradox of Cognitive Flexibility in Autism. *Trends in Cognitive Science*, Vol. 13 (2), pp. 74 – 82.
9. Guilford J.P. (1967). The Nature of Human Intelligence. *American Educational Research Journal*, Vol. 5, (2), pp. 249 – 256.
10. Ionescu T. (2012). Exploring the Nature of Cognitive Flexibility. *New Ideas in Psychology*, Vol. 30, pp.190 – 200. [online] [06.11.2016]. Available at <http://fulltext.study/download/331545.pdf>
11. Jordan P.L., Morton J.B. (2008). Flankers Facilitate 3-Year-Olds' Performance in a Card-Sorting Task. *Developmental Psychology*, Vol. 44(1), pp. 265 – 274.
12. Plunkett K. (2005). Learning how to be Flexible with Words. In Y. Minakata, M.N. Johnson. (Eds.). *Attention and Performance XXI: Processes of change in brain and cognitive development*. New York, NY: Oxford University Press, pp. 233 – 248.
13. Raveendranadh P., Mur N., Usha Rani P., Shobha J. C., Praveen Reddy A. (2013). A Computerized Stroop Test for the Evaluation of Psychotropic Drugs in Healthy Participants. *Indian Journal of Psychological Medicine*, Vol. 35(2), pp. 180 – 189. doi: 10.4103/0253-7176.116251 [online] [06.11.2016]. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3775051/>
14. Shafto P., Coley J. D., Vitkin A. (2007). Availability in Category-Based Induction. In A. Feeney, E. Heit (Eds.). *Inductive Reasoning. Experimental, Developmental, and Computational Approaches*. Cambridge, UK: Cambridge University Press, pp. 114 – 136.
15. Sloutsky V.M., Fischer A.V. (2008). Attentional Learning and Flexible Induction: how Mundane Mechanisms Give Rise to Smart Behaviors. *Child Development*, Vol. 79 (3), pp. 639 – 651. [online] [06.11.2016]. Available at <http://faculty.psy.ohio-state.edu/sloutsky/pdf/context-effects-published.pdf>
16. Smith, E.E., Kosslyn, S.M. (2014). *Cognitive Psychology - Mind and brain*. (1<sup>st</sup> ed.). UK, Harlow: Pearson Education Limited. [online] [06.11.2016]. Available at <https://www.amazon.com/Cognitive-Psychology-Brain-Edward-Smith/dp/0131825089>
17. Tikhonova E.V., Kudinova N.A. (2016). Emotional Intelligence as a Constituent of Sophisticated Thinking: Teaching Non-Fiction in the English Language Classroom. In *Proceedings of the 3d International Multidisciplinary Scientific Conference on Social Sciences & Arts (SGEM)*, Vol. 1 (1). Bulgaria, Sofia: Bulgarian Academy of Sciences, pp. 733 – 740.
18. Tikhonova E.V., Kudinova N.A., Golubovskaya E.A. (2015). Sophisticated Thinking: Text, Task, and Situation. In Chova L.G., Martínez L.L., I. Candel Torres I.C. (Eds.) *Proceedings of the International Technology, Education and Development Conference (INTED)*, Vol. 9. Spain, Madrid: IATED, pp. 5461 – 5471.
19. Vandierendonck, A., Liefoghe, B., Verbruggen, F. (2010). Task Switching: Interplay of Reconfiguration and Interference Control. *Psychological Bulletin*, Vol. 136 (4), pp. 601 – 626.
20. Пищальникова В.А., Рогозина И.В. (2004). Концепт как инструмент диагностики этнической напряженности (Concept as a Diagnostic Tool for Ethnic Tensions). В сборнике *Языковое сознание: теоретические и прикладные аспекты*. Барнаул: Издательство Алтайского университета, с. 121 – 128. (in Russian)
21. Резепова Н.В. (2009). Разбор языковых особенностей дискурса радионовостей как интенсивный метод в изучении иностранного языка (Analysis of Peculiarities of Radio News Language Discourse as an Intensive Method in Learning a Foreign Language). В сборнике научных трудов II Всероссийской (с международным участием) научно-практической конференции *Инновационные компетенции и креативность в исследовании и преподавании языков и культур*. Том 2, с. 587 – 596. Москва: РГСУ. (in Russian)
22. Тихонова Е.В. (2016). «Storytelling» в преподавании: вызовы современности и педагогическая практика («Storytelling» in Teaching: Modern Challenges and Educational Practice). *Психология образования в поликультурном пространстве*, Том 34 (2), с. 136 – 143. (in Russian)
23. Тихонова Е.В. (2015). Психология игры в управлении образовательной интеракцией (Game Psychology in Managing Educational Interaction). *Право и управление. XXI век*, 4, с. 145 – 149. (in Russian)

## The Role of the RTU Students' Survey in Provision of the Quality of Mathematics Studies

Inta Volodko<sup>1</sup> Dr. math.; Sarmīte Čerņajeva<sup>2</sup> Mg. paed.

Riga Technical University, Latvia

[inta.volodko@rtu.lv](mailto:inta.volodko@rtu.lv)<sup>1</sup>; [sarmite.cernajeva@inbox.lv](mailto:sarmite.cernajeva@inbox.lv)<sup>2</sup>

**Abstract:** The amount of students who want to study technical sciences significantly reduces in Latvia, as in whole Europe. In the same way, the level of students' knowledge in science subjects also reduces, as a result of which, the amount of deducted students increase. That is why it is important to realize problems students have during the study process, and solve them by improving the teaching quality of the subject. Students' questionnaires help detecting these problems.

Study department of Riga Technical University (RTU) in cooperation with the Department of Information Technologies have created the system of students' survey, not less than once a semester carrying out surveys for students about the quality of the content of the studies of mathematics and teaching forces. Using port ORTUS, every student receives a survey about every subject acquired during the semester. Surveys are anonymous and are not personally connected with every particular student; gained results are significant for the improvement of the quality of the studies.

Students' questionnaires about the teaching staff of the RTU Department of Engineering Mathematics indicate that in general lecturers of the department work well. If students' questionnaires indicate any problems in the content of mathematical subjects or teaching methods, the problem is being solved inside the department.

**Keywords:** surveys for the studying, quality of the studies of mathematics, university education.

### Introduction

In recent years, not only in Latvia, but in whole Europe, the amount of students who are interested in studying in technical universities has decreased (Zeman, Hrad, 2013). One of the ways to attract students is to improve the quality of the studies. An important component of quality improvement is inner evaluation of the system. Methods for inner evaluation of the system for universities are viewed in the article (Kalimullin, Khodyreva, 2016). Also one of the basic methods is mentioned students' questionnaire. Various approaches and procedures for quality of education evaluation in three universities in Russia, Poland and Ukraine are viewed and compared in the article (Noskova, Pavlova, 2016). Analyzed facts are gained from students and lecturers' questionnaire.

As the greatest amount of deducted students in RTU is in the first academic year and mostly because of the general subjects (mathematics and physics), it is important to understand problems which students face during the studies. Of course, number one and main factor for successful studies is students' own input and work. But, also lecturer's role in the study process is not insignificant. There are several criteria to receive individual evaluation of the teaching staff:

- students' questionnaires,
- students' results,
- demands for perfection of the qualification for the teaching staff,
- control during the study process.

Aim of this research is to analyze students' questionnaires about teaching staff of the Department of Engineering Mathematics of RTU, which consist of both individual evaluation of the teaching staff, evaluation of the syllabus, and show how much time do students spend for acquisition of mathematics themselves. Taking into consideration results of this questionnaire, the quality of teaching mathematics can be improved, thereby, reducing the amount of deducted students.

### Methodology

Survey, using the Internet, is one of the newest and up to date research methods. It is also one of the most used research methods. An objective evaluation about the interested question can be received by correctly and precisely defining the questions in the survey and by choosing appropriate amount of respondents.

Survey gives an opportunity to gather information from a group of people that is too large for an oral survey; it is a great tool to receive an opinion from a numerously large group of people (Babbie, 2016). As amount of students of RTU course 1 is large, survey is the best and cheapest method to receive information from students about programs of mathematics and other subjects, according lecturers and their working methods. Taking into consideration that survey is anonymous; students can freely express their opinions, attitude and point of view. Analysis of the results of these surveys is one of the ways on how to improve subject programs and teaching methods.

At the end of every semester, during a time of one month, every student, who enters ORTUS e-studies, is asked to fill in the survey about the corresponding course and lecturer. Questions and answers were created by Study department of RTU, but technical solution was done by Information technology department of RTU. There are 13 questions in the survey and place for comments:

- at the introductory lecture, the lecturer/professor informed the students on the curriculum and assessment procedures and criteria;
- the lecturer/professor covered all curriculum themes required to achieve the defined learning outcomes;
- the course was well-structured and the themes were explained in a comprehensible manner;
- the lecturer/professor was well-prepared for the classes;
- the lecturer/professor used audio-visual materials efficiently;
- the lecturer/professor promoted creative thinking and practical application of theory;
- recommended literature sources were accessible and helped in acquiring the course materials;
- Study materials were available in the e-study environment;
- it was possible to timely attend tutorials;
- the curriculum of the course did not overlap with the curriculum of other courses;
- the lecturer/professor's attitude to the students was positive and helpful;
- the number of hours allocated for the study course per week (independent work, lectures, practical classes and lab works);
- what is your attendance rate?
- other comments, advice, praise or complaints about this course and/or the lecturer/professor.

Every lecturer has an opportunity to add questions if he or she wishes so. Students can choose one of the six answers in the first 11 questions:

- strongly agree;
- partially agree;
- neutral assessment;
- partially disagree;
- strongly disagree;
- no evaluation.

Every answer is numerically evaluated with points 1 – 5. When answering to the question 12, students point out their spent time for acquisition of the subject per week with an interval of 2 hours:

0 – 2 hours, 2 – 4 hours, 4 – 6 hours, 6 – 8 hours, 8 – 10 hours, more than 10 hours.

In question 13 students point out the amount of lectures attended:

0 – 19 %, 20 – 39 %, 40 – 59 %, 60 – 79 % or 80 – 100 %.

At the end of the survey, students can write their own comments and suggestions both about the content of the subject, and teaching methods, and also about the lecturer. Usually it is the most interesting part from the results of the survey.

Results from every semester can be found in appendixes. Results of the surveys are fully available to every particular teaching force about their own study subject, managers of the department of the teaching forces and - by the demand - directors of the study program about the teaching forces involved in realization of their study programs, as well as, representatives of the Student Parliament. Received results are carefully analyzed and evaluated, and accordingly, decisions are made to improve the quality of the studies of mathematics. Results of the surveys are saved and compared with the results of the previous period.



Further results of the survey are gained by gathering the data from the students' survey about RTU Engineer-mathematics department 2nd semester subject "Mathematics" and its lecturers. The mentioned before subject is taught by all lecturers of the Department of Engineering Mathematics department, 21 in total. From 1668 students that are registered for this course, survey was completed by 1058 students or 63.42 % of all registered students. Surveys were completed in May, 2016.

Of course, credibility of the survey results depends on the amount of students that have completed the survey. As the number of participated students in the survey is great, the results are quite credible. It must be pointed out that students' activity in the survey is affected by accessibility of the study materials in the e-studies portal and their quality. The better are the study materials, the more often student goes into e-studies portal ORTUS, the more often he or she is asked to complete the survey.

## Results and discussion

The summary of the results of students' answers (answers to first 11 questions) is shown in Figure 1: the first column shows the lowest evaluation in the department, the second – highest evaluation, the third – middle weighted evaluation.

As seen in the graph, overall evaluation of the lecturers of the department is good: average evaluation of the lecturers in all questions exceeds 4. The lowest evaluation - 4.18 is for question 5: „The lecturer/professor used audiovisual materials efficiently". It is also understandable, because the most part of the lecturers of the department read lectures, using chalk or marker and board. In my opinion, that is the best lecture reading method in mathematics for first year students.

The highest evaluation - 4.72 are given to the question 1: „At the introductory lecture, the lecturer/professor informed the students on the curriculum and assessment procedures and criteria". Of course, every lecturer at the beginning of the course must introduce students with the curriculum and must formulate their assessment criteria.

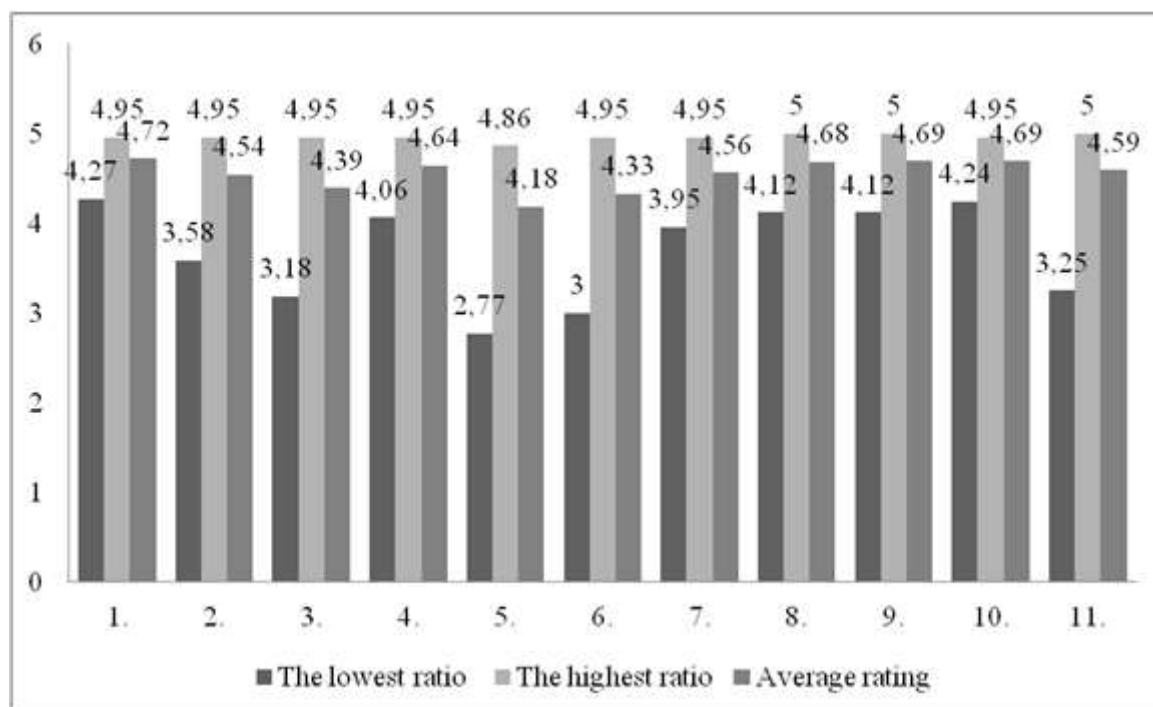


Figure 1. Summary of students' evaluation.

Lecturers, whose evaluation in any of the questions is under 4, must reevaluate their teaching methods of the subject and attitude towards students, and, taking into consideration students' evaluations and suggestions, improve the quality of their work. Every semester, the board of the Department of Engineering Mathematics views the results of the students' questionnaires about every lecturer of their department. If the evaluation on any of the points from students is low, there is a conversation with the lecturer about how to improve this showing, work mistakes of the lecturer are pointed out and



suggestions to solve the problem are given. During the following semesters there is a follow up if the suggestions are being taken into consideration.

Objective evaluation can be given only from students who attend the lectures. Figure 2 shows that 72 % of the students completed the survey have attended more than 80 % of the lectures, thereby, it is advisable to listen to their evaluation. While, evaluation of those 5 % of students, who attended less than 40 % of lectures, is not credible.

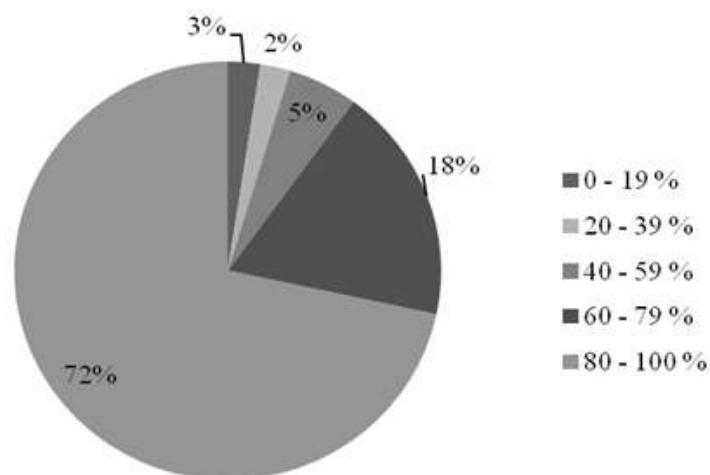


Figure 2. Students' attendance rate.

Of course, success of the students does not only depend on teaching methods of the subject and the attitude of the lecturer towards students, it mostly depends on their own input in the process. Mathematics course in semester 2 in RTU has 4 CP, which indicates that students dedicate 8 hours per week for mathematics. There are 5 hours of auditorium lectures in semester 2. Figure 3 shows how many hours per week, including auditorium lectures, do students spend on mathematics. According to graph, almost one third of students (335 or 31.66 %) acquire mathematics only during the lectures; and only 214 students (or 20.23 %) spend more than 8 hours per week on mathematics.

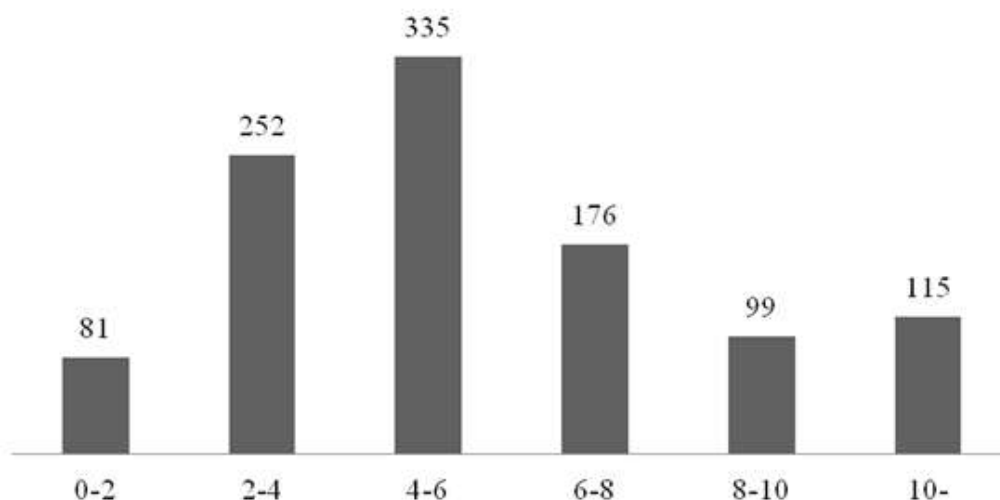


Figure 3. The number of hours allocated for the study course per week (number)

What can we gain using the results of the survey (individually and all together)? What does the students' survey give/ can give?

- Survey gives feedback about the study results from a point of view of study curriculum and the process;
- gives an opportunity to a teaching staff to evaluate and improve their work;
- RTU board and directors of the departments or institutes can use the gained information to improve the quality of the studies in the level of university;
- survey results are used to evaluate the candidates of the teaching staff for academic positions;

- survey results are used when signing agreements with guest lecturers;
- survey results are taken into consideration when making changes to study curriculums, study course and the methodology of their realization.

As any research method, survey also has its advantages and disadvantages. Main advantages of the electronic survey are:

- that is one of the fastest research methods because survey is carried out electronically and information is gathered automatically;
- possibility to add their own questions to the survey, gives lecturers a chance to find out the point of view of the students about the specific topic of their interest;
- from the student's point of view, anonymity of the survey is a positive thing;
- data of every survey is saved so it gives a chance to follow up the improvement changes of every study course.

Survey of RTU students has its negative sides too, part of which are correctable, thou:

- often results cannot be used to evaluate a particular teaching stuff, because clerks have not written the lecturer carrying out the course in the individual curriculums of the studying. In that case, results go to a responsible professor of the subject, although, in reality, another teaching stuff is being evaluated;
- on the last days of the survey, student, who wants to get the materials in the e-study portal, is forced to complete the survey (otherwise the access to materials is denied). In such circumstances, students often complete the survey in a rush, without paying attention to the questions and given answers are not honest;
- from student's point of view, the greatest minuses of the survey is the necessity to read the questions and go into them, as well as, spend time to complete the answers.

There is still unanswered question: what do students think about these surveys? Are they only completed by unsatisfied students or the opposite, the ones, who are excited about the lecturer? Do students see a point to complete these surveys?

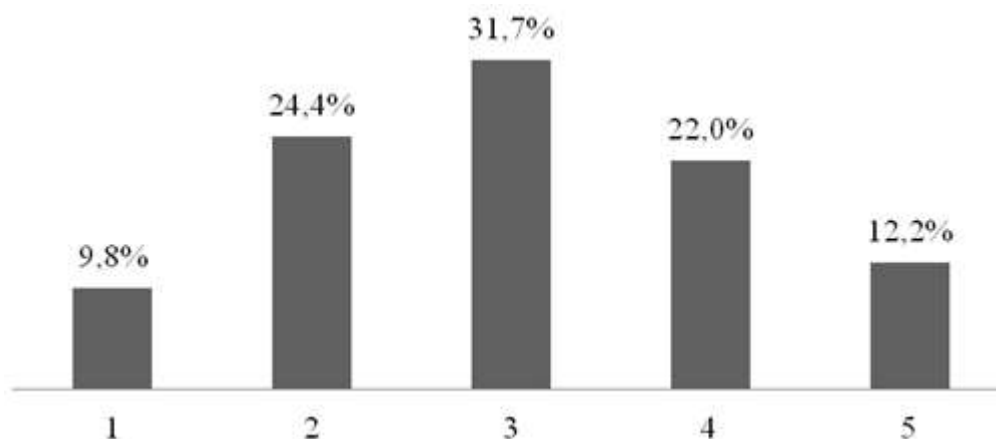


Figure 4. Number of Students' answers (%) to the question: „Do you consider that students' surveys are useful?“

RTU assistant professor of Faculty of Materials Science and Applied Chemistry Agnese Stunda- Zujeva (2016) carried out a research that helped to receive answers to previously asked questions. 82 students from the mentioned faculty took part in the research. It is visible in figure 4 that only 34.2 % of the correspondents believe that surveys are useful (answer 1 - very useful, 2 - rather useful), whereas, exactly as many, that is, 34.2 % believe that they are not useful (answer 5 - completely useless, 4 - rather useless). Almost one third of the correspondents do not have an opinion on this question.

Great part of students (41.5 % of correspondents) do not believe that surveys are anonymous that is why they are afraid to express their opinion. That would be a job for IT department stuff who gather the results of the surveys to explain students that their fear has no ground, because survey really is anonymous, regardless the fact that it is completed in the portal ORTUS, while logged in with their names.

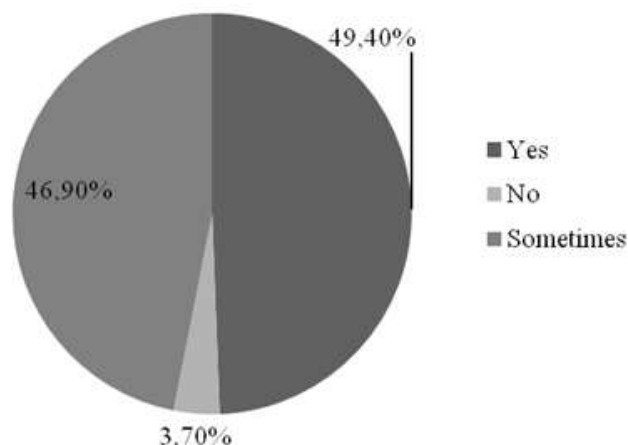


Figure 5. Number of students, who carefully consider their answers.

Almost half of the students (49.4 %) complete surveys carefully considering answers, a small part - 3.7 % of students mark all answers the same, without thinking about the questions, but the rest of the correspondents consider answers in some subjects or question, but in some no (Figure 5).

Comments most often are left by students who have expressively positive or expressively negative opinion about the lecturer or subject. The most part think that they have spent enough time answering the questions to be writing comments. There is a part that is afraid to express their opinion openly because do not believe that surveys are anonymous.

There are several reasons why students do not want to complete the surveys or complete them superficially:

- each student has several subject during a semester, about each of those there are 13 questions to answer, that requires some time;
- surveys must be completed at a time before session, when student has a lot to study and does not have time for completing the survey;
- not all questions conform with the specifics of the subject;
- if subject is taught by several lecturers (lectures are read by one, practical works are led by another, and laboratory works by third), student does not quite understand who to evaluate;
- there is not a certain belief that survey will influence the quality of the subject.

To make survey more successful and objective, several steps should be taken:

- reduce the amount of questions in the survey and adjust them to a certain subject and types of classes (lectures, practical works, laboratory works);
- postpone the completion of the survey to after the session because of two reasons: a) then student has more time to spend on the survey, b) can answer to questions that were not clear before the exam, for example: „The lecturer covered all curriculum themes required to achieve the defined learning outcomes” or „Recommended literature sources were accessible and helped in acquiring the course materials”;
- carry out the explanatory work with students about the anonymity of the survey, about who has the access on the results and how they are used for the improvement of the studies;
- give feedback on the results of the survey to students: inform students about changes in the curriculum of the subject or teaching methods, if such are done based on the results of the survey.

## Conclusions

After evaluating students' questionnaires about teaching staff of the Department of Engineering Mathematics of RTU, we can conclude:

- biggest part of the students who completed the questionnaire have attended more than 80 % of the lectures, thereby can give an objective evaluation about the lecturer's work;
- students mostly positively evaluate work of the lecturers of the department;
- in case if lecturer's work is evaluated negatively, board of the department give lecturer recommendations on how to improve the work, taking into consideration critique and suggestions given in the students' questionnaire;

- as the results of the questionnaires are being kept, it gives an opportunity to follow up on the improvement of the teaching quality of the subjects of mathematics.

### Bibliography

1. Babbie E. (2016). *Practice of Social Research* (14th Edition). Boston: Cengage Learning.
2. Kalimullin A.M., Khodyreva E.A., Koinova-Zoellner J. (2016). Development of Internal System of Education Quality Assessment at a University. *International Journal of Environmental and Science Education*, Vol. 11 (13), pp. 6002 – 6013.
3. Noskova T., Pavlova T., Yakovleva O., Smyrnova-Trybulska E., Morze N. (2016). Modern Education Quality Requirements and Information Technologies in Academic Teachers' Activities. *International Journal of Continuing Engineering Education and Life-Long Learning*, Vol. 26 (4), pp. 434 – 459.
4. Zeman T., Hrad J. (2013). Improved Chances for Entering Technical Universities. In Proceedings of the International Conference on European Association for Education in Electrical and Information Engineering, Vol. 24, pp. 16 – 21. Technological Educational Institute of Crete.
5. Stunda-Zujeva A. (2016) Priekšmetu anketēšanas rezultātu ietekmējošie faktori. Atgriezeniskās saites analīze 21.gadsimtā. (Influencing Factors to the Results of the Surveys of Subjects. Analyses of Feedback in 21st Century). RTU Metodiskā konference 2016.gada 22.martā. Rīga: RTU. (in Latvian)

## Pedagogical Conditions of the Development of Grammatically Accurate Speech of 3 to 5 Years Old Children

Anna Vulāne<sup>1</sup> Dr. philol.; Zane Enģele<sup>2</sup> Mg.paed.; Agrita Tauriņa<sup>3</sup> Dr.paed.

Riga Teacher Training and Educational Management Academy, Latvia

[annav@lanet.lv](mailto:annav@lanet.lv)<sup>1</sup>; [zane.engele@rpiva.lv](mailto:zane.engele@rpiva.lv)<sup>2</sup>; [agritataurina@inbox.lv](mailto:agritataurina@inbox.lv)<sup>3</sup>

**Abstract.** The usage of language provides implementation of different functions in children's lives. One of them is the communicative function – the speaking role becomes a tool of communication. Speech development is an important task of pre-school pedagogy and its successful implementation ensures the formation of child's communicative competence. The third year of life is an especially important period for a child's speech development, when vocabulary expands rapidly. The child's attention focuses on grammar formations when specific number of words have been learned. Being in a free, active, creative and natural speech environment, a child acquires grammatical structures as certain speech stereotypes from peers and adults. There are different tasks and exercises to promote grammatically correct speech found in pre-school education curriculum program but they are insufficient. While organizing the learning process, the teacher is guided by the educational content of the program, and if these tasks are not exactly revealed, well targeted work is incomplete. The empirical research deals with the monolingual Latvian-speaking children's ability to reconcile the adjectives with nouns in gender, number and case, as well as usage of definite and indefinite endings of adjectives. The aim of the research is to explore pedagogical conditions which could promote 3 – 5 years old children's skills to reconcile adjectives with nouns. Materials and methods: analysis of theoretical and literary sources. Empirical research methods: Qualitative research method – teaching observation, test, data processing. Results, conclusions: 3 – 5 years old children's ability to reconcile the adjectives with nouns in gender, number and case is successful if the teacher offers appropriate topics for promoting the development of the Latvian language; when the teacher promotes the child's the ability to describe objects, actions, to compare them by using productive questions and the child shows an active participation during this cognitive process.

**Key words:** grammatically accurate speech, pre-school child, pedagogical conditions.

### Introduction

Language is essential in everyone's life both for personal development and socialization, so the development of child's speech is the parents and pre-school teachers' task. The results of the research show that the number of children who have speech difficulties in Latvia has increased (Tūbele, 2015). Teachers face the problem that many children have poor vocabulary and they have not developed the skill to build logical, complete sentences and to reconcile different word forms. Therefore, it is important that at the pre-school education stage, special attention is paid to the development of different aspects of the child's language. The third year of life is a particularly important period in the development of the child's speech, when his word stocks rapidly expands. When it is acquired to a certain amount, the child also starts paying attention to grammar formations – at the age of three the child already speaks in sentences, so it is important that he learns to use various grammar forms correctly, reconcile them. While being in free, active, creative and natural environment, the child learns grammar structure as definite speech stereotypes from adults. The role of parents and teachers in the development of the child's language and communication, as well as in other areas of upbringing, is very important. In order to teach the child to talk and interact, he needs a positive example of different communication-oriented tasks which when carried out in the form of a game, develop the necessary linguistic skills. In the curriculum of pre-school education there are tasks that promote development of grammatically correct speech, however, there should be more of such tasks. The curriculum is a guide for teachers, when organizing the learning process, but if these tasks are not accurately revealed, the learning process is defective. When analyzing the training materials, their linguadidactical design was found not qualitative, the selection of language samples could be more considered and systemic. One of the reasons of the problem could be the fact that such a study, which would collect and analyze the data with the aim of finding out what difficulties the child faces when learning the grammar system of the Latvian language, has never been carried out. Based only on one's own experience and intuition, it is difficult for the authors of the learning tools to develop purposeful tasks. Unfortunately, until now in Latvia there is no study on the development of preschoolers' grammatically correct speech.

So one of the directions of the international research project "Latvian language monolingual and bilingual learning: tools, theories and applications" (LAMBA) is an experimental research of monolingual and a bilingual Latvian-speaking children's grammatical and (morpho)phonological language acquisition, during which three experiments were carried out.

In this article, the results of the third experiment of the study will be analysed and the possibilities to use them in pre-school teaching process will be evaluated.

The first four years are the most important stage in the development of human's speech, because then one's first language and the perception of language system in general is created. A pre-school age child learns the word stock, pronunciation and grammar of the native language unconsciously based on imitation. The age of 3 years is considered to be a very important phase of language learning. At this age the sensitive period of language development sets in – the child listens, perceives, imitates and exercises the speech organs. If he is denied this possibility, then the further language development is delayed. Imitation is an unconditional reflex that you do not understand, but it is natural (Druviete, 2010, 126; Freiberga, 2006, 135; Hoff, 2014, 7; Irbe, Lindenberga, 2014, 138; Rūķe–Draviņa, 1992, 9). The glossary of speech therapy terms interprets imitation as arbitrary (intentional) or non- arbitrary (involuntary) movement, actions, demeanor and speech (Lūse, Miltiņa, 2012, 41). The child, when imitating, doing research, learn from his own mistakes in everyday situations, not only in those periods and situations where educational activities are planned (Lieģeniece, 2003, 15).

Pre-school children are amazingly open to new knowledge, they show great interest and enthusiasm in all pursuits in which they need to observe, perform experiments, to research because the desire to explore all the unknown is natural. Preschool age children will remember the information that is associated with the earlier experienced emotions and interest. The child best remembers the things and actions what he needs and what interests him (Выготский, 2005).

Children acquire knowledge of the language naturally, both directly by using the language and indirectly by learning it systematically.

Children's speech develops as the need to communicate; the child's vocabulary gradually expands. The word does not reflect the reality of the subject matter, but vision, also known as the language of the media, which creates one's understanding of this subject. The child starts creating word formations, that are distorted real words, in the third year of life. On the basis of L. Vigotsky's studies, it happens not because it is difficult for the child to pronounce or repeat those words, but because he understands the words like this (Miltiņa, 2005, 37; Zīriņa, Kauliņa, 2008, 162, 165; Выготский, 1997).

At the mid pre-school age the child uses the language not only to comment his work but also for discovering the world and creating his understanding about it. The child's language becomes smooth, expressive. The child intensively learns grammar forms of the language and new concepts which are created due to the feelings created by what he has seen, heard or experienced. The child is able to plan and regulate his speech (Rūķe–Draviņa, 1992, 286; Трошин, Жулина, 2005, 161).

Up to the age of five the child has mastered noun declensions, verb tense forms, knows how to form simple extended sentences, also has started forming complex sentences. Gradually the child acquires skills to reconcile nouns and adjectives in gender, number and case, he starts understanding the endings of the words and actively uses prepositions in his speech. At pre-school age a gradual transition from adult's initiated to child's own initiated narration. As the child's vocabulary expands, the syntactic and morphological structure of his speech matures, the child's narrative becomes increasingly more independent, the child wants to tell something to the surrounding people. The child's speech grammatically is similar to adults' speech. At this age the child has basically mastered grammar (Hoff, 2005; Svence, 1999).

The semantic basis of adjectives is the concept of feature. In one's consciousness or perception system adjectives exist as abstract notions of a feature the specific manifestation of which depends on the situation – in connection with a particular subject, a living creature or natural phenomenon. Thus, adjectives do not have their own denotation. Adjectives get the connection with their denotations only through the nouns that they denote (Nītiņa, 2015, 370). In the Latvian language adjectives have category of certainty/uncertainty. The author can additionally characterize different realia whether the object is known, previously mentioned, or unknown, uncertain judging from the definite or indefinite endings of

the adjectives. This means that this is one of those aspects of language learning, that can cause a problem to pre-school age children because his perception of the world is direct, specific and abstraction, skills of generalization have not developed yet. It also is often observed in the speech of pre-school, sometimes of elementary school and occasionally older monolingual Latvian children, but these mistakes are particularly observed in the speech of Russophonics children and adults.

### **Methodology**

In the development and implementation of the study theoretical and empirical research methods were used. Such a study on children's speech takes place in Latvia for the first time, therefore other countries, especially Norwegian scientists experience, was investigated, the theoretical basis of the study was developed, tests "Acquisition of morphosyntactic indicators: reconciliation of adjective and noun gender" were created, probated and improved.

To carry out the empirical research, 33 picture cards were created to determine the child's ability to reconcile the adjectives with nouns in number, gender and case. The study involved 15 children aged 3 – 5. In the Ministry of education and science description of the contents of compulsory general education from August 19, 2016, it is stated that the competency approach is the appropriate approach for the demand of the 21st century society, which envisages that to a person, who lives in constantly changing circumstances, freedom is provided by one's abilities that are based on competences. Competence is individual's readiness to act in today's changing world, the ability to use knowledge, skills and attitudes in solving problems, in real-life situations, the ability to apply learning outcomes adequately in a specific context (educational, work, personal or socially political). The author believes that the implemented pedagogical approach facilitates formation of communicative competence and is closely associated with the cooperation, adults' skills to direct the child's growth tolerantly, to use the unfinished sentence approach, explicitly formulate statements and questions.

In the framework of the project a control research with 10 Latvian speaking adults (6 women, 4 men) was carried out in order to find out what the typical mistakes are.

### **Results and discussion**

The empirical research investigated monolingual Latvian – speaking children's skill to reconcile adjectives and nouns in number, gender and case as well as the usage of definite and indefinite endings of adjectives applying the offered research tools of the monolingual and bilingual Latvian speaking children's grammatical and (morpho) phonological acquisition experimental study (Rodin, Westergaard, 2015). The methodology of the study and the images were created by the project researcher O. Ureka (Urek, 2016).

Using the 33 picture cards the child's ability to reconcile adjectives with nouns in number gender and case, as well as the usage of definite and indefinite endings of adjectives was stated. Through investigating the formation of grammatically accurate speech of 3 – 5-year-old children, also sound pronunciation was observed, although the picture cards were not especially selected for this purpose, as well as children's knowledge about the realia and their colors seen in the picture.

The children were invited to look at the picture, to name what they see in it. Detailed questions were asked to the child, for example: It is a carrot. This one, too. Compare the carrots' colors. Look carefully! What disappeared?

Analyzing the conclusions of pedagogy, psychology, philosophy and linguistics about the development of children's grammatically accurate speech, criteria and indicators for evaluation of grammatically accurate speech were developed (Table 1).

In the research child's skill to reconcile nouns and adjectives in number, gender and case was investigated, as well as his skill to use the ending of the adjectives correctly. 15 children aged 3,2 – 4,11 took part in the research (9 boys and 6 girls).

Table 1

**Criteria and indicators for evaluation of grammatically accurate speech**

Criteria	Indicators	Level of grammatically accurate speech
The skill to use grammatically correct language	1. The skill to reconcile nouns and adjectives in number, gender and case grammatically accurately	Low – the child does not reconcile the nouns and adjectives in number, gender and case or does it rarely.
		Sufficient – the child reconciles the nouns and adjectives only in number and gender.
		High – the child independently reconciles the nouns and adjectives in number, gender and case
	2. The skill to use the definite and indefinite endings of adjectives correctly.	Low – the usage of definite/indefinite endings is chaotic or the child rarely uses correct endings.
		Sufficient – the child uses the definite/indefinite endings correctly, but sometimes makes mistakes.
		High – the child independently uses the definite/indefinite endings correctly.

In order to analyze the got results purposefully, all the indicators were evaluated in points:

- 1 point – low indicator in children's speech was observed rarely (pictures 0 – 6),
- 2 points – sufficient indicator was observed in children's speech often (picture 7 – 14),
- 3 points – high indicator was observed in children's speech almost always or always (pictures 15 -22).

In both cases the results were obtained in a direct observation, the adjectives and nouns mentioned by the children were registered in the observation worksheet, as well as recorded. All the results were control checked. In order to state the child's level of grammatically accurate speech the results were evaluated and analyzed (Figure 1).

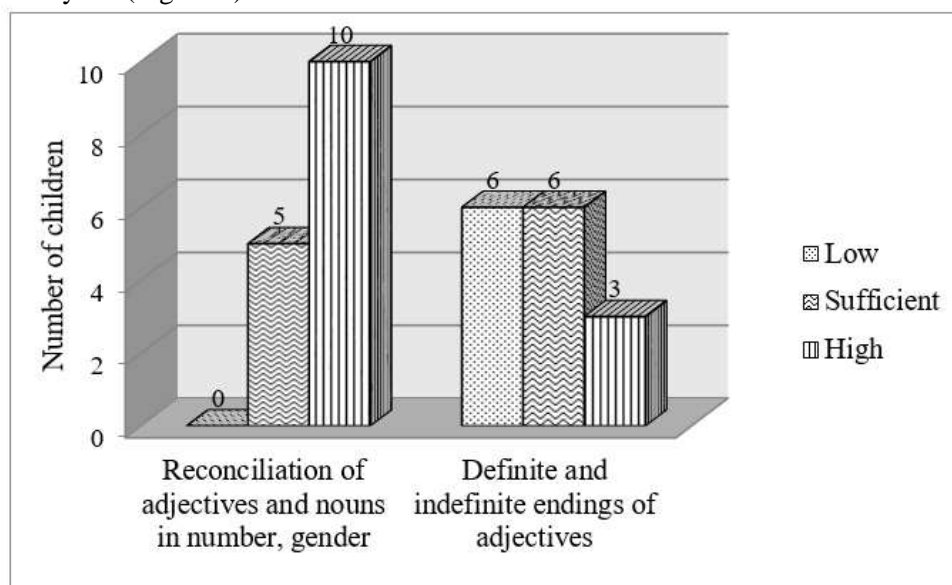


Figure 1. 3 – 5 years old children's skill to form grammatically accurate utterances.

As shown in Figure 1, top rated skill is, reconciliation of adjectives and nouns in number, gender and case. None of the children showed low level results, 5 children showed sufficient level level results, 10 children showed high level results. As it was predicted, quite often children use the definite and indefinite endings of adjectives incorrectly: 6 children have low level, 6 children –medium level, only 3 children used them at high level.

Analyzing children's utterances the following shortcomings were found:

- children mix colors or replace them by another color familiar to them, such as: green steering wheel: blue steering wheel, brown carrot: dark gray carrot, white plate: the transparent plate;



- the reconciliation of such nouns as ear, eye, the castle with the adjectives causes difficulties to children, for example, a red ear, the brown ears, the blue ears, a red eye, the green eyes, a green castle. It shows that children seek for a system in grammar and replace the less frequently applied feminine nouns of the 6th declension with the better known 1st declension nouns.

The obtained research results show one more tendency typical for that age children – as in every day life, also in the language children strive for clarity because the usage of definite endings prevail over the indefinite endings in their speech. Only in some cases the indefinite ending was used correctly.

Interesting results were obtained in a study of adults' speech, where 10 adults (6 women and 4 men) whose native language is the Latvian language took part (Table 2). The Latvian language is also used in everyday communication. Adults were offered the same picture cards and had to perform the same task as the children.

Table 2

**Participants' age and education**

Male	Female	Male	Male	Female	Female	Female	Female	Male	Female
37;10	33;0	34;8	45;7	24;10	18;9	24;2	45;3	56;3	22;7
Second.	Second.	Second.	Second.	Second.	Primary	Second.	Higher	Higher	Second.

It was found out that only 2 females (33; 0); (22, 7) and one male (45;7), used the definite and indefinite ending correctly. The oldest male (56; 3) demonstrated the largest number of inaccuracies, out of 31 samples he made 30 mistakes of using definite/indefinite endings of adjectives. Other members showed some deviations from the norm in their speech. Adults' comments about the situations shown in picture 31 were analysed (Figure 2).

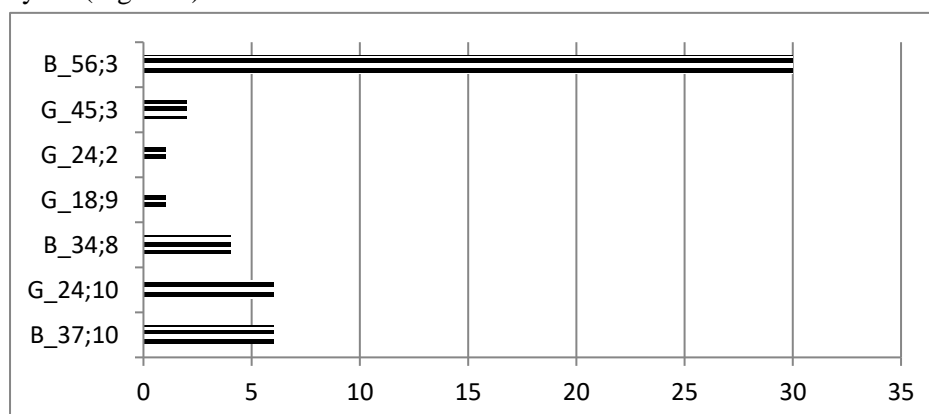


Figure 2. Inadequate usage of definite/indefinite endings of adjectives in adults' speech.

As it is showed in the table above, adults also make mistakes in their speech when they have to apply the correct definite/indefinite endings of adjectives. Of course, the number of respondents is too small to make far-reaching conclusions. In order to obtain scientifically reliable data, a study should be carried out with a much wider set of respondents covering different age, education, social status and other groups. Possibly, both the children and adults were baffled by the need to use a little bit artificial, contextually related language constructions, as grammatical markers could not appear in the hint phrases. At the same time, the results of the study are symptomatic and worth parents and preschool teachers' attention. Obviously parents and teachers' role in the development of children's communicative competence, as well as in other spheres of upbringing, is essential. J. Rodina and M. Vestergard in their study on how grammatical categories are used by bilingual (Norwegian and Russian) children, concluded that the major impact of the use of the category is made by the external factors – family and the environment in which the child resides, as well as prediction of the gender of nouns as an effective means of acquiring nouns' grammatical category (Rodina, Westergaard, 2015). In order to make the child talk and interact, he needs a positive example.

Language system is formed and evolves in blocks. In each development stage of the child's speech there is a block in which the phonetic, lexical, grammatical units combine in a single entity. The closed systems of the block consist of phonetics and grammar, but the open subsystem consists of vocabulary which is constantly changing and developing (Miltiņa, 2005, 42). When acquiring a language, a number of components are learned: phonetical (sounds, groups of sounds), lexical (vocabulary), grammatical or

morphological (structures and models of the grammar system), pragmatic (ability to listen, to hear each other in a socially acceptable manner) (Hoff, 2005, 32).

As adjective are actively used in various language genres and styles, the development of grammatically correct speech should be paid attention to already at pre-school age. In pre-school education curriculum there are tasks for that, but they are not enough. Teachers when organizing the learning process, follow the curriculum but if the tasks are not accurately targeted the learning process is defective because one of the conditions of successful language learning is purposefully planned environment in which a child tries to consciously create the attitude to himself and the world, gains an idea of the surrounding world and forms his value system. Natural environment of speech is the environment where language acquisition happens spontaneously, while artificial speech is purposely organized. Natural environment of speech may be beneficial or interfere with the development of the child's speech and also the general mental development. It will be beneficial when adults speak with children in a clear language, promote the development of children's speech, answer their questions. So teacher's natural speech when communicating with children on daily basis is very important. Children have the opportunity to hear the narration, where different adjectives are heard, track it, listen how different sentences sound. Children usually perceive them unconsciously, and then just as consciously imitate in their speech. At the same time with empathy, imagining the heard narration the children gain new linguistic experience and learn to express their feelings. If you then create a dialogue with children or play a game where they have to use adjectives with definite/indefinite endings, the children remember not only the form but also the usage of the adjective. By stimulating the need to use models both in familiar and new situations, the desired result is achieved. Communicative skills allow the child to participate in all forms of communication when he uses his speech in action. With engaging in different communication situations, the child gradually gets involved in speech environment and learns to use the means of language according to the specific speech situation and acquires experience in making a dialogue (Казаковская, 2006).

Questions are very important in adult and children's communication. The questions that adults ask contribute to the child's communicative competence- acquisition of language systems, vocabulary development and communicative skills. The adult, when talking to the child, creates a dialogue, thus encouraging the child to speak. The child, when creating sentences, uses a wide range of grammatical forms, but wisely asked questions help children learn the concepts (Fisher, 2005; Irbe, Lindenberga, 2014, 138; Freiberga, Dzintere, 2009, 212; Казаковская, 2006). Teachers' questions preferably should be designed to encourage intellectual activity, encourage kids to think. The questions that already contain the answer do not promote thinking. Adults' questions should cause the child's desire to communicate. Productive questions should be asked more actively as generally the expected answers to closed questions are "Yes" or "no", they reflect the people's choice, but do not contribute to rendering the reflection of expanded thought in speech (Fisher, 2005; Tauriņa, 2015). Productive and stimulating questions promote the child to think or do, they activate the partner, express interest, suggest the interlocutor to ponder on responses, the child feels more relaxed, because he himself can choose which facts, ideas, information, provide the adult with (Fisher, 2005).

Not enough attention is paid to the role of the family in acquisition of mother tongue, because the basis of the language is created at an earlier age, prior school age. Children's ability to perceive the language material is immense, so parents are advised to speak with children in the richest possible language (Druvieta, 2010, 204; Rodina, Westergaard, 2015).

Almost since the birth the child begins to develop contacts with the surrounding people. Common activities and social games with peers are more active at preschool age when true exchange of thought and joint action take place. This interaction causes the children also count with opposing views and encourages them to adopt new ideas and learn new behavior (Lyle, Russo, 1998).

Analyzing the theoretical conclusions about the pedagogical conditions of 3 – 5 years old children's grammatically accurate speechformation, a pedagogical implementation model was developed for promoting the acquisition of the Latvian language to pre-school age children (Figure 3).

The teacher respecting the child's experience, needs and interests, improves the environment, which brings forth new impressions, invites children to express themselves through productive questions. The teacher is aware of the motives that are created by the activity of the child and are personally significant experiences.

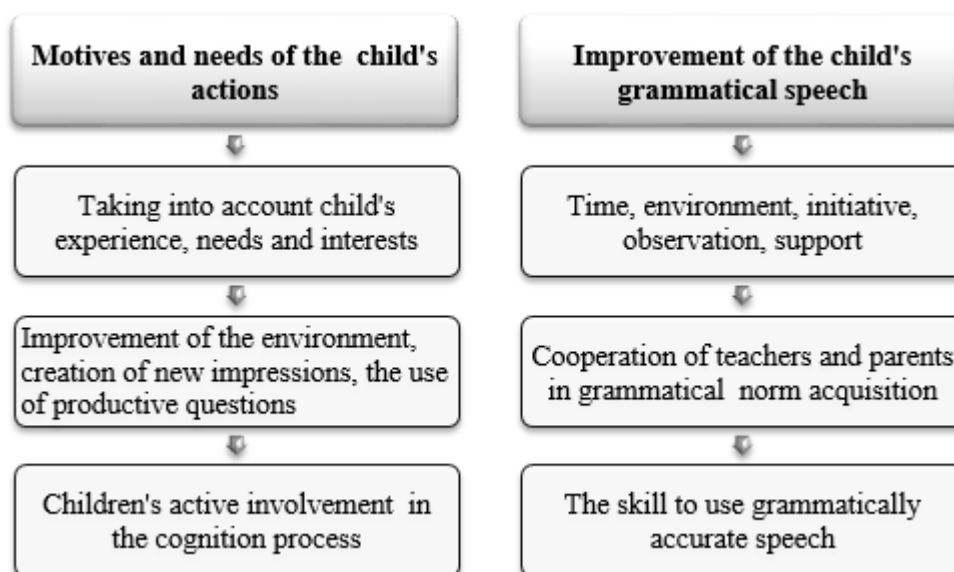


Figure 3. Promotion of the acquisition of the Latvian language to pre-school age children: pedagogical implementation model.

Consciously planned environment is the main proposal for the speech. The surrounding environment, the environment of the speech and social environment are important in the acquisition of the language. The surrounding environment includes the objects and creatures the child sees around and serves as an inner and outer stimulus for developing child's speech. The environment of speech includes the quality of speech, the quality of communication process, the relationship between the partners who participate in the talk, the content of the talk and its correspondence to the child's experience. Social environment represents such relationship between the learners and teachers that promote positive emotional interaction and cooperation (Anspoka, 2013, 16).

To encourage the child to speak, unfinished sentences, concisely expressed questions and accurate speech are used. Adults encourage children to participate in the game "Tell, compare your and your neighbor's clothes!", "What color are the toys?", "Let's start boasting!" The teacher asks children to involve in games, practical, everyday situations, to participate in independent process of recognizing objects actively. The teacher respects and supports the child's choice. The cooperation of teachers and parents happen on cognition level, allowing to implement the tasks promoting acquisition of grammar norms.

## Conclusions

One of the conditions for successful language learning is the teachers and parents' speech sample, culture of speech, as well as active, free, targeted environment that enables children to explore, watch and see patterns, to build understanding of the value of mutual relations and events. 3 – 5 years old children's skills to reconcile adjectives with nouns in number, gender and case is successful, if the teacher offers appropriate themes for developing the Latvian language, using productive questions, accurately describing the objects, actions, comparing them, causing the child to engage actively in the cognition process.

The usage of definite/indefinite endings of adjectives causes difficulty to children. Only 20 % of the children involved in the research use the adjective endings correctly therefore when designing the curriculum, particular attention should be paid to the necessity to purposely create natural linguistic environment, to explore the category of certainty and uncertainty, to use the appropriate means of expression.

## Bibliography

1. Anspoka Z. (2013). Daži lingvodidaktikas aspekti valodu mācīšanās veicināšanai pirmsskolā un skolā (Several Features of Lingua-Didactics for Promoting Language Learning at Pre-school and School). Zinātnisko rakstu krājumā *Valodas mācības pirmsskolā un sākumskolā*. Rīga: SIA Zelta rudens, 9. – 27. lpp. (in Latvian)

2. Druviete I. (2010). *Skatījums. Valoda, sabiedrība, politika. (Point of View. Language, Society, Politics)*. Rīga: LU Akadēmiskais apgāds. (in Latvian)
3. Fisher R. (2005). *Teaching Children to Think*. (2nd ed.). Cheltenham: Nelson Thorne Ltd.
4. Freiberga I. (2006). Dzimtās valodas devalvācija un bērna attīstība pirmsskolas vecumā empīrisko vērojumu un teorētisko atziņu aspektā (Devaluation of the Native Language and the Child's Development During the Preschool Age as Seen from the Point of View of Empirical Observations and Theoretical Conclusions). RPIVA 3. Starptautiskā zinātniskā konference *Teorija praksei mūsdienīgu sabiedrības izglītībā (Theory for Practice in Education of Contemporary Society)*. Rīga: RPIVA, 133. – 138. lpp. (in Latvian)
5. Freiberga I., Dzintere D., Augstkalne D. (2009). *Bērna valoda jaunradē un rotaļā (The Child's Language in Creativity and Games)*. Rīga: SIA izglītības soli. (in Latvian)
6. Hoff E. (2014). *Cengage Advantage: Language Development*. (5th ed.). United States: Wadsworth Publishing Co Inc.
7. Hoff E. (2005). *Language Development*. (3<sup>rd</sup> ed.). USA: Florida Atlantic University.
8. Irbe A., Lindenberga S. (2014). *Bērns mācās runāt ģimenē (A Child Learns to Speak in a Family)*. (2nd ed.). Rīga: RaKa. (in Latvian)
9. Lieģeniece D. (2003). Pārdomas par 5–7 gadus veca bērna sagatavošanu skolai (Views on the 5-7 Year-Old Child's Preparation for School). Rokasgrāmatā skolotājiem: R. Kaņepēja, D. Lieģeniece, E. Černova, D. Dzintere, I. Pučure, R. Ukstiņa, I. Miķelsone, I. Suruda *Es gribu iet skolā*. Rīga: Puse Plus, 13 – 17. lpp. (in Latvian)
10. Lyle E. B., Russo N. F. (1998). *Psychology: Instructor's Manual: Behavior in Context*. New York; London: WW Norton & Co.
11. Lūse J., Miltiņa I., Tūbele S. (2012). *Logopēdijas terminu skaidrojošā vārdnīca (Glossary of Speech Therapy Terminology)*. Rīga: RaKa. (in Latvian)
12. Miltiņa I. (2005). *Skaņu izrunas traucējumi (Articulation Disorder)*. Rīga: Raka. (in Latvian)
13. Nītiņa D. (2015). Īpašības vārds (adjektīvs) un adjektīviskais divdabis (The Adjective and Adjectival Participle). *Latviešu valodas gramatika*. Rīga: LU Latviešu valodas institūts, 370. – 412. lpp. (in Latvian)
14. Rodina Y., Westergaard M. (2015). Grammatical Gender in Bilingual Norwegian–Russian Acquisition: The Role of Input and Transparency. *Bilingualism: Language and Cognition*. UK: Cambridge University Press.
15. Rūķe–Draviņa V. (1992). *No pieciem mēnešiem līdz pieciem gadiem (From Five Month to Five Years)*. Rīga: Zvaigzne. (in Latvian)
16. Svence G. (1999). *Attīstības psiholoģija (Developmental Psychology)*. Rīga: Zvaigzne ABC. (in Latvian)
17. Tauriņa A. (2015). Latviešu bērnu izmantotās uzrunas formas multikulturālā vidē (Latvian Child Used Form of Address in a Multicultural Environment). Rakstu krājumā: A. Vulāne, D. Markus (red.) *Bērnu valoda Latvijā 21. gadsimtā*. Rīga: Zinātne, 223. – 246. lpp. (in Latvian)
18. Tūbele S. (2015). Runas un valodas sekmīgas attīstības priekšnoteikumi (*Prerequisites for Successful Speech and Language Development*). Rakstu krājumā: A. Vulāne, D. Markus (red.) *Bērnu valoda Latvijā 21. gadsimtā*. Rīga: Zinātne, 265. – 280. lpp. (in Latvian)
19. Urek O. (2016). Consonant – Vowel Interactions in Modern Standard Latvian: A Representational and Constraint-Based Account. *Glossa: a journal of general linguistics* Vol. 1(1), 22, pp. 1 – 34. [online] [15.11.2016.] Available at <http://dx.doi.org/10.5334/gjgl.83>
20. Zīriņa T., Kauliņa A. (2008). Vides ietekme uz valodas attīstību (Environmental Impact on Language Development). Letonikas otrais congress (29.–31.10.2007) *Valodniecības raksti – 2*. Rīgā: LU aģentūra „LU Latviešu valodas institūts”, Rīgas Pedagoģijas un izglītības vadības akadēmija, 160 – 168. lpp. (in Latvian)
21. Выготский Л. (1997). *Вопросы детской психологии (Issues of Child Psychology)*. Санкт – Петербург: Союз. (in Russian)
22. Выготский Л. (2005). *Психология развития человека (Psychology of Human Development)*. Москва: Изд-во Смысл: Эксмо. (in Russian)
23. Казаковская В.В. (2006). *Вопросо- ответные единства в диалоге "Взрослый-ребенок": на материале русского языка (Interaction of Questions-Answers in a Dialogue "Adult-Child" on a Material of Russian Language)*. Санкт-Петербург: Наука. (in Russian)
24. Трошин О. В., Жулина Е.В. (2005). *Логопсихология (Logopsychology)*. Москва: ТЦ Сфера. (in Russian)

## Causes of Failures in Mathematics by Engineering Students at Latvia University of Agriculture

Anda Zeidmane<sup>1</sup> Dr. paed.; Tatjana Rubina<sup>2</sup> Dr. sc. ing.

Latvia University of Agriculture, Faculty of Information Technology, Latvia<sup>1, 2</sup>,

Department of Mathematics<sup>1</sup>; Department of Computer Systems<sup>2</sup>

[anda.zeidmane@llu.lv](mailto:anda.zeidmane@llu.lv)<sup>1</sup>; [tatjana.rubina@llu.lv](mailto:tatjana.rubina@llu.lv)<sup>2</sup>

**Abstract:** The quality of teaching and learning mathematics has been one of the major challenges and concern of the educators especially for students of engineering. Mathematics comprises a wide variety of skills and concepts. One of the main roles of mathematics is the development of the ability to solve problems. Mathematics is often considered as a subject that students find hard to understand, therefore many universities are faced with the problem that students drop out due to mathematics. The aim of the research is to study causes for failure in Mathematics among engineering students. The study is based on the analysis of mathematics test results as well as the survey data analysis. The survey collected data and opinions regarding: 1) the curriculum, 2) the teaching process, 3) the learners: their low basic knowledge, difficulties to understanding, learning habits, attitudes toward learning process, home background, and the learner's emotional reactions and personality. The analysis of the survey results showed that the core problem at the Latvia University of Agriculture is not only insufficient students' background knowledge in mathematics, but also their attitude towards learning, psychological reaction against the first failure and laziness to make efforts to do additional tasks or attend tutorials.

**Keywords:** competences, causes of failures, mathematics, student related factors, university education.

### Introduction

Engineering education should focus not only on the development of professional competences – professional knowledge, professional skills and reflection but also on the development of cognitive competence, ability to solve problems as well as social competences such as self-competence, co-operation and communication. The quality of the engineering education depends on the quality of individual study subjects. Mathematics studies have an impact on the development of the necessary outcomes for engineers' both directly and indirectly (Zeidmane, 2012). Everyone is aware of the direct impact of mathematics, which serves as a tool for solving and calculating various problems. However, much greater is indirect impact of mathematics providing such learning outcomes as the skills to formulate, solve engineering problems, use language of symbols, make long chains of logical conclusions.

In the 17th SEFI seminar "Mathematical Education of Engineers" which held in 2014, it was noted that many beginners in mathematics, natural and engineering sciences as well as in economic sciences have big problems starting their studies because of their lack of mathematical competencies. The quality of teaching and learning mathematics has been one of the major challenges and concern of the educators. Mathematics is often considered as a subject that a student mostly finds hard to understand. (Prakash, Jerlin, 2014). Mathematics education should enable engineering students to communicate their ideas in an unambiguous and understandable way and should equip themselves with the analytical skills as practicing engineers. Mathematical courses have the highest dropout rate throughout the world. For example, in Germany, about 20 % of students who begin a mathematics programmes will fail to complete it, however, for students of mathematics-related fields, that number jumps to more than 30 % (Fox, 2010). A similar situation is in America, Europe, Africa, Asia. The teaching staff of many universities carry out the research to find out the reasons for a large number of students who have not passed mathematics, as well as look for ways to remedy the situation. Similarly, at the Latvia University of Agriculture (LLU) more than 25 % of the engineering specialities' students drop out just after the first year in which mathematics is one of the basic subjects.

**The aim of the research** is to study causes of failure in mathematics among engineering students at the Latvia University of Agriculture. The study is based on the analysis of mathematics test results as well as the survey data analysis. The survey collected data and opinions regarding: 1) the curriculum, 2) the teaching process, 3) the learners: their low basic knowledge, difficulties to understanding, learning habits, attitudes toward learning process, home background.

## Methodology

Achievement in mathematics depends on several factors. One of the problems researchers mention is related to the learning process. The Swedish professor J. Lithner (Lithner, 2011) underlines two reasons for mathematics learning difficulties: 1) content understanding difficulties, 2) difficulties with mathematical processes.

The main problems of misunderstanding in mathematics content are: 1) inability to use mathematics as a language of symbols which combines a continuous unity of the verbal expression and 2) the sub-language of special symbols that are used according to the rules (Zeidmane, Sergejeva, 2013). Mathematics contains huge didactic units of learning material; in addition, the teacher cannot avoid reviewing complex definitions and long evidences in the process of teaching mathematics.

Another important point to mention is the fact that mathematics is characterized by long chains of logic conclusions which relate to difficulties in learning process. Many students are not ready neither physically nor mentally for the hard work to acquire long information units. Students have difficulties in understanding proof statements, making the transition from informal to formal reasoning and constructing proofs. Students should acquire creative and imitative reasoning.

On the other hand, "learning difficulties" is a relative notion. Everyone has difficulties, even the best. As Albert Einstein said, "do not worry about your difficulties in mathematics; I can assure you that mine are still greater".

The lack of mathematical competencies (Niss, 2002) is also an important reason for the difficulties to study mathematics at universities. Prior to the studies at the university, students learn mathematics for 12 years and during this time, students should acquire basic mathematical competencies which, of course, will be further improved by the university. The professors of Institute of Mathematical Sciences have identified eight key mathematics competences (Laursen, 2003): mathematical thinking, problem handling, modelling, reasoning competences, representation, symbol and formalism, communication and aids and tools.

Another research emphasizes six key mathematical competencies (Turner, 2011):

- communication,
- mathematising,
- representation,
- reasoning and argument,
- strategic thinking and using symbolic,
- formal and technical language and operations.

The cause of the large number of dropout students in mathematics is to be found not only in the acquisition of mathematics. There are other factors that contribute to students' poor performance in mathematics at Kenya (Mbugua, Kibet, 2012):

- student factors: entry behavior, motivation and attitude;
- socioeconomic factors: education of parents and their economic status;
- school-based factor: availability and usage of teaching/learning facilities, school type and teacher characteristics.

The group of professors from the United States (Cherif, Adams, 2014) did the research about the causes of student failure in universities, analyzing the problem and finding solutions that could productively lead to helping teaching staff teach and students learn and succeed. The research identified three main root-cause **factors** for students' failing: 1) student-related factors; 2) life and socioeconomic issues, 3) failures of the educational system (Figure 1).

The significant number of incoming students *is not ready for university-level work*. They have poor levels of or a complete lack of academic preparedness for university courses, the lack of learning and study skills, and/or lack of organizational skills (including time management and setting priorities).

Both the *lack of effort* and *poor or non-existent work ethics* as subcategories are not less important categories. Relatively often students do not complete assignments and consider that homework is unimportant. Sometimes students devote insufficient attention during class. Similarly, Professor

M.Ibrahim (Ibrahim, 2015) from Nigeria in his research recognized that failure in mathematics was due to apathy or hatred for the subject, laziness or lazy attitude to studying the subject.

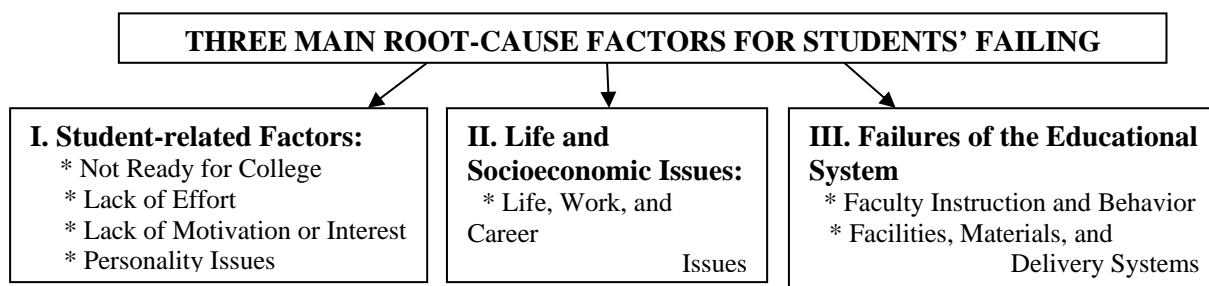


Figure 1. Identified Categories of Root-Cause Factors (adapted from Cherif, Adams, 2014).

*Lack of motivation or interest*, persistence, and “not being active learners” are important categories too. Some students even do not care if they are students at a university or not.

The category of *personality issues* should not be overlooked comprising *the lack of social connection, lack of support system and network* and *poor self-esteem and self-confidence*.

Factors “*Life and Socioeconomic Issues*” and “*Failures of the Educational System*” that affect students' academic failure in mathematics are important, too, but solution of these problems requires changes in the study programme and in all educational system, and it is not the responsibility of the authors.

As regards the Latvia University of Agriculture (LLU), one of the main causes of failure assessments in mathematics is related to the factor that students are *not ready for university*. A significant number of incoming students lack the background knowledge, mathematical competencies including scientific reasoning skills, learning and study skills, responsibility for the learning process, organizational skills (including time management and setting priorities).

Many studies, events and activities have been carried out by the Department of Mathematics of the Latvia University of Agriculture with the purpose of improving results of mathematics learning process. Nevertheless, the teaching staff often notes that students do not use these opportunities, therefore the aim of the study is to explore the student-related factor as the cause for students' failure.

In order to achieve the aim of the research, the survey was carried out. The survey questions were divided into the following four groups: 1) students' success measured by grades, 2) work invested in learning process, 3) attitude to the learning process, 4) competencies necessary for learning mathematics.

The following research methods were used to analyse the survey results: descriptive statistics and correlation analysis.

## Results and discussion

In order to identify causes for failure in mathematics among students of engineering programmes, the research was carried out in the Department of Mathematics of the Latvia University of Agriculture. Over 100 students were surveyed within this study. The survey was conducted with the aim to find out students' opinion and self-assessment of their success, acquired competences in mathematics and the time evaluation that was consumed for studying mathematics. The results of students' questionnaires from the Faculty of Information Technology (FIT) and Faculty of Engineering (FE) were compared.

The results show that only 30 % of the first-year students from FE who finished a gymnasium and 23 % of students from FIT have received more than 70 % of the assessment score in the centralized exam. It is disturbing that 60 % of students from FE and 23 % of students from FIT have received less than 40 % score (Figure 2). The obtained results indicate to low basic knowledge in mathematics. It is not surprising that only 10 % of the students from FE and 31 % of the students from FIT have received more than 70 % of the assessment score on LLU 1<sup>st</sup> task test.



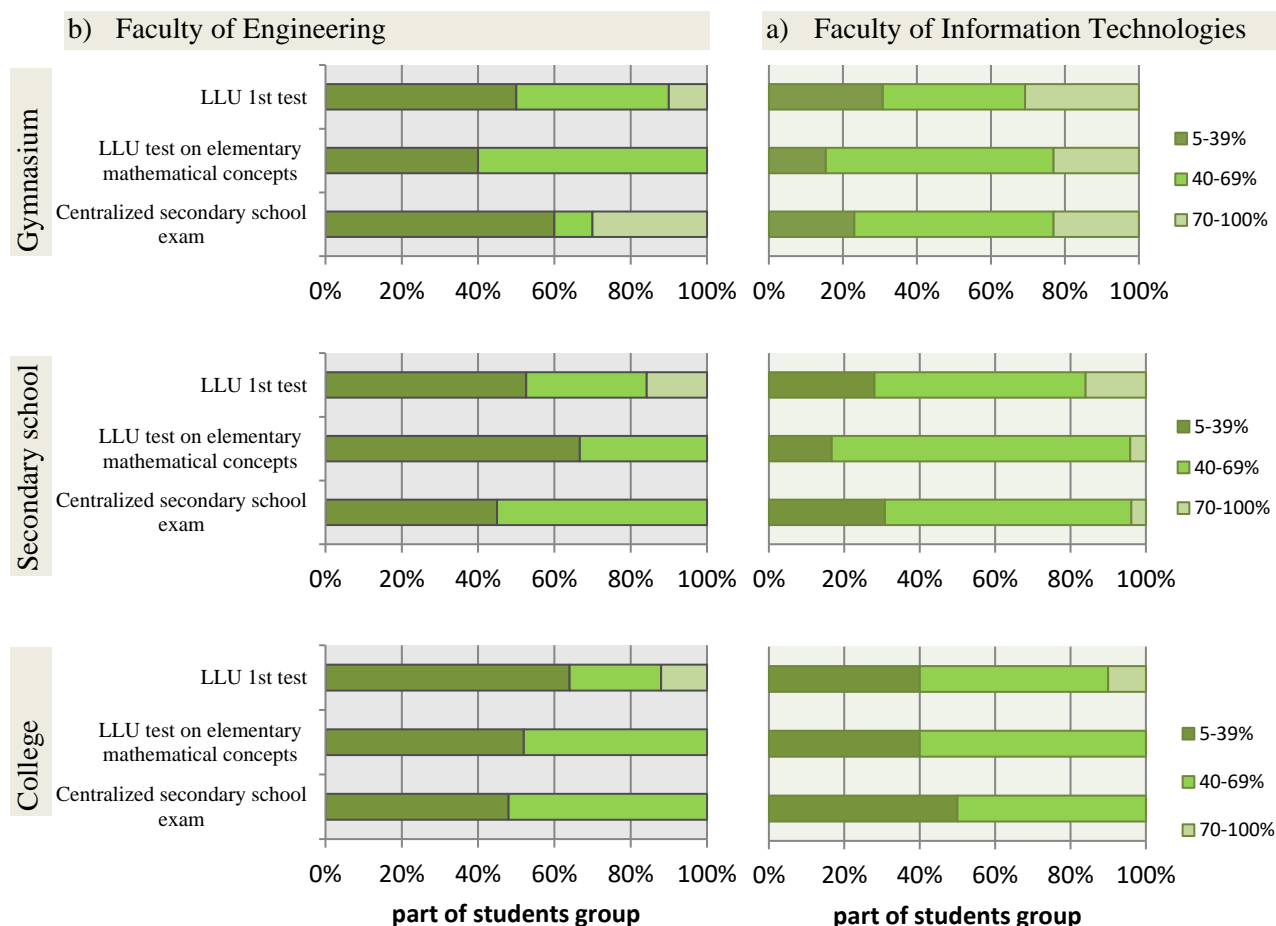


Figure 2. The results of students who graduated from Gymnasium, secondary school and college.

Results of the first year students who finished a secondary school are worse. In this group no students (total 20 students) from FE and only one student (total 26 students) from FIT have received more than 70 % of the assessment score in the centralized exam. Their results in LLU 1<sup>st</sup> task test also are lower. Results of the first year students who finished a college are similar to students who finished a secondary school. Almost 50 % of both faculties' students received less than 40 % of the assessment score in the centralized exam. Their results on LLU 1<sup>st</sup> task test also are weak. Only 12 % of students from FE and 10 % of the students from FIT have received more than 70 % of the assessment score in LLU 1<sup>st</sup> task test.

The results of the first year students show mostly average basic knowledge of mathematical concepts. The results of students from FIT are slightly better than FE students' results. More than 60 % of students received more than 40 % of the assessment score in LLU test on elementary mathematical knowledge. However, relatively better knowledge is shown by students who finished a gymnasium. FE students have showed the lack of knowledge. The results show that 40 % of students who finished a gymnasium, 60 % of students who finished a secondary school and 52 % of students who finished a college received less than 40 % of the assessment score in LLU test on elementary mathematical knowledge and none of them received more than 70 % of score. The correlation was analysed between the results of the LLU 1<sup>st</sup> task test and the grade in the centralized secondary school exam in mathematics. In case of FE students there was a positive medium correlation between the results of the LLU 1<sup>st</sup> test, the grade in centralized secondary school exam  $r_s = 0.54$  ( $p=0.01$ ) and the grade in LLU test on elementary mathematical concepts  $r_s = 0.52$  ( $p=0.01$ ). In case of students from FIT there was only a positive medium correlation between the results of the LLU 1<sup>st</sup> test and the grade in LLU test on elementary mathematical concepts  $r_s = 0.36$  ( $p=0.01$ ).

At the end of a secondary school students must have developed competencies such as the use of symbol language, mathematical representation, problem solving, opinion formation and others. The results of students' competencies are divided into two groups according to the faculty (Figure 3).



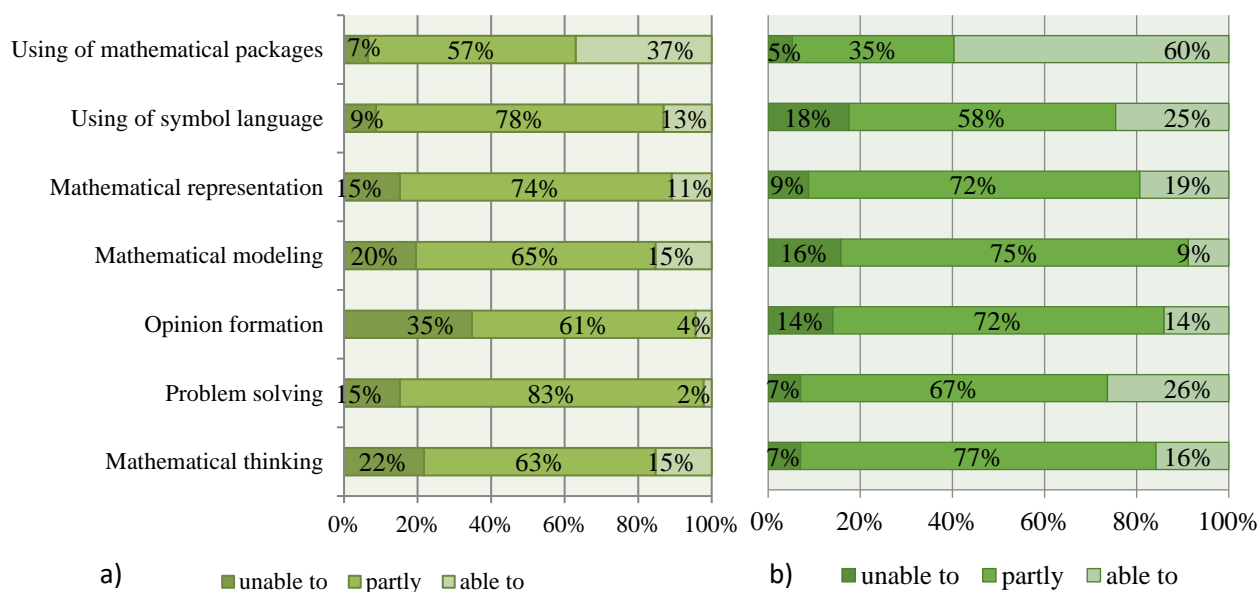


Figure 3. The results of students' competencies assessment:  
 a) students from the Faculty of Engineering;  
 b) students from the Faculty of Information Technology.

The results show that students from FIT evaluate their competences as relatively secondary developed than the FE students. The majority of respondents consider that competences are developed partly. As the results show, 78 % of students from FE and 58 % of students from FIT can partially use symbol language (mode = median = "partly"). At least 72 % of students from both faculties can partially create graphs and present results in mathematical manner (mode = median = "partly"). Not more than 16 % of both faculties' students have developed mathematical thinking. Only 2 % of students from FE and 26 % of students from FIT are able to solve mathematical problems (mode = median = "partly"). Likewise, the competence of opinion formation is evaluated. Only 37 % of students from FE (mode = median = "partly") and 60 % of students from FIT (mode = median = "able") are able to use mathematical packages.

The mathematical thinking competence of students from FIT (Spearman's  $r_s = 0.41$ ;  $p=0.01$ ) has medium correlation with a grade of the centralized secondary school exam. Other competences have low correlation with a grade of the centralized exam. The mathematical thinking competence of students from FE (Spearman's  $r_s = 0.3$ ;  $p=0.05$ ), problem solving (Spearman's  $r_s = 0.32$ ;  $p=0.05$ ), opinion formation (Spearman's  $r_s = 0.43$ ;  $p=0.01$ ) significantly correlated with a grade of the centralized secondary school exam.

Several opportunities are provided to students to improve their mathematical knowledge. As one of the possibilities, a remedial mathematics course was offered to students. Students with unsatisfactory test results, especially those with the test score less than 40 %, were supposed to attend it. Unfortunately, the students' interest in these courses was very low, only 20 % attended the course. The other option was the design of the summary of the necessary mathematical topics by the department staff. To support students, students were encouraged to use tutorials where revision of the secondary school mathematical topics was provided.

The *attitude* towards learning process is a much more important problem. It is not possible to expect good results in LLU task tests if students with low skills and basic knowledge in mathematics do not attend lectures and do not perform the homework in the allotted time. Moreover, students have an opportunity to attend consultations and to get the help in doing homework from the teaching staff. Step-by-step examples of practical mathematics problem solutions with MathCad in the e-environment are available for students as well.

The grade of LLU 1<sup>st</sup> task test of students from FE (Spearman's  $r_s = 0.52$ ; Kendall's  $r_K = 0.48$ ;  $p=0.01$ ) has a medium correlation with the factor "timely done homework". But in case of students from FIT

there was a positive medium correlation between the results of the LLU 1<sup>st</sup> task test and “the timely done homework” (Spearman’s  $r_s = 0.32$ ;  $p=0.05$ ).

The results of the survey show that students were keen to attend lectures (mode=median=“Yes”): 91% of FE students and 93 % of students from FIT gave positive answers (Figure 4).

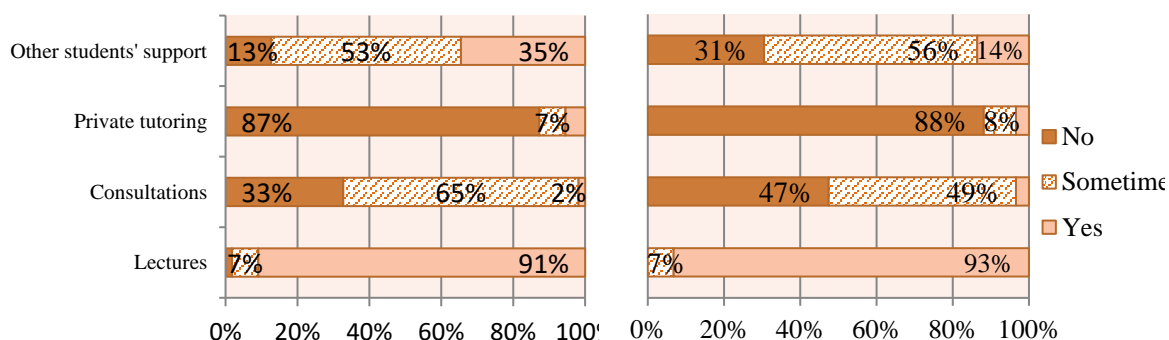


Figure 4. The students’ opinion regarding factors helping to improve their mathematical knowledge:  
a) students from the Faculty of Engineering  
b) students from the Faculty of Information Technology.

However, students of both faculties rarely use other options that can help them to improve mathematical knowledge and achieve a higher level of mathematics. Unfortunately, 33 % of FE students and 47 % of students from FIT do not use teachers’ consultations. It should be noted that more than 87 % of students of both faculties do not use private tutoring. It pleases that 35 % of FE students and 14 % of students from FIT ask for help to group mates regularly and more than 53 % of both faculties’ students do it sometimes.

The analysis of the survey results related to students’ contribution to their study process showed that almost every student listens during practical work and tries to understand the study material. However, there are students, e.g. 15 % of both faculties’ students that sometimes do not try to follow lectures and understand the material (Figure 5). Taking into account the fact that homework should be completed until the task test, more than 48 % of students from FE and more than 34 % of students from FIT not always complete the homework in the available time.

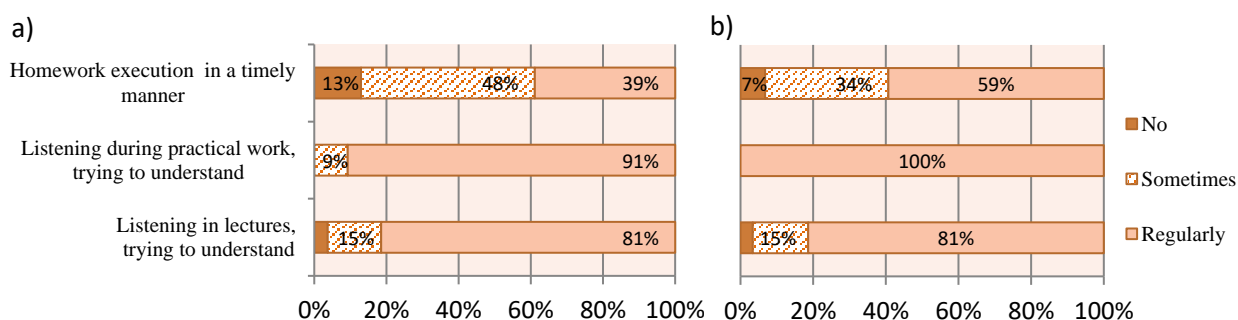


Figure 5. The students’ opinion regarding factors helping to achieve higher level of mathematics:  
a) students from the Faculty of Engineering;  
b) students from the Faculty of Information Technology.

One of the key factors of success in the learning process is students’ motivation and dedication. A large-scale problem is laziness and the so-called “student syndrome”, i.e., tendency to postpone the work until the last moment. For this reason, one of the survey questions asked respondents to evaluate the time they spent for learning mathematics. The results are summarized in Figure 6.

In order to achieve better results in tests students should work independently, i.e., individually. According to the university programme, a student needs to spend at least 4 hours on individual work. The results show that the most part of students devotes no more than 4 hours to doing homework. A little more time is devoted by the students from Faculty of Information Technologies. It is not surprising that more than 50 % of students of both faculties spent less than 2 hours on preparation process for 1<sup>st</sup> task test.

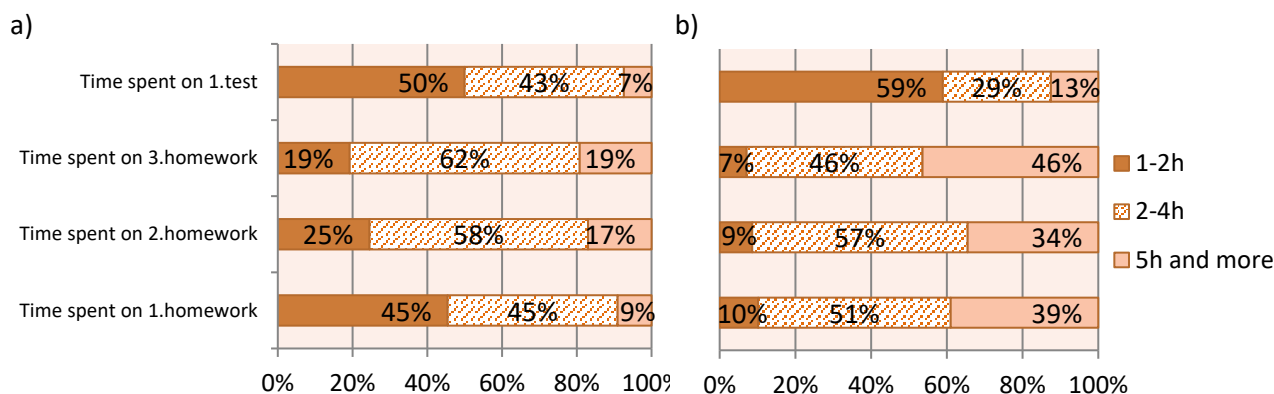


Figure 6. The students' opinion regarding factors helping to improve their mathematical knowledge and achieve higher level of mathematics: a) students from the Faculty of Engineering; b) students from the Faculty of Information Technology.

### Conclusions

- The problem of the growing number of dropout students is typical for many universities. It is necessary to identify the reasons for this tendency. One of the main causes in LLU is a lack of background knowledge in mathematics which is evidenced by the students' results of the centralized secondary school exam which correlates with LLU test on elementary mathematical concepts.
- The second important cause is insufficiently developed mathematical competences which disturb successful acquisition of new material in mathematics.
- The problem which is much more important refers to students' attitude towards learning process. Many students do not to perform homework in the allotted time (61 % of FE and 41 % of FIT students), although they have an opportunity to attend consultations and get help of the teaching staff in homework. Only 2 % of FE and 4 % of FIT students attend consultations regularly.
- Another important cause is a lack of effort, as it is evidenced by the fact that more than 50 % of students of both faculties spend less than 2 hours on preparation process for successful completion of 1<sup>st</sup> task test.
- Thus it can be concluded that the most part of the first year students are **not ready for the studies at the university**. A significant number of incoming students has the lack of background knowledge, the lack of mathematical competencies including scientific reasoning skills, the lack of learning and study skills, responsibility of the learning process, organizational skills (including time management and setting priorities).

### Bibliography

1. Cherif A. H., Adams G. E., Movahedzadeh F., Martyn M. A., Dunning J. (2014). Why Do Students Fail? Faculty's Perspective. In Collection of Papers of the Annual Conference *Creating & Supporting Learning Environments*. Chicago: Higher Learning Commission. [online] [10.10.2016]. Available at <http://cop.hlcommission.org/Learning-Environments/cherif.html>
2. Fox H. (2010). *Study Finds Stress Leads Students to Drop out of New Bachelor Programs*. DW-Word.de: Deutsche Welle. [online] [3.11.2016]. Available at <http://www.dw.com/en/study-finds-stress-leads-students-to-drop-out-of-new-bachelor-programs/a-5124027-1>
3. Ibrahim M. (2015). *Why Students Fail Mathematics*. [online] [30.09.2016]. Available at <http://www.vanguardngr.com/2015/04/why-students-fail-mathematics/>
4. Laursen K. B. (2003). *Competence Driven Teaching of Mathematics*. Copenhagen: Published by Institute of Mathematical Sciences, Centre for Science Education, University of Copenhagen, p.13.
5. Lithner J. (2011). University Mathematics Students' Learning Difficulties. *Journal Education Inquiry*, Vol. 2(2), pp. 289 – 303. [online] [13.09.2016]. Available at <http://www.education-inquiry.net/index.php/edui/article/viewFile%20/21981/28724>
6. Mbugua Z. K., Kibet K., Muthaa G.M., Nkonke G. R. (2012). Factors Contributing to Students' Poor Performance in Mathematics at Kenya Certificate of Secondary Education in Kenya: A Case

- of Baringo County, Kenya. *American International Journal of Contemporary Research*, Vol.2(6), pp. 87 – 91. [online] [24.09.2016]. Available at [http://www.aijcrnet.com/journals/Vol\\_2\\_No\\_6\\_June\\_2012/11.pdf](http://www.aijcrnet.com/journals/Vol_2_No_6_June_2012/11.pdf)
7. Niss M. (2002). *Mathematical Competencies and the Learning of Mathematics: The Danish KOM Project*. Final report, published in October 2002. Roskilde, Denmark: Roskilde University. [online] [15.03.2014]. Available at <http://www.math.chalmers.se/Math/Grundutb/CTH/mve375/1112/docs/KOMkompetenser.pdf>
  8. Prakash A.P., Jerlin E.J., Fernandes J.B. (2014). A Study on the Causes for Failures in Mathematics by Engineering Students Using CFRM Model. In *Proceedings of the World Congress on Engineering (WCE)*, Vol I. U.K., London. [online] [3.11.2016]. Available at [http://www.iaeng.org/publication/WCE2014/WCE2014\\_pp29-33.pdf](http://www.iaeng.org/publication/WCE2014/WCE2014_pp29-33.pdf)
  9. Turner R. (2011). Exploring Mathematical Competencies. *Research Developments*, Vol. 24(5), pp. 1 – 6. [online] [30.09.2016]. Available at [http://works.bepress.com/ross\\_turner/2/](http://works.bepress.com/ross_turner/2/)
  10. Zeidmane A. (2012). Development of Mathematics Competences in Higher Education Institutions. In *Proceedings of the International Conference on Interactive Collaborative Learning (ICL)* Vol. 15. Canada: IEEE. DOI: 10.1109/ICL.2012.6402071
  11. Zeidmane A., Sergejeva N. (2013). Indirect Impact of Mathematics in Engineering Education. In *Proceedings of the Scientific International Conference Engineering for Rural Development*. Vol. 12. Jelgava: LLU, pp. 611 – 615.

## Moral Values of Generation Z Students in General Education Schools of Lithuania and Latvia

Birutė Žygaitienė<sup>1</sup> Dr. paed.; Inga Kepalienė<sup>2</sup> Dr. paed.; Regina Baltusite<sup>3</sup> Dr. paed.

Lithuanian University of Educational Sciences, Lithuania<sup>1,2</sup>

Latvia University of Agriculture<sup>3</sup>

[birute.zygaitiene@leu.lt](mailto:birute.zygaitiene@leu.lt)<sup>1</sup>; [inga.kepaliene@leu.lt](mailto:inga.kepaliene@leu.lt)<sup>2</sup>; [rilagora@inbox.lv](mailto:rilagora@inbox.lv)<sup>3</sup>

**Abstract.** In the beginning of the 21<sup>st</sup> century there has been an increased interest in the generation theory created by W. Strauss and N. Howe, which has served as an impetus for new research on contemporary children and learners. Teachers have also understood that usual methods cannot be used teaching today's children and that they have to look for new ones. The answers to the most urgent problems of concern to teachers have been found in the generation theory by the abovementioned authors. The bigger interest in the analysed problem in Lithuania is evidenced by the extent and volume of research. The research on the issue in question has been scarce in Latvia, therefore the authors of the article have come up with the idea to carry out a pilot study in that country. The main goal of the study was to identify the moral values characteristic of generation Z learners in Lithuania and Latvia. The research on moral values in Lithuania was conducted in the period from 2014 to 2015 and the situation was investigated in Latvia in 2016. The sample of the research in Lithuania embraced 374 students and 39 teachers, whereas that in Latvia equalled 114 school learners. The interviews with social pedagogues, a special education teacher and a psychologist were also carried out. The data acquired during the research revealed the moral values, which are considered to be significant and the extent to which school students are able to justify the significance of the indicated values.

**Key words:** general education school, generation Z, manifestations of values, moral values.

### Introduction

Intensive scientific and technological development, the accelerating growth of economic and social welfare do not address the essential problems of human existence and fail to satisfy spiritual needs. Therefore, lately the discussions regarding the spiritual crisis of contemporary society and ways of coping with it educating the new generation Z have become more comprehensive. The young people, who were born after 1995, are ascribed to the cohort of the generation Z. This generation is associated with the emergence of the Internet and is frequently referred to as Digital Generation or Children of Virtual Environment (McCrindle, Wolfinger, 2010; Pečiuliauskienė, Valantinaitė, 2013; Targamadžė, 2014).

The Law on Education of the Republic of Lithuania (Lietuvos Respublikos švietimo įstatymas, 2011) provides for the necessity "to develop a person's values enabling him to become an honest, knowledge-seeking, independent, responsible and patriotically-minded human being". The General Educational Curricular (Pradinio ir pagrindinio..., 2008) outline that "the purpose of moral education is to enable learners to build up foundations of moral culture revealing the common human values, developing learners' ability to make responsible and clever decisions and to act correspondingly, to mature moral consciousness". "Upbringing (moral education) in Lithuania has not received sufficient attention. In classical Lithuanian pedagogy the upbringing is considered to be the main function of education but after the restoration of independence the tendency to follow the pragmatic approach in education was observed, when upbringing is replaced by various teaching and learning technologies, which frequently have nothing to do with fundamental values" (Aramavičiūtė, 2005).

At present strengthening integration of public processes leads to a decrease in the division among separate sciences and life areas and to an increasing number of interdisciplinary interactions and interests. This concerns cultural anthropology, cognitive psychology, cultural science and culture management. On the other hand, the interaction between an individual and his/her environment, employing knowledge and experience accumulated by various sciences such as philosophy, psychology, anthropology, neuro-medicine and others has been addressed in a more comprehensive way. The interest in the mutual dependence of the individual's morality and his/her cultural environment has been gradually growing (Bitinas, 2000; Dewey, 2013; Jackūnas, 2004; Johnson, 2007; Katalynas, 2009). Such interaction is most precisely expressed by the concept of *moral culture*. The essence of moral culture may be characterised as the unity of moral consciousness and a behavioural mode preconditioned by it,

when corresponding behaviour based on internalisation of moral norms characteristic of a certain culture ensures acceptable personal expression in the same cultural environment.

Undoubtedly, changing public value-based attitudes result in changes to personal culture and its understanding. Growing significance of moral relativism ideas in the society promote a diverse attitude towards the role of morality in human life and the place of moral values in the hierarchical structure. Contemporary research studies on morality evidence a shift from a duty morality to an aspirational morality based on utilitarian values and identity. The data of psychological and pedagogical research show that school learners' relations with spiritual culture have also become problematic. This particularly applies to adolescents. Therefore, it is particularly relevant to analyse school learners' moral culture and possibilities for its education (Girdzijauskas, 2012).

The analysed problem. Lithuania and Latvia are living under a volatile period, which is complicated in terms of not only politics but also economy. The changes that have penetrated into various aspects of public life, have also had a strong impact on the moral culture of society. The society has adopted an idea of radical change of everything without any thinking or consideration. The children have fallen victims to such a situation as they have been derived of moral culture milestones.

*The aim of the paper* is to evaluate the peculiarities of moral values of the generation Z learners.

## Methodology

The research was conducted in Lithuanian general education schools in the school year of 2014-2015. On the basis of the conducted scientific literature analysis, two questionnaire forms were drawn up for 6<sup>th</sup>-8<sup>th</sup> formers and their teachers. Seeking to investigate the moral culture from the meaningful-evaluative aspect, the description of moral values was applied, which consisted of ten moral values: respect, sensitivity, altruism, responsibility, devotion, love for another person, tolerance, honesty, justice and self-control. Seeking to compare how school learners are able to envisage the importance of moral values compared to other values, the respondents were also asked to rank other common human values, which are not directly linked to morality but are very close to them: determination, humour, rationality, independence and creativity. The chosen degree of acknowledging significance of values, which revealed the importance of one or another value to a learner, was chosen as a criterion of assessment. During the research the school learners were asked to rank values, i.e. to number them according to the importance ascribed to values.

Seeking to better perceive the importance of moral values to the respondents, the manifestations that express the content of the aforementioned values were presented to the respondents for evaluation. The school students evaluated the significance of manifestations employing a five-point scale (very important, important, don't know, somehow important, unimportant) and creating a picture of a cultured and attractive to him individual. In this way the degree of acknowledgement of most significant values was highlighted. The acknowledgement of value significance has impact on their practical implementation. The viability of moral culture manifests itself in conscious application of values making decisions to behave in accordance with the abovementioned values (Kantas, 1987; Šalkauskis, 1990). It is also important to identify the extent to which the learners understand the importance of moral values to themselves and others, i.e. to what degree they are able to justify them. Therefore, attempts were made not only to identify the moral values that are of significance to school learners but also how deep they are able to justify their significance. The respondents were asked to explain why the highest and lowest values are important to them.

*The interview method, as the most important method of qualitative research data, was applied* conducting the research. The formal (standard) interview was chosen as an additional method for processing the obtained information. During the interview the formulation of questions was foreseen in advance as well as their order, number, encoding and form of recording. The interview questionnaire form consisted of 4 open-ended questions to reveal behaviour evaluation and moral decisions.

The sample of the pilot study in Latvia included 114 school learners from 6<sup>th</sup> to 7<sup>th</sup> forms (6<sup>th</sup> formers: 68 (60 %) respondents; 7<sup>th</sup> formers: 46 (40 %) respondents), who all study in schools of general education and are assigned to Z generation according to their age. To obtain information the Portrait Values Questionnaire (PVQ) offered by S.H. Schwartz (Schwartz, 2002) was employed, since it provides the tendency of choosing common values including moral ones as well. The questionnaire form

included 40 statements, which the respondents were requested to evaluate in the following way (6 – very much like me; 5 – like me; 4 – somewhat like me; 3 – a little like me; 2 – not like me; 1 – not like me at all). This allowed to identify the degree of their adoption of values (conformity, tradition, benevolence, universalism, self-direction, stimulation, hedonism, achievement, power and security).

**Participants.** The total sample of the research included 374 school learners (54 % of girls and 46 % of boys) of Z generation (6<sup>th</sup> to 8<sup>th</sup> formers). The biggest number of respondents were 8<sup>th</sup> formers, the number of 6<sup>th</sup> to 7<sup>th</sup> formers was the same and made up 31 % of the total sample.

The teachers working with the school learners in the research were also surveyed: 39 teachers (68 % of women and 32 % of men). The majority of teachers (64.1 %) had the professional qualification of senior teacher, 20.5 % of the respondents had the qualification category of teacher and 15.4 % of them were teachers-supervisors. The accumulated experience of the respondents in teaching was extensive. The experience of 51.3 % of teachers was 10 years and more; 25.6 % of the respondents worked as teachers from 7 to 10 years; 15.4 % of teachers had experience from 3 to 6 years and only 7.7 % of the respondents were young specialists. The interviews with social pedagogues, a special education teacher and a psychologist were also carried out.

## Results and discussion

**The analysis of common and moral values of 6<sup>th</sup> -8<sup>th</sup> formers in Lithuania.** The evaluative aspect of meaningful – evaluative competent manifests itself in behaviour evaluation as a significant condition of moral decisions. Evaluation is very important making decisions how to behave in one or another situation (Heckhausen, 2003). Moral evaluation is conducted on the basis of moral values. Therefore, seeking to clarify the extent to which evaluations of 6<sup>th</sup> -7<sup>th</sup> formers' behaviour are grounded on moral values, the criterion of the validity was applied in the analysis of evaluations. Moreover, school learners' ability to evaluate own behaviour in various life situations considering their context, also reveal the results of evaluation of contextuality. On the other hand, it is important to remember that an evaluation action is a subjective, sensual and efficient experience, which is evoked by the individual's relations with other people and public events (Girdzijauskas, 2012).

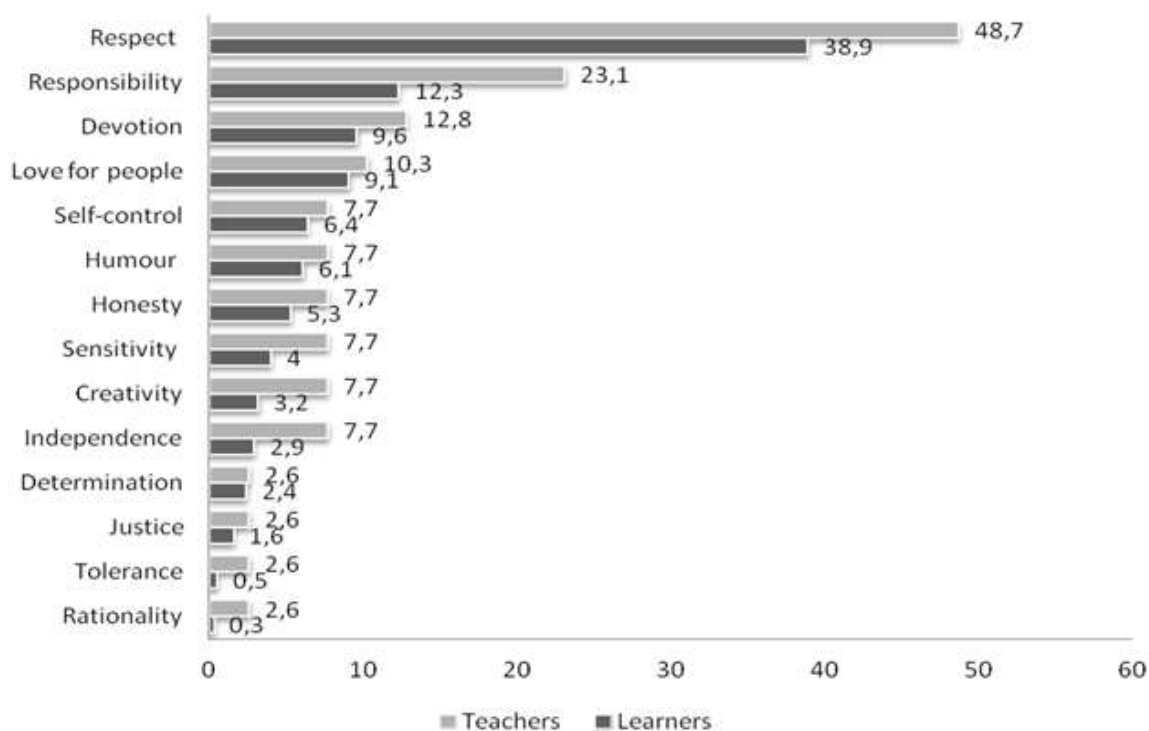


Figure 1. The most significant values chosen by learners and teachers (%).

The research results revealed that as much as 38.8 % of the respondents ranked respect as the most important value. Devotion was most important to 12.3 % of learners, responsibility was seen as most significant by 9.6 % of the respondents. Love for other people was ranked highest by 9.1 % and self-



control – by 6.4 % of the respondents. About 6.1 % of the learners chose humour as the most significant value. Honesty was evaluated highest by 5.3 % of the learners, sensitivity – by 4 %, creativity – by 3.2 %, independence – by 2.9 % of the respondents. The least appreciated values included determination and altruism (2.4 %), justice (1.6 %), tolerance (0.5 %) and only 0.3 % of the children chose rationality as the most significant value (Figure 1).

As much as 48.7 % of the teachers also ranked the value of respect highest. Comparing the results of our research with those obtained by A. Girdzijauskas (2012), the acknowledgement of respect as highly significant moral value, was also confirmed. Responsibility was most significant to 23.1 % of the respondents, honesty – to 12.8 % of the respondents, love for other people – to 10.3 % of the teachers. More than 7 % (7.7 %) of the teachers in the research acknowledged humour, creativity, justice as the most important values to their learners, whereas sensitivity, determination and tolerance received the same evaluation from 2.6 % of the teachers. They did not consider self-control, devotion and rationality as most significant values to their learners.

The manifestations of moral values presented in Figure 2 show the highest evaluation of respect. The majority of the learners assigned highest value to both manifestations of this value: hearing of another person (very important and important - 89.6 %) and acknowledgement of the value of other people (very important and important - 73.8 %). The manifestations of responsibility were considered very important as well: responsible performance of assumed duties – 77.6 % and preparedness to account for own actions – 71.9 %. The results of the research employing both methods coincided regarding very high relevance assigned to respect and responsibility. They may be regarded as extremely important to the respondents. High significance was assigned to the following manifestations: speaking the truth (38.2 %) as a manifestation of honesty; love of people and life (35 %) as a manifestation of love for other people and suppression of anger, spontaneous feelings and desires (34 %). The following manifestations of values were seen as important: sympathy for experiences of surrounding people (37.7 %) as a manifestation of sensitivity; inclination to do good for others and to help them (41.7 %) and readiness to make sacrifice for others (34.2 %) as manifestations of altruism; responsible performance of assumed duties (42 %) and readiness to account for own actions (36.9 %) as manifestations of responsibility; reliability and fulfilment of obligations (36.1 %) as a manifestation of devotion; coordination of own interests with those of others (37.2 %) and respect for different life (31.6 %) as manifestations of tolerance; behaviour in accordance with norms of consciousness (34.5 %) as a manifestation of honesty; just behaviour with everybody (35.8 %) and objective evaluation of others and environment (34.8 %) as manifestations of justice; behaviour in accordance with own principles and beliefs (32.4 %) as a manifestation of self-control.

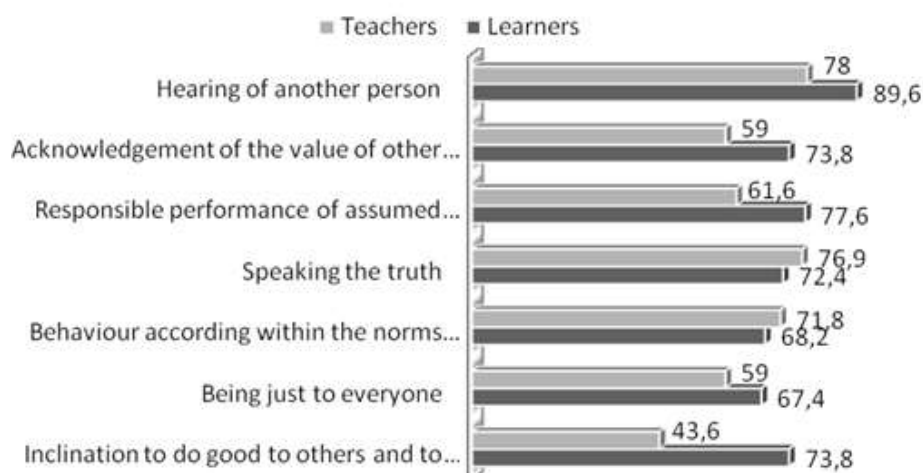


Figure 2. The attitude of school learners towards manifestations of moral values (%)

The data presented in Figure 3 revealed 6<sup>th</sup> -8<sup>th</sup> formers' perception of moral values that, according to the teachers, the learners perceive the following values well: creativity – 69.2 %, sensitivity – 61.5 %, devotion – 59 %, tolerance – 51.3 %, determination – 48.7 %, respect – 48 %, rationality – 46.2 %, independence – 46.2 %, responsibility – 43.6 %, honesty – 41 %, justice – 41 % and self-control – 41 %.



The teachers think that their students' understanding of altruism (51.3 %), love for other people (41 %) and humour (51.3 %) is inadequate (Figure 3).

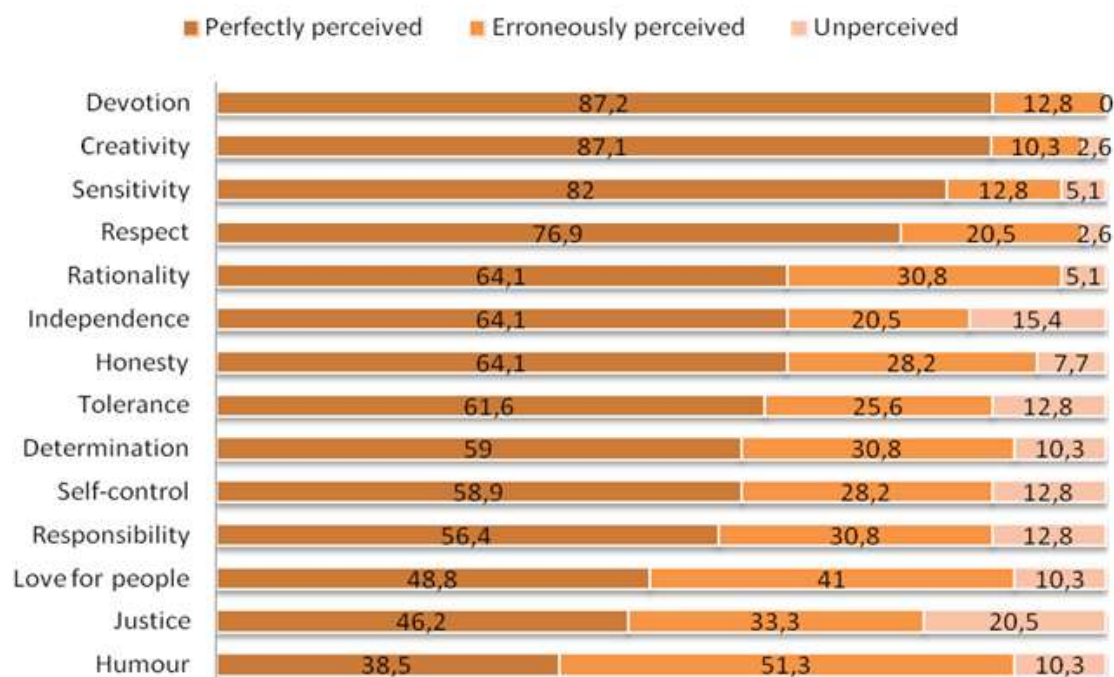


Figure 3. The opinion of teachers about school learners' perception of moral values (%).

The school students were requested to explain why the highest and lowest ranked values were significant to them. If the learners emphasised the extent to which values predetermine own spiritual well-being or that of others and contribute to becoming of a more mature personality, their justification of the significance of the value was regarded as very deep; if the students considered only personal well-being, which facilitate better self-understanding and self-expression, their understanding was ascribed to deep; if focus is laid only on personal well-being, understanding is said to be superficial; the perception was not deep if only significance or insignificance of the value was indicated and the reasons for their importance was not elaborated on. If a student did not provide any explanation of the importance or interpretation was erroneous, the importance was unperceived. The generalised data is presented in Figure 4.

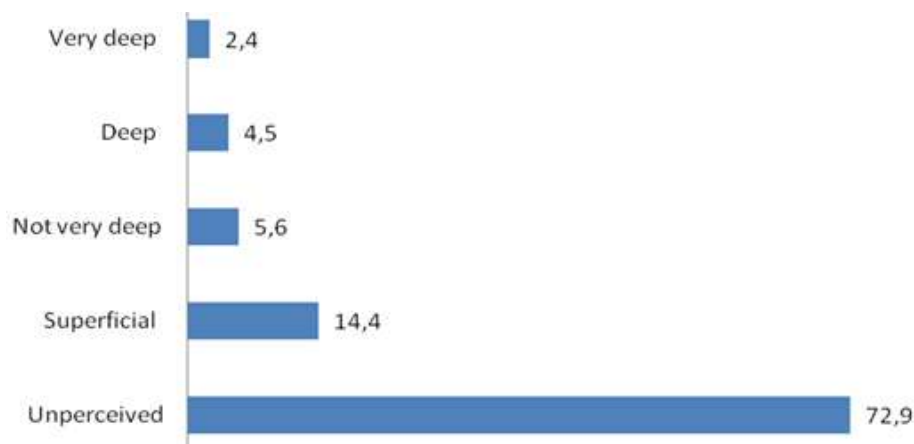


Figure 4. School learners' understanding of significance of moral values (%).

Regrettably, the majority of school learners (73.99 %) did not answer the presented question, and therefore their understanding was evaluated as unperceived. Being unable to identify the significance of the value, it is complicated to evaluate behaviour because significance assigned to values as well as evaluation of behaviour and environment are closely interrelated. Evaluation of behaviour in various situations is based on moral values. The perception of significance of a moral value is very deep or deep among 6.9 % of the learners, 6 % of the school students understand importance of values superficially whereas perception of 14 % students is not deep.

**The analysis of common and moral values of 6<sup>th</sup> -7<sup>th</sup> formers in Latvia.** The outlook of every individual is made up of values. In psychology values are regarded as traits, motifs, attitudes, life goals, causal attributions, beliefs, expectations, intentions, behavioural patterns, concentration of interests and desires and others (Гарванова, Гарванов, 2014). There exist several approaches to understanding of values and their classification (Hofstede, Inglehart, Rokeach). It is necessary to single out values of society and social groups as well as individual ones (Potts, 2015; Schwartz, 2002; Карандашев, 2004). Currently one of the most acknowledged theories in the studies of values is the one introduced by the Israeli psychologist S.H. Schwartz, who expanded and modified the method of M. Rokeach. According to S.H. Schwartz (2012), values are beliefs, infused with feelings; desirable goals that motivate action; transcendentalism is characteristic of them; standards that influence life choices and evaluation of what is happening in life. On the basis of the previous scientific studies and the research conducted by himself, he singled out ten basic motivational types (Potts, 2015; Schwartz, 2012): **conformity** (obedient, self-discipline, politeness, honouring parents and elders); **tradition** (respect for tradition, humble, devout, accepting my portion in life); **benevolence** (helpful, honest, forgiving, responsible, true friendship, mature love); **universalism** (understanding, appreciation, tolerance, protection for the welfare of *all* people and for nature (broadminded, social justice, equality, world at peace, world of beauty, unity with nature, wisdom, protecting the environment); **self-direction** (creativity, freedom, choosing own goals, curious, independent); **stimulation** (a varied life, an exciting life, daring); **hedonism** (pleasure, enjoying life, self-indulgent); **achievement** (ambitious, successful, capable, influential); **power** (social status and prestige, control or dominance over people and resources (authority, wealth, social power, social recognition, preserving my public image); **security** (safety, harmony, stability of society, of relationships, of self (social order, family security, national security, clean, reciprocation of favours, healthy, sense of belonging).

The author presented the theoretical model, which presents relationship of ten basic values and certain motivational goals in a circular arrangement (Figure 5). The values are organised as two bipolar measuring axes: **openness to change** (self-direction, stimulation) – **conservation** (conformity, tradition, security); **self-enhancement** (achievement, power) – **self-transcendence** (universalism, benevolence); **hedonism** includes **openness to change** and **self-enhancement**.

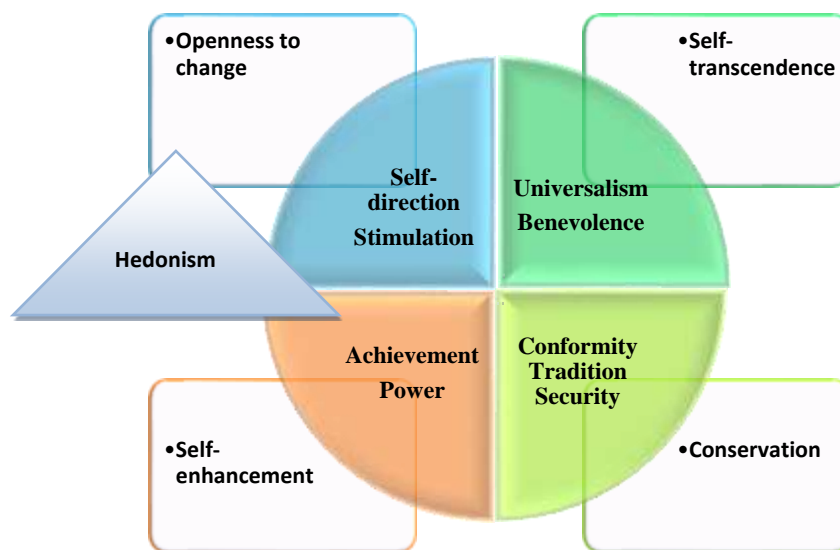


Figure 5. Ten motivational types of values (Baltušīte, according Schwartz, 2002).

From the perspective of S.H. Schwartz, the values of an individual exist at two levels: *the level of normative ideals* and *the level of individual priorities*. The first level reflects the individual understanding of how one has to behave, which determines the principles of his/her conduct in life. The second level depends on external environment and correlates with specific actions of an individual (Карандашев, 2004).

The Portrait Values Questionnaire (PVQ 40) was applied in the research (Schwartz, 2002). V. Karandashev (Карандашев, 2004) states that the methodology of Sh. Schwartz can be used only for individuals of 14 years and older because at this age the values start to build up. However, the procedure

itself may look complicated. The personality profile can be used at the age of 13, when adolescents are asked to evaluate themselves on the basis of specific statements.

In the beginning of the 21<sup>st</sup> century there has been an increased interest in the generation theory created by W. Strauss and N. Howe, which has served as an impetus for new research on contemporary children and learners. Teachers also understand that usual methods cannot be used teaching today's children and that they have to look for new ones. The answers to the most urgent problems of concern to teachers have been found in the generation theory by the abovementioned authors. The subject of the research included 6<sup>th</sup> to 7<sup>th</sup> formers ascribed to Z generation in terms of their age. Presenting the results of their research, the authors claim that Z generation still contains secrets in terms of values as the latter are most actively formed from 11-12 years to 14 years (McCrinkle, Wolfinger, 2010). The emphasis is also laid on what the generation will be like in the moral context. Processing the results of the responses to statements, the basic values and their average values were identified. The results obtained during the research are presented in Table 1.

Table 1

**The values of 6<sup>th</sup> -7<sup>th</sup> forms (average meaning and ranges)**

	Form 6	Range	Form 7	Range
Conformity	3.7	7.5	3.7	9
Tradition	3.3	9	3.9	8
Benevolence	4.6	3.5	4.2	6.5
Universalism	4.2	5.5	4.6	1.5
Self-direction	4.6	3.5	4.5	4
Stimulation	4.7	2	4.6	1.5
Hedonism	5.0	1	4.5	4
Achievement	4.2	5.5	4.5	4
Power	2.8	10	3.4	10
Security	3.7	7.5	4.2	6.5

To identify if the differences in realisation of values among 6<sup>th</sup> -7<sup>th</sup> formers exist, the Mann-Whitney U criterion ( $U = 49$ ) ( $U_{cr}$ :  $p \leq 0.01(19)$ ,  $p \leq 0.05(27)$ ) was calculated, which revealed the absence of significant differences in the choice of values among 6<sup>th</sup> -7<sup>th</sup> formers (Mann-Whitney U Test Calculator, 2016).

However, the qualitative analysis of values allowed to notice differences in the rankings of separate values. The 6<sup>th</sup> formers ranked the value of hedonism (5.0) highest, while stimulation (4.7) was given the second ranking. The two most significant values among 7<sup>th</sup> formers were universalism (4.6) and stimulation (4.6). The difference was also identified in the range of averages in 6<sup>th</sup> forms ( $5.0 - 2.8 = 2.2$ ) and in the 7<sup>th</sup> forms ( $4.6 - 3.4 = 1.2$ ). This is related to development of self-awareness and self-knowledge, which move to the next new level starting with the age of 14 (Žandrs, 2009). The lowest ranks in both groups were identified in conformity (3.7), tradition (6<sup>th</sup> form – 3.3; 7<sup>th</sup> form – 3.9) and power (6<sup>th</sup> form – 2.8; 7<sup>th</sup> form – 3.4). The results of the research revealed that the responses “not like me” and “not like me at all” were provided by 28 % of the 7<sup>th</sup> formers and by 11 % of the learners in the 6<sup>th</sup> forms.

On the basis of the prevailing responses to the statements of the questionnaire (6 – very much like me; 5 – like me; 4 – somewhat like me), the portrait of Z generation was devised and the trends in the dominating values were identified. The value is said to be present if its indicator exceeds 50 % (Table 2).

Table 2

**The portrait of Z generation (%) (Schwartz, 2002; Карандашев, 2004)**

<b>Statements</b>	<b>Form 6</b>	<b>Form 7</b>
<b>BENEVOLENCE</b>		
It's very important to him to help the people around him. He wants to care for other people.	82	67
It is important to him to be loyal to his friends. He wants to devote himself to people close to him.	89	72
It is important to him to respond to the needs of others. He tries to support those he knows.	85.7	83
Forgiving people who might have wronged him is important to him. He tries to see what is good in them and not to hold a grudge.	82	78
<b>UNIVERSALISM</b>		
He thinks it is important that every person in the world be treated equally. He wants justice for everybody, even for people he doesn't know.	71	83
It is important to him to listen to people who are different from him. Even when he disagrees with them, he still wants to understand them.	68	89
He strongly believes that people should care for nature. Looking after the environment is important to him.	75	94
He believes all the worlds' people should live in harmony. Promoting peace among all groups in the world is important to him.	57	83
He wants everyone to be treated justly, even people he doesn't know. It is important to him to protect the weak in society.	82	83
It is important to him to adapt to nature and to fit into it. He believes that people should not change nature.	75	78
<b>SELF-DIRECTION</b>		
Thinking up new ideas and being creative is important to him. He likes to do things in his own original way.	78.5	94
It is important to him to make his own decisions about what he does. He likes to be free to plan and to choose his activities for himself.	85.7	67
He thinks it's important to be interested in things. He likes to be curious and to try to understand all sorts of things.	82	83
It is important to him to be independent. He likes to rely on himself.	78.5	78
<b>STIMULATION</b>		
He thinks it is important to do lots of different things in life. He always looks for new things to try.	75	83
He likes to take risks. He is always looking for adventures.	82	67
He likes surprises. It is important to him to have an exciting life.	89	78
<b>HEDONISM</b>		
He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.	89	83
Enjoying life's pleasures is important to him. He likes to 'spoil' himself.	89	72
He really wants to enjoy life. Having a good time is very important to him.	100	83
<b>ACHIEVEMENT</b>		
It's very important to him to show his abilities. He wants people to admire what he does.	64	78
Being very successful is important to him. He likes to impress other people	57	60
He thinks it is important to be ambitious. He wants to show how capable he is.	78.5	83
Getting ahead in life is important to him. He strives to do better than others.	82	78
<b>POWER</b>		
It is important to him to be rich. He wants to have a lot of money and expensive things.	24	44
It is important to him to be in charge and tell others what to do. He wants people to do what he says.	18	44
He always wants to be the one who makes the decisions. He likes to be the leader.	57	61

Statements	Form 6	Form 7
<b>SECURITY</b>		
It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.	39	67
It is very important to him that his country be safe from threats from within and without. He is concerned that social order be protected.	61	61
It is important to him that things be organized and clean. He doesn't want things to be a mess.	39	44
He tries hard to avoid getting sick. Staying healthy is very important to him.	75	89
Having a stable government is important to him. He is concerned that the social order be protected.	43	78
<b>CONFORMITY</b>		
He believes that people should do what they're told. He thinks people should follow rules at all times, even when no-one is watching.	32	50
It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong.	50	67
It is important to him to be obedient. He believes he should always show respect to his parents and to older people.	92.8	67
It is important to him to be polite to other people all the time. He tries never to disturb or irritate others.	71	72

On the basis of the qualitative analysis of the responses to the statement in the questionnaire form it can be concluded that respect of other people, equal treatment of other people, belief in equal opportunities for all and hearing of different opinions from other people are important to 6<sup>th</sup> -7<sup>th</sup> formers. They also assign high significance to care for nature, loyalty to friends, harmony in the world, sensitivity in relation to other people and protection of the weak. The young people also acknowledge that it is necessary to envisage the good in other people and learn to forgive.

## Conclusions

The research on the level of moral values acknowledgement revealed that respect is seen as the most significant value for the learners of the Z generation in Lithuania and the responses of the teachers also confirmed it. The choice of the school students is confirmed by evaluation of manifestations of moral values. The school students chose manifestations of respect as the most significant ones: hearing of another person and acknowledgement of the value of other people. This discloses the importance of moral values, which are of significance to school learners. The research on significance of values disclosed that, unfortunately, the bigger number of school students do not fully perceive the importance of values. The learners are not able to or imprecisely indicate the importance of values. Being unable to identify the significance of value it is complicated to evaluate behaviour because significance assigned to values as well as evaluation of behaviour and environment are closely interrelated. Evaluation of behaviour in various situations is based on moral values.

Adoption of certain values in adolescence (age of the respondents in terms of developmental psychology) is related to accumulated experience, development of self-awareness and moral consciousness. The values ranked highest by the learners of Z generation in Latvia are universalism, hedonism, stimulation, self-direction, benevolence, achievement. Both conducted research studies reveal a similar trend in choosing moral orientations of 13-14 year-old learners (6<sup>th</sup> -7<sup>th</sup> formers) assigned to Z generation.

## Bibliography

1. Aramavičiūtė V. (2005). *Auklėjimas ir dvasinė asmenybės branda (Upbringing and Spiritual Maturity of Personality)*. Vilnius: Gimtasis žodis. (in Lithuanian)
2. Bitinas B. (2000). *Ugdymo filosofija (Philosophy of Education)*. Vilnius: Enciklopedija. (in Lithuanian)
3. Dewey J. (2013). *Demokratija ir ugdymas: įvadas į ugdymo filosofiją (Democracy and Education: Introduction to Philosophy of Education)*. Klaipėda: Baltic Printing House. (in Lithuanian)

4. Girdzijauskas A. (2012). *Aukštesniųjų klasių mokinių dorovinės kultūros ugdymas muzikine veikla (Development of Senior School Learners' Moral Culture Through Musical Activities)*. Klaipėda: Klaipėdos universiteto leidykla. (in Lithuanian)
5. Jackūnas Ž. (2004). *Menas - prasmė - pažinimas (Art – Meaning – Knowledge)*. Vilnius: Kultūros, filosofijos ir meno institutas. (in Lithuanian)
6. Johnson M. (2007). *The Meaning of the Body*. Aesthetics of Human Understanding, USA: The University of Chicago Press.
7. Kantas I. (1987). *Praktinio proto kritika (The Critique of Practical Reason)*. Vilnius: Mintis. (in Lithuanian)
8. Katalynas A. (2009). *Estetika - XX amžius: problemos, teorinės kryptys, konfrontacijos: antologija (Aesthetics - 20th Century: Problems, Theoretical Approaches, Confrontations: Anthology)*. Vilnius: Mintis. (in Lithuanian)
9. *Lietuvos Respublikos švietimo įstatymas (The Law on Education of the Republic of Lithuania)*. (2011). No. XI-1281, 2011-03-17, Vilnius: Lithuanian Seimas. [online] [11.10.2016]. Available at [https://www.e-tar.lt/portal/lt/legalAct/TAR.9A3AD08EA5D0/TAIS\\_458774](https://www.e-tar.lt/portal/lt/legalAct/TAR.9A3AD08EA5D0/TAIS_458774) (in Lithuanian)
10. *Mann-Whitney U Test Calculator* (2016). [online] [06.11.2016]. Available at <http://www.socscistatistics.com/tests/mannwhitney/>
11. McCrindle M., Wolfinger E. (2010). *The ABC of XYZ: Understanding the Global Generation*. Australia: University of New South Wales Press Ltd.
12. Pečiuliauskienė P., Valantinaitė I., Malonaitienė V. (2013). *Z karta: kūrybingumas ir integracija (Z Generation: Creativity and Integration)*. Vilnius: Edukologija. (in Lithuanian)
13. Potts D. (2015). *The Schwartz Theory of Basic Values and Some Implications for Political Philosophy*. [online] [06.11.2016]. Available at <https://irfankhawajaphilosopher.com/2015/08/12/the-schwartz-theory-of-basic-values-and-some-implications-for-political-philosophy/>
14. *Pradinio ir pagrindinio ugdymo bendrosios programos (The General Educational Curricular)*. (2008). No. ISAK-2433, 26.08.2008. Vilnius: Lithuanian Ministry of Education and Science. [online] [10.10.2016]. Available at [http://portalas.emokykla.lt/bup/Puslapiai/pradinio\\_ir\\_pagrindinio\\_ugdymo\\_bendrosios\\_programos\\_isakymas\\_2.aspx](http://portalas.emokykla.lt/bup/Puslapiai/pradinio_ir_pagrindinio_ugdymo_bendrosios_programos_isakymas_2.aspx) (in Lithuanian)
15. Schwartz S. H. (2002). *A Proposal for Measuring Value Orientations across Nations*. Chapter 7, p. 259 – 319.
16. Schwartz S. H. (2012). An Overview of the Schwartz Theory of Basic Values. Online Readings. *Psychology and Culture*, Vol. 2 (1). [online] [06.11.2016]. Available at <http://dx.doi.org/10.9707/2307-0919.1116>
17. Šalkauskis S. (1990). *Raštai (Works)*. Vol. I. Vilnius: Mintis. (in Lithuanian)
18. Targamadžė V. (2014). Z karta: charakteristika ir ugdymo metodologinės linkmės įžvalga (Z Generation: Characteristic and Insight of Educational Methodological Direction). *Tiltai*, Vol. 4, pp. 95 – 104. [online] [06.11.2016]. Available at <http://journals.ku.lt/index.php/tiltai/article/viewFile/952/pdf> (in Lithuanian)
19. Žandrs A. (2009). *Cilvēku kabarē (Human Cabaret)*. [online] [06.11.2016]. Available at <http://konsultacijas.nlp.lv/raksti-publikacijas/andrejs-zandrs/cilveku-kabare-andrejs-zandrs> (in Latvian)
20. Гарванова М., Гарванов И. (2014). Исследование ценностей в современной психологии (Study of Values in Modern Psychology). В материалах международной научной конференции *Современная психология*. Том 3. Казань: Бук, с. 5-20. (in Russian)
21. Карандашев В. (2004). *Методика Шварца для изучения ценностей личности (Schwarz Methods for the Study of the Individual Values)*. Концепция и методическое руководство. СПб.: Речь. (in Russian)



## Computer-Aided Error Analysis for Researching Baltic Interlanguage

Inga Znotiņa Mg. philol.

Rīga Stradiņš University, Liepāja University, Ventspils University College, Latvia

[inga.s.znotina@gmail.com](mailto:inga.s.znotina@gmail.com)

**Abstract:** In teaching and learning languages, error analysis as a methodology has been criticized by many scholars. However, errors have also been noted as an important part of interlanguage which should not be ignored if the aim is to improve learners' language skills. A part of the issues can be solved by using an error-annotated learner corpus for computer-aided error analysis, and one such corpus is being built for Baltic languages. It contains texts written by beginner learners of the second Baltic language (Latvian for Lithuanians and Lithuanian for Latvians), therefore, the variety of language represented in it could be called the Baltic interlanguage. The texts are annotated for errors using an error taxonomy created for Baltic languages. It is an attempt to address one of the main problems in error analysis – inconsistency in error taxonomies. The article shows how the corpus can be used in order to achieve a deeper understanding of factors that affect learning the second Baltic language for adults. Its aim is to describe main methodological steps by exploring the corpus as well as to acknowledge some of its limitations.

**Keywords:** university education, Baltic languages, errors, learner corpus.

### Introduction

It is a truism that learners of a new language unavoidably make errors. There is a widespread methodology for researching them, called *error analysis* (Ellis, Barkhuizen, 2005). It has been criticized for being too unclear and unreliable to be considered a scientific method (James, 2013), but various scholars still point out that errors are an important part of interlanguage (Granger, 2003a; Ramonienė, Brazauskienė, 2012) and that analysing them could give a great insight into language learning processes (Ellis, 1994; Vanhaegendoren, 2002).

Some of the problem areas for error analysis are unclear division of error categories as well as the data not being homogeneous enough to draw any conclusions, and those issues can be solved by creating and using learner corpora (Dagneaux, Denness, 1998). A learner corpus is “an electronic collection of authentic texts produced by foreign or second language learners” (Granger, 2003b, 538). Learner corpora are a relatively new invention, originating in the late 1980s (Granger, 2002). They have evolved from error collections which were comparatively small – the whole volume of one such collection rarely exceeded 2000 words and usually had no more than ten informants (Мальцева, 2011). A good part of learner corpora made nowadays consist of 50 000 – 150 000 words (Мальцева, 2011), and a learner corpus can be considered big if it has approximately 250 000 words or more, such as the learner corpus of English *NOSE* which contains over 300 000 words (Díaz-Negrillo, 2012).

The greater volume is not the only advantage learner corpora have over error collections. Being digital, they also allow researching various topics – such as lexis, grammar, and, of course, errors – using specialized software which can be useful not only for scholars, but also for teachers of the respective language (Камшилова, 2009).

Just like any other kind of corpora, learner corpora are designed so that texts are collected according to specific criteria (Granger, 2002), therefore, the homogeneity of the data is more easily achieved for the researcher. As for the error classification problems, a solution can be found by error-annotating the learner corpus, therefore making the error types more clear and consistent in order to fit one system (Granger, 2003a). A new publicly accessible error-tagged learner corpus has been made for Latvian and Lithuanian – it includes texts in Latvian that are written by learners of Lithuanian background, and texts in Lithuanian that are written by learners of Latvian background. This makes new kinds of analysis available for investigating learning of Baltic languages.

Usage of a learner corpus is the difference between traditional error analysis and computer-aided error analysis. It has been used by a number of researchers of other languages, especially English (Granger, Tyson, 1996; Gilquin, 2007). The aim of this paper is to explain how computer-aided error analysis can be done in order to investigate the errors made by learners of the second Baltic language. In Baltic studies, the term *second Baltic language* is used when talking about a person of Baltic (Latvian or

Lithuanian) background who is learning another Baltic language (Lithuanian for Latvians, Latvian – for Lithuanians; Butkus, 2008).

## Material

The material studied used in this study is *Esam* – a learner corpus of the second Baltic language (more information and access to the corpus available online: [www.esamkorpuss.lv](http://www.esamkorpuss.lv)). New material keeps being added to the corpus, and the annotation work is still ongoing, so the results of certain searches may differ at a later phase. Since the material added so far is not yet fully annotated during the time of writing the article, this paper's objective is not to reveal reliable results about the target language output of learners but rather to show how it can be retrieved and studied.

In order to understand what kind of conclusions can be drawn from the corpus's data, it is important to describe the texts included in it as well as the profile of the authors. As mentioned before, the corpus *Esam* includes texts written in Latvian by Latvian learners of Lithuanian background, and texts written in Lithuanian by Lithuanian learners of Latvian background. All of the texts have been a part of their author's university studies where they have been learning the second Baltic language as one of the study subjects. Currently, there are texts written in 2007–2014 by students of four universities: University of Latvia and Liepaja University in Latvia, and Vilnius University and Vytautas Magnus University in Lithuania. Most of the authors were philology students at the time when the texts were written. Each author signed a permission before their texts were included into the corpus.

The topic of each text was given by the teacher, but learners could also write on different topics if they had previously agreed with their respective teacher. Some more common topics are *Me, my family and my friends*, *My home*, *My holidays*, and *My studies*. The texts are sometimes graded, but they are written just as a part of study process – the teachers are not given any limitations on what the texts should be about, how long they should be. Such decisions are left to the teachers themselves and not influenced by the prospect of making a corpus. The text collection process did not influence the pedagogical process in any way, and the texts were given to the creator of the corpus only after the end of the semester when they were written.

The length of one text varies from 40 to 500 words – some teachers give requirements on how long the text should be. The title of each text is not counted because it was often given by the teacher, but titles are shown with each text in order to make it more easily understood as well as searchable for users of the corpus. The current size of the corpus is 157 texts and approximately 28 000 tokens, but it is going to increase by the time this article is published, as more texts are already being prepared for adding.

All authors are beginners – the texts included in the corpus were written during the first or second semester of learning the language in question. The first semester is usually intended to give the learner the skills of A1 level according to the Common European Framework of Reference for Languages, while the second semester is supposed to bring it up to A2 level. The actual knowledge level of the students may vary. The language of instruction matches the students' background language – in Latvia, Lithuanian is taught using Latvian as the language of instruction, while in Lithuania, Latvian is taught using Lithuanian as the language of instruction.

The structure of the texts is rather free. Although a teacher might sometimes have given some more specific requirements on what the text should contain, most of the time the only prompt is the title of the text. The students are also allowed to use any materials – textbooks and dictionaries – when writing the text, and there is no time limit, as this is usually given as a task to be done at home. If a teacher suspects a student of having written the text in another language and used any automatic translation tools or any professional or non-professional human translation services to have it translated, such a text is rejected and not included in the corpus.

## Methodology

The current study aims to investigate some features of the Baltic interlanguage – the interlanguage that forms when a speaker of one Baltic language learns the other Baltic language. It especially emphasizes the first steps of computer-aided error analysis – namely, the data collection and annotation criteria – as well as the information retrieval process, to show how the corpus helps in error analysis. Error analysis and computer-aided error analysis as a method has already been described (Ellis, Barkhuizen, 2005;



Dagneaux, Denness, 1998; James, 2013), and error analysis has already been used to describe the Latvian (Žīgure, 1999, Laizāne, 2014, Zujevaite, Žilinskaitė, 2012) and Lithuanian (Dabašinskienė, Čubajevaite, 2009) interlanguage. Therefore, the error analysis methodology is not described as a whole, but the added value of the learner corpus and the things that are specific to the corpus *Esam* are discussed in more detail.

## Results and discussion

The corpus *Esam* runs on TEITOK, a program created by M. Janssen especially for highly specialized annotated corpora (Janssen, 2016). The XML files of the corpus can be downloaded and used with any software that is compatible with the TEI standard. However, the corpus is intended to mainly be used via an online interface which does not require installation of any specialized software. The website's URL is [www.esamkorpuss.lv](http://www.esamkorpuss.lv). The user of the corpus does not have to register or provide any data in order to be able to access it. The corpus is annotated in four levels:

- syntactical level – sentences are marked and annotated for sentence types;
- morphological level – the words used in the texts are annotated for parts of speech;
- lexical level – the corpus is lemmatized;
- error annotation – the texts are corrected, and errors are annotated for error types.

The error classification used in this corpus is shown in Table 1. It shows the types of errors distinguished as well as the attributes given to those specific error types. The attributes are included into the annotation tags, and that makes it possible to retrieve errors marked as a specific type.

Table 6

Error classification in learner corpus *Esam*

Error type	Attribute	Error subtype	Attribute
Form	F	Agglutination	FK
		Upper / lower case	FL
		Diacritics	FD
		Other spelling errors (including typos)	FP
Morfoloģija un vārddarināšana	M	Derivation	MA
		Compounding	MS
		Inflection	ML
		Gender	MD
		Number	MN
		Definite / indefinite ending	MG
		Degree of comparison	MQ
		Person	MP
		Tense	MT
		Mood	MI
		Voice	MK
		Reflexivity	MR
		Participle confusion	MV
		Perfective	MB
Error type	Attribute	Error subtype	Attribute
		Iterativity	MX
Sintakse	S	Word order	SV
		Word missing	SI
		Word redundant	SL
		Cohesion	SS
Leksika	L	Meaning	LN
		Compatibility	LV
		Stable phrase	LS
Interpunkcija	I	Punctuation confusion	IN
		Punctuation redundant	IL
		Punctuation missing	IT

Descriptions and examples of the error types given in table one are not given here due to confinements of space; they will be discussed in another article. The corpus offers two kinds of search: simple and advanced. Although it is possible to search for annotations in the simple search form, it is easier to do using the options offered in advanced search view (Figure 1). TEITOK uses a search system that allows using various wildcards (Evert, 2009), but the advanced search, especially the *Word search* view, can offer a more user-friendly interface for some of the features.

Figure 1. The view of advanced search.

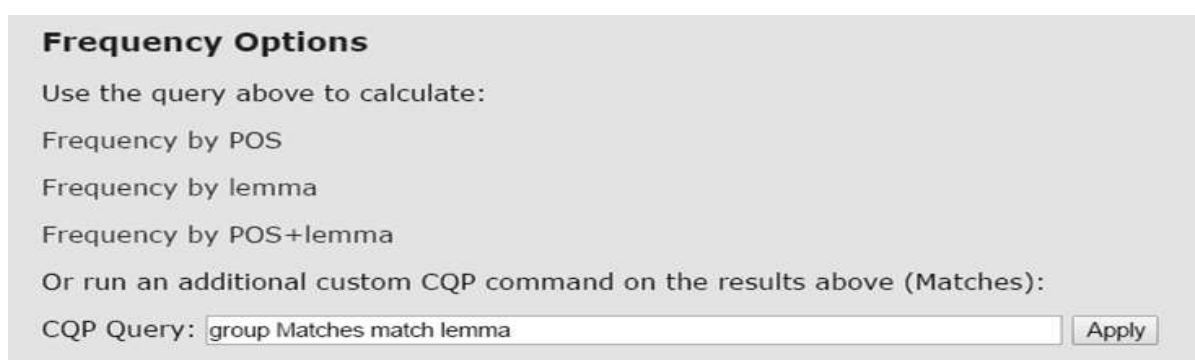
The simplest way to look for certain errors is to write the specific code – attribute from the Table 1 into the *error tag* field. In addition, it is possible to choose other options, such as the language of the texts to be searched, the semester in which the searched texts should have been written, or the type of the sentences in which the search should be done. Also, there is an option to add more specific criteria to the token itself: one could search for, e. g., inflection errors in pronouns by writing the pronouns' attribute *p* into the *POS tag* field while inserting the *ML* attribute for inflection errors into the *error tag* field.

Figure 2. The view of search results.

If there is a need to look for a whole error type rather than subtype, that can be done as well. In order to do that, one has to change the search method of the *error tag* field from *matches* to *starts with*, and insert only the attribute of the whole error type – e. g. for punctuation errors, that would be I. Figure 2 shows some of the results for such a query.

As it can be seen, the program has created the query syntax itself, and the results are given centered around the place that is marked as erroneous. One can easily switch from the original (*transcription*) to the *corrected form* in order to see how the error was corrected. If desired, one can also view the error tags to see how exactly each of the errors has been labelled. This makes it possible to review and work with the material even if the user of the corpus does not fully agree with the corrections done by the annotators.

There is a *context* option on the left side of each result. That opens a whole text view which enables the user of the corpus to analyse the results more thoroughly if the current view does not give enough information. The corpus also offers some options of sorting the results to get the frequencies of certain groups of results (Figure 3).



**Frequency Options**

Use the query above to calculate:

Frequency by POS

Frequency by lemma

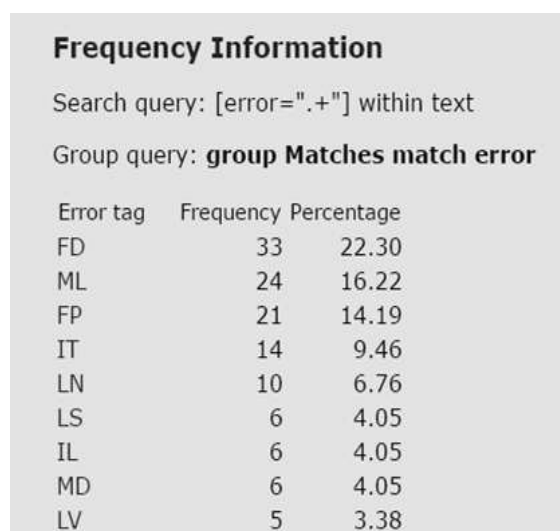
Frequency by POS+lemma

Or run an additional custom CQP command on the results above (Matches):

CQP Query:

Figure 3. Search results: frequency options.

This kind of sorting does not show each separate sort result but gives some quantitative data on the types of results based on the specific query. Figure 4 shows an example where the initial search is for all errors (search query: *[error="."+"] within text*) and the following sort shows how many examples belong to each kind of errors (sort query: *group Matches match error*).



**Frequency Information**

Search query: *[error="."+"] within text*

Group query: **group Matches match error**

Error tag	Frequency	Percentage
FD	33	22.30
ML	24	16.22
FP	21	14.19
IT	14	9.46
LN	10	6.76
LS	6	4.05
IL	6	4.05
MD	6	4.05
LV	5	3.38

Figure 4. Search results: frequency information (top part only).

One thing that the corpus does not offer, is statistical calculations. It gives the number of results and percentage for each specific query, but it will not calculate statistical significance or any other statistical measures. If a researcher wishes to work more with quantitative methods, the calculations have to be done separately either with the help of some other software, or by the researcher him/herself.

Once the results are shown, the rest is left to the researcher – any other qualitative or quantitative descriptions are beyond the automatic tool's capabilities. The conclusions should be drawn carefully, as the corpus does not have enough data to describe the whole Baltic interlanguage. However, it includes a relatively large portion of it, especially at the beginner's level university students, since the corpus has been created in collaboration with a good part of the universities where the second Baltic language is being taught.

The most urgent following research would probably be an overview of the more common errors which would be helpful for the creators of new learning and teaching materials and textbooks. It would also provide information on the necessary updates in dictionaries, since some cases of words used in the wrong meaning seem to originate from not having enough explanation in dictionaries used by the students.

The corpus is also continually being updated with new material. In the future, it is possible to create a comparable corpus of texts written by students from other backgrounds which could help researchers understand which errors are more (or less) likely to be made by students of specific background and which seem to be more universal.

## Conclusions

Scholars have been discussing errors that appear in the interlanguage of learners of Latvian and Lithuanian, but the research has been somewhat inconsistent. Challenges posed by error taxonomy and (non-)homogeneity of the data have undermined advances in this field so far.

The learner corpus *Esam* offers new insights into learning Baltic languages in two dimensions: first, it makes actual data available to anyone willing to research the topic even if those people are not involved in the teaching process themselves. Second, it gives more ground to error analysis for Latvian and Lithuanian which can not only help understand the learning processes, but also shed some more light on the similarities and differences between the structures of the languages themselves. Thus, error analysis turns into computer-aided error analysis.

The search and sort examples given in this article do not reflect the Baltic interlanguage because not much of the corpus has been annotated when this article is written. By the time it is published, the same queries will give much more extensive and reliable results.

## Bibliography

1. Butkus A. (2008). *Baltiškios impresijos (Baltic Impressions)*. Kaunas: Aesti. (in Lithuanian)
2. Dabašinskienė I., Čubajevaitė L. (2009). *Acquisition of Case in Lithuanian as L2: Error Analysis*. Eesti Rakenduslingvistika Ühingu aastaraamat 5. Tallinn: Eesti Keele Sihtasutus, pp. 47 – 66.
3. Dagneaux E., Denness S., Granger S. (1998). Computer-Aided Error Analysis. *System*, Vol. 26 (2), pp. 163 – 174.
4. Díaz-Negrillo A. (2012). Learner Corpora: the Case of the NOSE Corpus. *Journal of Systemics, Cybernetics & Informatics*, Vol. 10 (1), 2012, pp. 42 – 47. [online] [06.11.2016.]. Available at <http://www.oalib.com/paper/2891896#.Vp0RP1JN-mJ>
5. Ellis R., Barkhuizen G. (2005). *Analysing Learner Language*. Oxford: Oxford University Press.
6. Ellis R. (1994). *The Study of Second Language Acquisition*. Oxford: Oxford University Press.
7. Evert S. (2009). *The CQP Query Language Tutorial*. [online] [25.09.2016.]. Available at <http://cwb.sourceforge.net/temp/CQPTutorial.pdf>
8. Gilquin G. (2007). To Err is not All: What Corpus and Elicitation can Reveal about the Use of Collocations by Learners. *Zeitschrift für Anglistik und Amerikanistik*, Vol. 55 (3), pp. 273 – 291.
9. Granger S. (2002). A Bird's-Eye View of Learner Corpus Research. In: S. Granger, J. Hung, S. Petch-Tyson (Eds.) *Computer Learner Corpora, Second Language Acquisition and Foreign Language Teaching*. Amsterdam: John Benjamins, pp. 3 – 33.
10. Granger S. (2003a). Error-Tagged Learner Corpora and CALL: A Promising Synergy. *CALICO Journal*, Vol. 20 (3), pp. 465 – 480.
11. Granger S. (2003b). International Corpus of Learner English: a New Resource for Foreign Language Learning and Teaching and Second Language Acquisition Research. *TESOL Quarterly*, Vol. 37 (3), pp. 538 – 546.

12. Granger S., Tyson S. (1996). Connector Usage in the English Essay Writing of Native and Non-Native EFL Speakers of English. *World Englishes*, Vol. 15 (1), pp. 17 – 27.
13. James C. (2013). *Errors in Language Learning and Use: Exploring Error Analysis*. London, New York: Routledge.
14. Janssen M. (2016). TEITOK: Text-Faithful Annotated Corpora. Proceedings of the Tenth International Conference on *Language Resources and Evaluation*. Paris: ELRA. [online] [04.09.2016.]. Available at [http://www.lrec-conf.org/proceedings/lrec2016/pdf/651\\_Paper.pdf](http://www.lrec-conf.org/proceedings/lrec2016/pdf/651_Paper.pdf)
15. Laizāne I. (2014). Datīva un datīva/instrumentāla nozīmju apguve latviešu valodā kā svešvalodā (Meaning of Dative and Dative/Instrumental in Acquisition of Latvian as a Foreign Language). Zinātnisko rakstu krājumā *Valodu apguve: problēmas un perspektīva*, Vol. X. Liepāja: LiePA, 154. – 169. lpp. (in Latvian)
16. Ramonienė M., Brazauskienė J., Burneikaitė N., Daugmaudytė J., Kontutytė E., Priušauskaitė J. (2012). *Lingvodidaktikos terminų žodynas (Linguo-Diactics Term Dictionary)*. Vilnius: Vilniaus universiteto leidykla. (in Lithuanian)
17. Vanhaegendoren K. (2002). *Fremdsprachendidaktik in Theorie und Praxis: Deutsch als Fremdsprache (Teaching Foreign Languages in Theory and Practice: German as Foreign Language)*. Lage: Hans Jacobs. (in German)
18. Zujevaitė A., Žilinskaitė E. (2012). Latvių kalbos kaip užsienio kalbos tekstynas (Corpus of Latvian as a Foreign Language). *Studentų moksliniai tyrimai*. Konferencijos pranešimų santraukos. Vilnius: Lietuvos mokslo taryba, 55.–57. psl. (in Lithuanian)
19. Žigūre V. (1999). Biežāk sastopamās kļūdas, apgūstot latviešu valodas elementārkursu (Most Common Errors while Learning the Basics of Latvian). Zinātniskie raksti *Sastatāmā un lietišķā valodniecība. Kontrastīvie pētījumi*, Vol. VIII. Rīga: Latvijas Universitāte, 107. – 113. lpp. (in Latvian)
20. Камшилова О.Н. (2009). Специальный корпус как составляющая лингвистического обеспечения языкового образования (Specialized Corpus as a Component of the Linguistic Support for Language Teaching). Материалы VIII Международной научно-практической конференции *Иностранные языки в дистанционном обучении: мат-лы.* Т.2 – Пермь, Россия: ПГТУ. (in Russian)
21. Мальцева М.С. (2011). Учебный корпус как база для лингвистического и лингводидактического анализа в рамках методики преподавания иностранных языков (Learner Corpus as the Basis for Linguistic and Linguo-Didactic Analysis in Foreign Languages Teaching Methodology). *Социально-экономические явления и процессы* Т.9 (031), с. 209 – 212. (in Russian)

# **Education for Getting Competence**



## Education of Sustainable Development Competence in Higher Education Institution

Asta Balčiūnaitienė Dr. sc. soc.  
Vytautas Magnus University, Lithuania  
[asta.balciunaitiene@vdu.lt](mailto:asta.balciunaitiene@vdu.lt)

**Abstract:** The present paper aims at exploring the role of higher education institution (HEI) on education of sustainable development competence (SDC). Considering the connection of Education for Sustainable Development (ESD), it is important to reflect on the mission of HEIs in promoting sustainable development (SD) ideas. In the present paper an attempt has been made to draw the parallels between HEIs and SDC as well as to answer the questions how the concept of SD is reflected in HEI. It is believed that building the capacity of students on SDC to communicate SD ideas and discuss about a sustaining world view is of great importance. For this reason the literature review and its analysis of various researchers working on SD and SDC have been done. To support theoretical findings, research has been done on students' attitude to SDC at Vytautas Magnus University and comparative analysis of 2015 – 2016 years has been done. The paper aims to give HEI staff and students an impulse to understand the significance of SD practices, as well as to make choices, taking actions in educating SDC at universities not only in Lithuania, but also abroad.

**Keywords:** higher education, sustainable development competence, sustainable development.

### Introduction

There is a great deal of research into education for sustainable development (ESD), encompassing the concepts of sustainable development (SD), models of incorporation of ESD into the different levels of human life. However, little research has been done into the field of education of sustainable development competence (SDC). Promoting ESD and educating SDC in Higher Education Institutions (HEIs), we have to meet a number of challenges in connecting SDC in terms of SD. Therefore, encouraged by re-thinking of existing approaches to SD, the study is aimed to investigate the present-day reality of education of SDC at Vytautas Magnus University (VMU) and suggest insights of bringing SDC into practices. To support the idea of SD, scientific literature and UN, EU documents analyses on the concept of SD as well as on the promotion of SDC has been done. Based on the analysis of the various expert contributions (Goodland, 2002, 25; Galkutė, 2004, 267; Kliučininkas, Čiegis, 2008, 130; Crawford-Brown, 2011, 47; Wiek, Withycombe, 2011, 20; Leal-Filho, 2015, 9) four dimensions – economical, environmental, social and institutional of the concept of SD have been determined as well as three broad categories of SDC related to complex demands of modern life have been modified. Acting autonomously; communicating interactively; joining into dialogues to function in socially heterogeneous society - these three categories are located at a very general level of abstraction and are thought to be applicable to a wide variety of contexts which are considered relevant for an effective interaction and cooperation globally and locally. Furthermore, it could be argued that ESD enables individuals to view the economy, ecology, social and institutional issues from holistic perspective. For this reason it could be stated that HEIs can help students broaden the concept of SD and offer the ways to educate SDC through the engagement in learning activities related to SD issues. Drawing on author P. Dasgupta (2007) nature and ecology approaches, which have influenced many areas of life, gave rise to eco-friendly, green, ethical and more sustainable communication. The application of the SD related principles with the respect for the environment, nature, and on the habitats in which cultural reproduction takes place, have major implications for the content of the communication and interaction. According to strategies of UNESCO (2015) rethinking the ways of education towards a global common good - formal, informal and non – formal setting is equally important. Moreover, rapid changes in life require to communicate in a sustainable way for a more successful realization of one's goals at personal, local and global levels. Therefore, the ESD principles, formulated by the authors from Lithuania (Galkutė 2004, 269; Kliučininkas, Čiegis, 2008, 124) and major strategic international and national documents (Education for All..., 2015; Nacionalinė Darna..., 2003; Vytauto Didžiojo..., 2012) can serve as a starting point for the analysis of SDC.

The aim of the paper is to give an impulse to HEI staff and students to understand the significance of SD practices, as well as to make choices, taking actions in educating SDC at universities not only in Lithuania, but also in abroad.



## Methodology

The ideas of SD in Lithuania are grounded on National Strategy for Sustainable Development of the Republic of Lithuania (Nacionalinė Darna..., 2003); on the UNESCO Programme Education for All 2000 - 2015 Achievements and Challenges (Education for All..., 2015), which is being implemented together with the State education strategy 2013 – 2022 (2012). The documents ensure that SD ideas are integrated into subject curriculum at all levels of education which fosters learners abilities and enhances motivation to learn and act responsively. HEIs in Lithuania base their SD strategies and programmes following (State education strategy 2013 – 2022, 2012) programmes ensuring education of SDC which only makes sense if the societal component is taken into account by addressing both large scale structures such the micro level (i.e. relationships between students and staff), macro level (relationships between HEIs) and meso level (relationships between faculties, institutes, centres) as well as relationships between stakeholders and individuals. Thus while the internal structure of SDC (attitudes, knowledge, talents, abilities, skills, intentions) are important parameters, so too are the structures of the institutional, social, economic and political environmental – particularly as they have their part to play in actually constructing the demands which both define SDC and require it to be demonstrated by individuals. However, it has been recognized that there is no single use of the concept of competence, core competence, and SDC, and, therefore, there's no broadly accepted definition or unifying competence theory yet. Meanings vary widely, depending largely on the perspective and ideological viewpoints involved, and on the underlying objectives associated with the use of the term, both in scientific discussion and in the policy realm. Thus a pragmatic conceptual approach seems appropriate in line with many authors (Sterling, 2004, 63; Bulajeva, Lepaitė, 2011, 57) who proposed to adopt the following definitional criteria. SDC is a complex three fold entity comprising of knowledge, abilities, skills, moral values and potential of individual qualities (talents, abilities, character features) enabling an individual to carry out a complex activity or task (which is referred as competency) while reacting to different challenges related to SD. The concept of competence is used to refer to the necessary or desirable prerequisites required to fulfil the demands of a particular professional position, of a social role, or a personal project. Using this definition, the structure of SDC derives from the structure of the demands encountered in the context of work and in everyday life, the focus is on what the individual achieves in results, in an action, or in a way of behaviour. The scale may or may not be combined with relative thresholds that establish whether or not an individual possesses a sufficient level of competence for a particular purpose. It is the demand, task, or activity which defines the internal structure of a competence, including the interrelated attitudes, values, knowledge and skills that together make effective action (learning) possible. Therefore, competences cannot be reduced to their cognitive components, but need to be complemented by the conceptualization of competences as internal structures to the individual. This conceptualization reflects optimistic and humanistic approach to the extent that it integrates attitudes and moral values, drives (internal motivation), demands (external motivation) and discourse as prerequisites of a competent performance.

Based on these assumptions, universities have a profound role to play in fostering students' SDC that enable them to contribute to a more sustainable world. Following Bologna Declaration (1999) efforts were made to define a sustainable university. Since 1999 several declarations to form the conception of sustainable university have been formulated and signed (Our Common Future..., 1987; Agenda 21: Earth Summit. The United Nations Programme of Action from Rio, 1992; Bologna Declaration, 1999; Earth Summit 2012, 2012; The European Higher Education Area in 2015; 2015) in which sustainable development programme and sustainable higher education institution are closely related to each other. What is more, Vytautas Magnus University (VMU) strategy 2015 emphasizes the significance of SDC. VMU strategy demonstrates the evidence that SD ideas are promoted and SDC is fostered. Moreover, internal and external learner's motivation plays a significant role in the development of competences, too. Therefore, it is a big challenge for HEIs to equip students with this opportunity. One of the modes for this endeavour is that students should be familiarized with SDC, its subcompetences and learning strategies for ensurance of the competences progress. The structure of SDC, which is presented in figure 1, has been designed based on the strategic documents, literature analysis - humanism, holism, constructivism and educational research theories. Drawing on authors from Lithuania and from abroad (Goodland, 2002, 25; Cortese, 2003, 21; Galkutė, 2004, 267; Kliučininkas, Čiegis, 2008, 130; Crawford-Brown, 2011, 47; Wiek, Withycombe, 2011, 203; Bastardas-Boada, 2014, 163; Leal-Filho,

2015, 9) it could be claimed that the structure of SDC, which is demonstrated in Figure 1, comprises of 6 components:

- personal (internal and external),
- methodological – instrumental (professional),
- social (education and leadership),
- transformative (demonstrating ability to positive change),
- communicative (demonstrating linguistic intelligences) and
- cross – cultural (demonstrating ability to interact in social networks) subcompetences.

However, SDC subcompetences can undergo different modifications and can vary depending on contexts. For example, communicative foreign language, cross – cultural communication, transformative and personal subcompetences can be comprised of different components which depend on many factors such as social status, education background, profession and work experience.

Figure 1. The structure of SDC based on theories

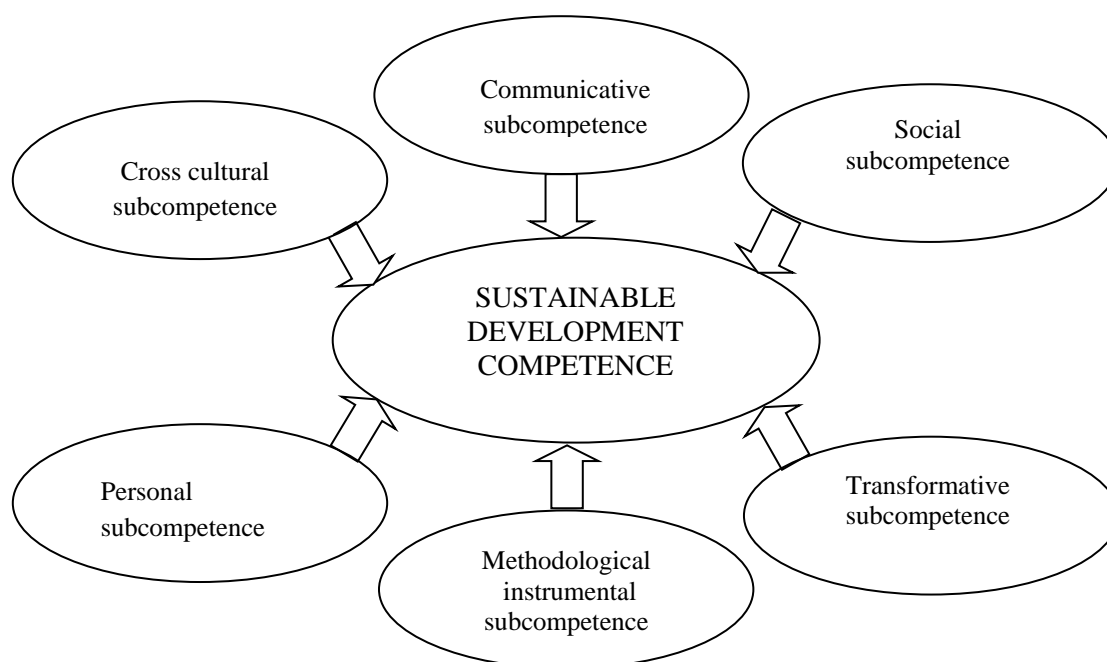


Figure 1. The structure of SDC based on theories.

The structure of SDC in figure 1 displays two important subcompetences: *communication in foreign language and cross- cultural communication* subcompetences. For this reason, it is crucial to analyze the relations of foreign (English) language learning with education of SDC at HEIs. English (A1 – C1 level) is the subject of bachelor study programme of general A group education at VMU. For the time being there is the relation between students' learning aims and the objectives of university. The English study programmes describe what learning activities students are to complete in order finish their course successfully. At VMU during the semester in all levels (A1 – C1) of English, which are designed according to Common European Framework of References for Languages (2001), a mixed form of studies and active methods: group presentations, team work, round table discussions, forums in MOODLE virtual environment (synchronic/asynchronic consultations, interactive activities) as well as individual learning of vocabulary, grammar enriched with the content of SD ideas have a positive impact on education of SDC. Moreover, while applying competence focused learning, students improve not only phonetic, grammatical and lexical communicative foreign language competence, but they also have the possibility to promote SDC. The analyses of English (A1 – C1 level) content of study programmes at Institute of Foreign Languages at VMU proves that there are topics (economical, environmental, social and institutional) which have close relations with the SD ideas and are interfaced.

## Results and discussion

In order to find out students' opinions about SD and SDC a questionnaire survey was performed in 2015 and 2016. 120 first year students from various faculties, who were studying English in B2 level at VMU in 2015 (60 students) and 2016 (60 students) took part in the research and expressed their opinions about SDC.

The findings of the quantitative research demonstrate the VMU students' attitudes to SDC and English B2 language learning processes at VMU, Lithuania. The analysis of the results makes valuable reading. It has revealed that almost a half of English B2 level students (45 %) assume that it is significant to develop SDC. Moreover, they believe that they should get more knowledge (25 %) in English on SD. This finding might be explained by the fact that generally all first year students who are placed into English B2 level at VMU have already acquired very good language skills at secondary schools and can easily take part in discussions on environmental, economic, social and political issues in English. Their language proficiency is quite high to make presentations and do writing assignments on sustainable development issues. Moreover, the question about getting a better education on SD has been highly evaluated and took the third place in popularity among B2 level students of English. This fact may be interpreted that the respondents' communicative and cross-cultural subcompetences have considerably increased and that they would need to acquire new SDC while studying English and other foreign languages at A1 – C1 levels at HEIs.

Table 1

**Results of 2015 and 2016 year students opinions about SDC (%)**

Topics	2015	2016
Economy	13	15
Ecology	31	27
Social issues	28	20
Institutions	2	3
Equity	8	13
Cross – cultural communication in English	10	15
Multilingual communication	8	13
Communicative competence	30	42

The research findings show that the VMU students would like to get more knowledge about ecology and environment protection (27 %) in 2016 (Table 1) as well as to develop their communicative skills while discussing about social issues (20 %) and multilingual competence (13 %) through studying English and other foreign languages. This figure has increased by 5 % since 2015 and it might be interpreted for students need and potential to discuss various SDC topics with their colleagues and counterparts in other foreign languages, not only English. Their wish to study other languages to enhance their multilingual competence (13 %), cross - cultural communication (15 %), might help build up their understanding of other cultures and people's behaviour. However, very little importance is attached to institutions (3 %), supposedly due to their lack of knowledge about institutional involvement in the promotion of SD ideas in interdisciplinary contexts at universities. The comparison of research results in table 1 of the years 2015 and 2016 can draw our attention to the following tendency: there is no big difference in the percentage of students' attitude to the significance of the issues on economy, ecology and institutions in the years 2015 and 2016. According to the students' opinion, institutions (3 %) do not play a significant role in education of SDC. Whereas, in relation to communicative and cross – cultural communication competences in English, the importance of these competences have increased, most likely due to the processes of globalization as well as changes in employability at local and international levels. This demonstrates students' concerns about their profession and opportunities in the changing labour market.

## Conclusions

The students from VMU recognize the importance of social, environmental, ecological, cross – cultural and communicative aspects, which are integral subcompetences of SDC. Moreover, languages, in particular English, serve as a means for building up SD awareness on a broad scale at HEIs. English study B2 level programme is based on the UN, EU, National and Institutional (VMU) Sustainable

Development strategies and comprises interdisciplinary aspects. For this reason, the English language B2 level curriculum gives students opportunities to discuss about sustainable development issues including topics on ecology, economy and social policy. However, a lack of attention is paid to institutional involvement in educating SDC at HE. Therefore, it could be stated that integration of SD content into English (A1 – C1 level) curriculum should be revised in relation to the integration of institutional topics. The results of the research ground the significance of foreign (English) language learning for education of SDC as students, who are learning English at VMU, are enabled to educate cross – cultural and communicative English language subcompetences which are integral elements of SDC. English language learning at VMU, Lithuania, is the privileged experience aimed not only for the linguistic purposes, but also for the acquisition of SDC.

### Bibliography

1. Agenda 21: Earth Summit. The United Nations Programme of Action from Rio. (1992). Rio de Janeiro, Brazil: United Nations. [online] [03.11.2016]. Available at <http://www.un.org/Pubs/textbook/e93020.htm>
2. Bastardas-Boada A. (2014). Linguistic Sustainability for a Multilingual Humanity. *Sustainable Multilingualism*, Vol 5, pp. 134 – 163. ISSN 2335 – 2027. [online] [06.01.2017]. Available at <http://dx.doi.org/10.7220/2335-2027.5.5>
3. *Bologna Declaration*. (1999). Joint Declaration of the European Ministers of Education. [online] [06.12.2016]. Available at [http://www.magna-charta.org/resources/files/bologna\\_declaration.pdf](http://www.magna-charta.org/resources/files/bologna_declaration.pdf)
4. Bulajeva T.; Lepaitė D.; Šileikaitė-Kaishauri D. (2011). *Studijų programų vadovas (Handbook of study programmes)*. Vilnius: Vilniaus universitetas, pp.15 – 60. [online] [06.01.2017]. Available at [http://www.vu.lt/site\\_files/SD/Studentams/02\\_Studiju\\_programu\\_vadovas.pdf](http://www.vu.lt/site_files/SD/Studentams/02_Studiju_programu_vadovas.pdf)
5. *Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR)*. (2001). Strasbourg: Council of Europe. Language Policy Unit. [online] [09.10.2016]. Available at [http://www.coe.int/t/dg4/linguistic/Source/Framework\\_EN.pdf](http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf)
6. Cortese A.D. (2003). The Critical Role of Higher Education in Creating a Sustainable Future. *Planning for Higher Education*, Vol. 3, pp. 15 – 22. [online] [06.01.2017]. Available at [http://www.aashe.org/resources/pdf/Cortese\\_PHE.pdf](http://www.aashe.org/resources/pdf/Cortese_PHE.pdf)
7. Crawford-Brown D. (2011). Sustainable Development. In Madu C., Kuei C. (Eds.) *Handbook of Sustainability Management*. London: Imperial College Press.
8. Dasgupta P. (2007). Nature and the Economy. *Journal of Applied Ecology*, Vol. 44, pp. 105 – 114.
9. *Earth Summit 2012*. (2012). The United Nations Conference on Sustainable Development (UNCSD). Rio+20. Rio de Janeiro, Brazil: United Nations. [online] [16.01.2017]. Available at [https://en.wikipedia.org/wiki/United\\_Nations\\_Conference\\_on\\_Sustainable\\_Development](https://en.wikipedia.org/wiki/United_Nations_Conference_on_Sustainable_Development)
10. *Education for All 2000 – 2015: Achievements and Challenges*. (2015). Paris: UNESCO Publishing. [online] [16.01.2017]. Available at <http://unesdoc.unesco.org/images/0023/002322/232205e.pdf>
11. Galkutė L. (2004). Universities for Social Development. In Leal-Filho W., Ubelis A., Lang P. (Eds.). *Integrative Approaches Towards Sustainability in the Baltic Sea Region*. Berlin: Europäischer Verlag der Wissenschaften, pp. 267 – 273.
12. Goodland R. (2002). Sustainability: Human, Social, Economic and Environmental. *Encyclopedia of Global Environmental Change*. London: John Wiley & Sons.
13. Kliučininkas L., Čiegis R. (2008). *Darnus Vystymasis: Aplinka, Ekonomika, Technologijos (Sustainable Development: Environment, Economics and Technologies)*. Kaunas: KTU, Biznio mašinų kompanija. (in Lithuanian)
14. Leal-Filho W. (2015). Education for Sustainable Development in Higher Education. In *Transformative Approaches to Sustainable Development at Universities*. Switzerland: Springer International Publishing, pp. 3 – 10.
15. *Nacionalinė Darnaus Vystymosi Strategija (National Strategy for Sustainable Development of the Republic of Lithuania)*. (2003). Lietuvos Respublikos vyriausybė, nutarimas Nr. 379. Vilnius: LRV (in Lithuanian)
16. *Our Common Future. Report of The World Commission on Environment and Development*. (1987). Oxford, NY: Oxford university press. [online] [16.11.2016]. Available at <http://www.un-documents.net/our-common-future.pdf>

17. *State Education Strategy 2013 – 2022*. (2012). Vilnius: Ministry of Education and Science of the Republic of Lithuania. [online] [16.01.2017]. Available at <https://rio.jrc.ec.europa.eu/en/library/state-education-strategy-2013-2022>
18. Sterling S. (2004). An Analysis of the Development of Sustainability Education Internationally: Evolution, Interpretation and Transformative Potential. In Blewitt J., Cullingford C. (Eds.) *Sustainable Development: A Challenge for Higher Education*. London: Earthscan.
19. The European Higher Education Area in 2015: *Bologna Process Implementation Report*. (2015). Luxembourg: Publications Office of EU. [online] [16.11.2016]. Available at [http://www.eacea.ec.europa.eu/education/eurydice/documents/thematic\\_reports/182EN.pdf](http://www.eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/182EN.pdf)
20. *Vytauto Didžiojo Universiteto 2012 – 2020 m. Strategija (Vytautas Magnus University Strategy for 2012 – 2020)*. (2012). Kaunas: Vytauto Didžiojo Universitetas [online] [16.11.2016]. Available at <http://www.vdu.lt/wp-content/uploads/2012/07/35129.pdf> (in Lithuanian)
21. Wiek A., Withycombe L., Redman Ch.L. (2011). Key Competences in Sustainability: a Reference Framework for Academic Program Development. *Sustainability Science*, Vol. 6 (2), pp. 203 – 218.

## Usage of the Goals for Sustainable Development in Formation of Learning Outcomes in Higher Education

**Baiba Briede** Dr. paed.

Latvia University of Agriculture, Latvia

[baiba.briede@llu.lv](mailto:baiba.briede@llu.lv)

**Abstract:** Learning outcomes (knowledge, skills and competence) as one of the vital concepts of the 21st century Europe is being developed in the field of education and it is explained in the European Qualification Framework's (EQF) levels and national frameworks. It means constant revision of them on all levels of education. The aim of the study is to analyse the goals for sustainable development of society and education and substantiate the principles for implementation of the goals' ideas in learning outcomes, and analyse students' and educators' attitude towards the learning outcomes. The study was carried out analysing scientific cognitions and documents as well as questioning students of the learning outcomes. The process of formulation them is quite complicated because it is necessary also to decide on the crucial ideas of 21st century considering pillars of education, development of knowledge society and United Nations Organization aims for sustainable development. They should serve as a base for revising the formulations of learning outcomes in favour of the goals of sustainable development and determining of principles how to reach them. Theoretical investigations of sustainable development goals and prospects of reaching them are summarized in the following principles of university studies which foster understanding, analysis, assessment and implementation of actions holistically in favour of sustainability: integration of the themes and problems of sustainable development in study programmes; transdisciplinarity; transformative learning including both orientation towards process and outcomes; usage of information and communication technology (ICT). The results on students attitude towards learning outcomes by means of the method of questionnaire were obtained from 761 students and 20 educators of Latvia University of Agriculture (LLU) from 2015 till 2017. There were compared the data and their distribution got from the first and third year students using p value ( $p \leq \alpha = 0,05$ ) as a criterion. The goals for sustainable development by means of the principles should be included in each study programme and they could have an impact on students' values and conscience in a way that they become true agents of sustainable development, and the principles could serve as a base for revising the content of study courses and learning outcomes.

**Keywords:** higher education, goals for sustainable development, learning outcomes, principles.

### Introduction

The concept of sustainable development manifests that "Humanity has the ability to make development sustainable to ensure that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission..., 1987, 11).

According to UNECE Strategy for Education for Sustainable Development (ESD) (Learning from..., 2009, 149-150). "Sustainable development is a complex issue, encompassing economic, environmental and social dimensions. In other words, development is essential to satisfy human needs and improve the quality of human life. At the same time, development must be based on the efficient and responsible use of all of society's scarce resources – natural, human and economic".

In order to keep and develop the concept of sustainable development in higher education the study directions/programmes and courses should include the ideas of the goals of UNECE Strategy for ESD (Learning for..., 2009), Sustainable Development Goals (2015) by UN and The Four Pillars of Learning (2016) by UNESCO.

Learning outcomes are understood to be statements that describe mainly three major domains: knowledge (learning to know), skills (learning to do) and competences (learning to be). The three domains are in themselves contested concepts, and interpretations vary across contexts (Keevy, Chakroun, 2015, 32).

Learning outcomes are explained as an entity of knowledge, skills and competence at the end of the study programme, module or course in the Law of Higher Schools of Latvia (Augstskolu likums, 2011).

Understanding and solving of the 21st century challenges in the context of sustainability should be a vital part of learning outcomes in higher education and therefore importance, steps, difficulties and communication with students in the process of formulation of the learning outcomes had been discussed in the focus groups of educators of LLU in 2015.

The first and third year students' purposefulness to reach learning outcomes and self-assessment of them had been studied in 2015, 2016 and 2017.

The aim of the study is to analyse the goals for sustainable development of society and education and substantiate the principles for implementation of the goals' ideas in learning outcomes, and analyse students' and educators' attitude towards the learning outcomes.

## Methodology

The ideological basis for revising learning outcomes is crucial goals of the sustainable development of education and society stated by the United Nations (UN) and United Nations Educational, Scientific and Cultural Organization (UNESCO).

On September 25th 2015, countries adopted a set of 17 goals to end poverty, protect the planet, and ensure prosperity for all as part of each goal has specific targets to be achieved over the next 15 years. Targeted learning outcomes considering 17 goals in learning outcomes could be sustainability oriented contribution during the process of studies. The goals are the following (Sustainable Development ..., 2015):

- end poverty in all its forms everywhere;
- end hunger, achieve food security and improved nutrition and promote sustainable agriculture;
- ensure healthy lives and promote well-being for all at all ages;
- ensure inclusive and quality education for all and promote lifelong learning;
- achieve gender equality and empower all women and girls;
- ensure access to water and sanitation for all;
- ensure access to affordable, reliable, sustainable and modern energy for all;
- promote inclusive and sustainable economic growth, employment and decent work for all;
- build resilient infrastructure, promote sustainable industrialization and foster innovation;
- reduce inequality within and among countries;
- make cities inclusive, safe, resilient and sustainable;
- ensure sustainable consumption and production patterns;
- take urgent action to combat climate change and its impacts;
- conserve and sustainably use the oceans, seas and marine resources;
- sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss;
- promote just, peaceful and inclusive societies;
- revitalize the global partnership for sustainable development.

Appropriate understanding, analysis and assessment of 17 goals could be included in learning outcomes on all levels of various study courses of education directions/programmes, for example: understand, analyse and assess: how to "adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility"; "...the share of renewable energy in the global energy mix"; "promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities" (Sustainable Development ..., 2015).

The Four Pillars of Learning (2016) are fundamental principles for reshaping education and their content reflects the way how a person could get knowledge of himself/herself and how to act with the purpose to keep humanistic way of living in the society. It is important that people with higher education understand and implement the content of four pillars in their professional and everyday life because they usually are the leading persons and have an important impact on public events and its development.

Like UN 17 goals for sustainable development the four pillars of education for sustainable development content could be integrated in the courses of higher education programmes and outlined in learning outcomes.

Actually understanding and implementation of the pillars start already on the lower levels of education, i.e. in general or vocational education but higher education gives a deeper, more versatile and generalized sense of them. The Four Pillars of Learning (2016) content in higher education could be the following:

- learning to know: to provide the cognitive tools required to better comprehend the world and its complexities, and to provide an appropriate and adequate foundation for future learning.
- learning to do: to provide the skills that would enable individuals to effectively participate in the global economy and society.
- learning to be: to provide self analytical and social skills to enable individuals to develop to their fullest potential psycho-socially, affectively as well as physically, for a all-round 'complete person.
- learning to live together: to expose individuals to the values implicit within human rights, democratic principles, intercultural understanding and respect and peace at all levels of society and human relationships to enable individuals and societies to live in peace and harmony.

United Nations Economic Commission for Europe (UNECE) put forward expected outcomes (Learning from..., 2009, 65) which could be reached including the four pillars of learning into study courses enhancing learners' capacity for:

- learning to learn (to know): posing analytical questions/critical thinking; understanding complexity/systemic thinking; overcoming obstacles/problem-solving; managing change/problem-setting; creative thinking/future-oriented thinking; understanding interrelationships across disciplines/holistic approach;
- learning to do: applying learning in a variety of life-wide contexts; decision-making, including in situations of uncertainty; dealing with crises and risks; acting responsibly; acting with self-respect; acting with determination;
- learning to be: self-confidence; self-expression and communication; coping under stress; ability to identify and clarify values;
- learning to live and work together: acting with responsibility (locally and globally); acting with respect for others; identifying stakeholders and their interests; collaboration/team working; participation in democratic decision-making; negotiation and consensus-building; distributing responsibilities (subsidiarity).

Diverse challenges outlined in goals determine also the key themes of sustainable development which should be investigated during studies, for example, "...poverty alleviation, citizenship, peace, ethics, responsibility in local and global contexts, democracy and governance, justice, security, human rights, health, gender equity, cultural diversity, rural and urban development, economy, production and consumption patterns, corporate responsibility, environmental protection, natural resource management and biological and landscape diversity. Addressing such diverse themes in ESD requires a holistic approach" (Learning from..., 2009, 147).

It means that holism ties together content and methodical parts of studies promoting systemic reaching of learning outcomes. Holistic approach also fosters the development of coherent view of overcoming or solving of problems of challenges and one's needs, attitudes and values, as well as make studies more professional, emotional, social, valuable and transdisciplinary for every student and educator.

Holism and transdisciplinarity is oriented towards both on process and outcomes and it means diverse scope of teaching/learning, evaluation methods and personal lifestyle fostering the development of competence.

Reaching of UN 17 goals of sustainable development and four pillars of education for sustainable development (ESD) is a serious challenge and therefore a teaching/learning process in that direction is of high importance. UNECE (Learning from..., 2009, 66) proposed the following teaching/learning methods for usage in ESD: discussions; conceptual and perceptual mapping; philosophical inquiry; value clarification; simulations; role playing; games; scenarios; modelling; information and communication technology (ICT); surveys; case studies; excursions and outdoor learning; learner-driven projects; good practice analyses; workplace experience and problem-solving.



ESD methods should not be usual group works but it could be more effectively to implement the transformative learning as experimental learning by means of critical reflection through rational discourse by J. Mezirow (1991, 2000).

Transformative learning theory developed by J. Mezirow (1991, 2000) describes diversely how learners use their experience constructing, discussing and assessing meaning. Critical reflection of the experience is a crucial component of transformative learning. It empowers changes of understanding of the self, beliefs, attitude and emotions. Rational discourse is a means which should be used in the process of transformative learning. Therefore, the meaning schemes are transformed and the learners develop their thinking skills integrating new cognitions in their experience (Briede, 2016, 60).

It is worth mentioning that the usage of ICT is a crucial for contemporary professionals because it is information and innovations era and societies' development largely depends on an access and usage of global information. To keep progress, it is necessary to receive appropriate information at the right time, and it is important both in science and practice. ICT cannot be separated from daily needs as well.

The theoretical construct of the empirical study instrument were M. T. Siniscalco and N. Auriat (2005) and L. Cohen, L. Manion and K. Morrison (2011) conceptions for writing questions. They stress keeping of the vocabulary simple and the questions short, avoiding of: double-barrelled, hypothetical questions and double negatives, overtaxing of the respondent's memory and overlapping response categories. The questionnaires should encourage respondents to co-operate and raise their interest on problems. It means that the questions have to be easy understandable and attractive. The purpose of the questionnaire is both to collect data and promote students' deeper reflection on: assessment of their learning outcomes; ability to use knowledge, skills and competence in new situations; studies with the purpose to reach as much as possible better learning outcomes and interest to reach planned learning outcomes of every study course.

There were compared the data and their distribution got from the first and third year students using p value ( $p \leq 0,05$ ) as a criterion. Calculations were done by interactive calculation tool (Preacher, 2001).

Empirical study had been carried out in May and December 2015 and in September 2016 and 2017. The method of questionnaire to investigate the first and third year students' self-assessment on the learning outcomes had been carried out. There were included ranged answers in the questionnaire (Kristapsone, 2014). Students marked high (h), medium (m) and low (l) level of purposefulness of reaching better outcomes of learning and their ability to use the learning outcomes in further studies. The obtained results could be used in the revision of planned results of study courses and implementation of methods and content promoting better reaching of the learning outcomes.

Respondents: 294 first and 218 third year students in 2015/2016 study year and 249 first year students in 2016/2017 study year from the Faculty of Engineering, Faculty of Environment and Civil Engineering, Faculty of Food Technology, Faculty of Economics and Social Development, Faculty of Information Technologies, Faculty of Agriculture, Forest Faculty and Faculty of Veterinary Medicine. Totally eight faculties and 761 students.

The focus group method was used in the group of 20 LLU educators in October 2015. The were discussed and summed up views about the meaning of formulation of learning outcomes.

## Results and discussion

Theoretical investigations of sustainable development goals and prospects of reaching them are summarized in the following principles of university studies which foster understanding, analysis, assessment and implementation of actions holistically in favour of sustainability:

- integration of the themes and problems of sustainable development in study programmes;
- transdisciplinarity;
- transformative learning including both orientation towards process and outcomes;
- the usage of ICT.

The first and third year students' self-assessment of learning outcomes in 2015/2016 study year is displayed in details in Table 1.

Table 1

**Students' self-assessment of learning outcomes**

Indicator		Respondents		Self-assessment			P value
		Year	Totally	h	m	l	
Students assess their learning outcomes	n	1	294	166	121	7	0.02
		3	218	111	91	16	
	%	1	100	57	41	2	
		3	100	51	42	7	
Usage of knowledge, skills and competence in new situations	n	1	294	121	163	10	0.09
		3	218	78	124	16	
	%	1	100	41	56	3	
		3	100	36	57	7	
Studies with the purpose to reach as much as possible better learning outcomes	n	1	294	182	112	0	0.000
		3	218	102	102	14	
	%	1	100	62	38	0	
		3	100	47	47	6	
Totally	n	1	882	469	396	17	0.000
		3	654	291	317	46	
	%	1	100	53	45	2	
		3	100	48	45	7	

The indicator's *studies with the purpose to reach as much as possible better learning outcomes* differences are very significant between the first and third year students' self-assessment ( $p < 0.000$ ). It is higher for the first year students - 62 % of students gave the highest self-assessment.

The indicator on students assessment of their learning outcomes also shows statistically significant ( $p = 0.02$ ) differences between the first and third year students' self-assessment – 57 % of the first year students gave the highest self-assessment.

There are also self-assessment differences between the first and third year students in the indicator *usage of knowledge, skills and competence in new situations* but they are not statistically significant ( $p = 0.09 < p = 0.05$ ).

The differences between the first and third year students' self-assessment sums are significant ( $p < 0.000$ ) – they are higher (%) for the first year students.

The first year students' self-assessment of their interest about planned learning outcomes in 2016/2017 study year is displayed in details in Table 2.

Table 2

**First year students interest about reaching planned learning outcomes of the study course**

Indicators	Level of interest			
	h	m	l	Totally
	In all study programmes			
%	60	36	4	100
n	148	91	10	249
	148	101		249

The study had been carried out in September 2016./2017 study year. High level of interest is for 60 % of respondents. Their number (148) differs statistically significantly ( $p < 0.00$ ) from the number of respondents with middle and low level of interest (101). P value is determined by online programme (Preacher, 2001). A group of 20 LLU educators discussed on the importance of writing of learning outcomes. They recognised that the process of writing helps them to develop and revise a course's content and concretise their intention. The learning outcomes are very helpful for students because they reflect the essence of the course and students can comprehend the entity of the course easily. The educators stressed that the learning outcomes help them to focus more clearly what they really want that the students reach as well as common outcomes language promotes discussions with colleagues.

Topicality of learning outcomes in coherence with sustainability is analysed by M. Svanstrom, F.J. Lozano-Garcia, D. Rowe (2008). It is emphasized that “addressing sustainability will imply that HEIs (higher educational institutions – the author’s note) to provide the proper foundation to consider the concept within their multiple interconnected dimensions. Of course, the professionals should be knowledgeable and skilful in their disciplines, but also they should resonate with the systemic and complex frame of reference of sustainability” (Svanstrom, Lozano-Garcia, 2008, 350). The authors recognise that “Skills that are often mentioned are problem-solving, critical thinking, creative thinking, self-learning and skills related to communication, teamwork and becoming an effective change agent to shift policies, practices and societal norms. But LOs (learning outcomes – the author’s note) do not refer only to knowledge and skills but also to awareness, attitudes and values” (Svanstrom, Lozano-Garcia, 2008, 342).

Guidance for United Kingdom (UK) higher education providers defines education for sustainable development as „...the process of equipping students with the knowledge and understanding, skills and attributes needed to work and live in a way that safeguards environmental, social and economic wellbeing, both in the present and for future generations” (Education for..., 2014, 5).

“Education for sustainable development means working with students to encourage them to:

- consider what the concept of global citizenship means in the context of their own discipline and in their future professional and personal lives;
- consider what the concept of environmental stewardship means in the context of their own discipline and in their future professional and personal lives;
- think about issues of social justice, ethics and wellbeing, and how these relate to ecological and economic factors;
- develop a future - facing outlook; learning to think about the consequences of actions, and how systems and societies can be adapted to ensure sustainable futures” (Education for..., 2014, 5).

The core themes for sustainable development in higher education in UK are global citizenship, environmental stewardship, social justice, ethics and wellbeing, and developing of future. The themes are cross-referred in learning outcomes: knowledge and understanding, skills, and attributes in UK higher education (Education for..., 2014).

W. Louw (2013) suggests that in the cases when the studies are focussed on human settlements qualifications three aspects should be included in the curriculum: knowledge (basic knowledge about many disciplines); conflict management and negotiation (working with contractors, labourers, municipalities, and lawyers) and project scope (project plan and time frames, vision, and impact).

W. Louw (2013) has outlined a practical case where sustainability goal ideas could be implemented in real life. Curriculum suggestions by W. Louw (2013) could be useful for other curriculums in which sustainability goals are worked in because reaching of them sometimes could not convenient for industries as nature protection and local society’s interests. Therefore higher education through curriculums has to show ways for becoming specialists how to be effective in implementing sustainability ideas.

## Conclusions

- University graduates will be influential problem-solvers and decisions-makers and they will educate society and professionals. They are becoming change initiators to create, introduce and implement progressive ideas. Therefore, they need deep comprehension of the goals for sustainable development and means of reaching them balancing between economic and political pressures. The goals for sustainable development should be included in each study course content and implementing of transformative learning paradigm could have an impact on students’ values and conscience in a way that they become true agents of sustainable development.
- The principles of university studies which foster understanding, analysis, assessment and implementation of actions holistically in favour of sustainability could serve as a base for revising the content of study courses and learning outcomes.
- Students’ self-assessment of their learning outcomes should be promoted regularly to maintain their ability to form a critical opinion of their successes in studies. The easiest way to do it is by questionnaires, and it is possible to get an appropriate number of responses in a short period of time. Therefore the questionnaire results reflect the students’ and educators’ understanding of the quality

of studies. The obtained results serve as an indicator which shows further activities to improve the study process.

## Bibliography

1. *Augstskolu likums (Law of Institutions of Higher Education)*. (2011). Rīga: LR Saeima. [online] [03.11.2016]. Available at <http://likumi.lv/doc.php?id=37967> (in Latvian)
2. Briede B. (2016). Purposefulness and Time Management Components of Self-directed Studies at Latvia University of Agriculture. *Proceedings No 9 of the 9<sup>th</sup> international scientific conference Rural Environment. Education. Personality*. Latvia University of Agriculture, pp. 57 – 63.
3. Cohen L., Manion L., Morrison K. (2011). *Research methods in Education*. (7th ed.). Oxon, NY: Routledge, p. 758. [online] [03.11.2016]. Available at <https://www.amazon.com/Research-Methods-Education-Louis-Cohen/dp/0415583365>
4. Education for Sustainable Development. (2014). *Guidance for UK higher education providers*. [online] [03.11.2016]. Available at <http://www.qaa.ac.uk/en/Publications/Documents/Education-sustainable-development-Guidance-June-14.pdf>
5. Keevy J., Chakroun B. (2015). *Level-setting and recognition of learning outcomes*. Paris: UNESCO, p. 203. [online] [03.11.2016]. Available at <http://unesdoc.unesco.org/images/0024/002428/242887e.pdf>
6. Kristapsone S. (2014). *Zinātniskā pētniecība studiju procesā (Scientific Research in Study Process)*. Rīga: SIA Biznesa augstskola Turība. [online] [03.11.2016]. Available at <http://www.turiba.lv/f/Izdevnieciba/ZPSP-saturs-ievads-internetam.pdf> (in Latvian)
7. *Learning from Each Other. The UNECE Strategy for Education for Sustainable Development*. (2009). New York, Geneva: United Nations. [online] [02.11.2016]. Available at <https://sustainabledevelopment.un.org/content/documents/798ece5.pdf>
8. Louw W. (2013). Green Curriculum: Sustainable Learning at a Higher Education Institution. *The International Review of Research in Open and Distributed Learning*, Vol. 14(1). [online] [02.11.2016]. Available at: <http://www.irrodl.org/index.php/irrodl/article/view/1310/2418>
9. Mezirow J. (1991). *Transformative Dimensions of Adult Learning*. San Francisco: Jossey Bass.
10. Mezirow J. (2000). *learning as transformation: Critical Perspectives on a Theory in Progress*. (1<sup>st</sup> ed.). San Francisco: Jossey Bass. [online] [02.11.2016]. Available at <https://www.amazon.com/Learning-Transformation-Critical-Perspectives-Progress/dp/0787948454>
11. Preacher K. J. (2001). *Calculation for the Chi-square Test: An Interactive Calculation Tool for Chi-Square Tests of Goodness of Fit and Independence* [Computer software], [online] [06.11.2015]. Available at <http://quantpsy.org> and <http://www.quantpsy.org/chisq/chisq.htm>
12. Siniscalco, M. T., Auriat, N. (2005). *Questionnaire Design. Quantitative Research Methods in Educational Planning*. Module 8, K.N. Ross (Ed). Paris: UNESCO International Institute for Educational Planning, p. 92. [online] [12.11.2016.] Available at [http://www.unesco.org/iiep/PDF/TR\\_Mods/Qu\\_Mod8.pdf](http://www.unesco.org/iiep/PDF/TR_Mods/Qu_Mod8.pdf)
13. *Sustainable development goals*. (2015). [online] [14.11.2016.] Available at: <http://www.un.org/sustainabledevelopment/sustainable-%20development-goals/>; <http://www.un.org/sustainabledevelopment/hunger/>; <http://www.un.org/sustainabledevelopment/energy/>; <http://www.un.org/sustainabledevelopment/climate-change-2/>
14. Svanstrom M., Lozano-Garcia F.J., Rowe D. (2008). Learning Outcomes for Sustainable Development in Higher Education. *International Journal of Sustainability in Higher Education* (IJSHE), Vol. 9(3). [online] [07.11.2016.] Available at [http://hub-media.aashe.org/uploads/SvanstromLearning\\_OutcomesSust\\_Dev.pdf](http://hub-media.aashe.org/uploads/SvanstromLearning_OutcomesSust_Dev.pdf)
15. *The Four Pillars of Learning*. (2016). UNESCO. [online] [04.11.2016.] Available at <http://www.unesco.org/new/en/education/networks/global-networks/aspnet/about-us/strategy/the-four-pillars-of-learning/>
16. *World Commission on Environment and Development Report*. (1987). UN General Assembly. [online] [04.11.2016.] Available at [http://www.channelingreality.com/Documents/Brundtland\\_Searchable.pdf](http://www.channelingreality.com/Documents/Brundtland_Searchable.pdf)

## Development of Labour Protection Competence for Specialists

Dace Brizga Mg. pub. admin.  
Latvia University of Agriculture, Latvia  
[dacebrizga@inbox.lv](mailto:dacebrizga@inbox.lv)

**Abstract:** The topicality of the development of labour protection competence for specialists is associated with an incomplete conformity of this competence with the protection of organizations or enterprises staff's life and health as well as promoting wellness. The aim of the study was to evaluate the dynamics of the development of the specialists' labour protection competence in the learning/studies process and work environment; improve competence in learning/studies and in the work environment of enterprises and organizations. In the data analysis nonparametric statistics – modes, medians and amplitudes were used. The significance of data differences (p value) was determined by the interactive calculation tool for chi-square tests. The upgraded competence development model components - knowledge, skills, attitude and intelligibility have been evaluated. Taking into account the assessment results, the specialists' studies as well as the enterprise or organisation staff's training have been improved. The methodological basis of the study included studies, analyses and evaluation of the relevant publications in the context of the competence of the specialists of healthy, sustainable and safe work. The reflection of the author's personal experience which was obtained through the working in an enterprise from 1980 to 2007, and teaching experience working as a teacher at Latvia University of Agriculture from the year 2008 till present has also been taken into account. According to the aim of the study the competence model components - knowledge, skills and attitudes with regard to values and dynamics of their development have been studied. The study conducted in the year 2016 lasted eight months. As a result of the study, the differences between the evaluation of the competence at the beginning and at the end of the study were found to be statistically significant ( $p=0.00$ ).

**Keywords:** competences development, professional competence, specialists, adult education.

### Introduction

One of the tasks in education in the 21st century is to ensure a sustainable development in society. In pursuing this goal, it is significant to ensure each society member's life and health and to promote life-long wellness. The activities of labour protection specialists and their adequate competence are of great importance in enterprises and organizations. The labour protection specialist should encourage each employee's and employer's personal responsibility for his or her performance, life, health and wellness both in the work environment and outside of it.

The labour specialist's task is to learn to improve him/herself, to develop his/her competence as well as motivate the personnel of the organisation/enterprise to develop the competences which ensure the preservation of life and health as well as wellness at work and after work. It is particularly important to change the employers' and employees' formal attitude to observing the rules of safe work in an organisation or enterprise, and by changing the employees' behaviour, to promote the increase in overall life expectancy (Brizga, 2016a), since competence is the ability to acquire and responsibly use knowledge, skills and attitudes in action, and there are certain criteria to be applied to judge about this ability (Briede, 2009) and its essence (Зимняя, 2004) is based on people's motivation, purposefulness, reflection and experience, the ability to mobilize willpower which manifests itself in all kinds of activities. The competence in education is associated with the process of continuity – initially the level of knowledge is based on the previous knowledge and finally it is the result which has been achieved.

In other studies competence is characterised as a specific knowledge organization type which allows one to make effective decisions in a corresponding field of activity (Холодная, 1997) since the characteristics of a subject's knowledge base is characterised by the subject's competence – a high level of competence requires a high level understanding of a problem and flexibility of its solution (Холодная, 2002). In the process of developing the competence criteria the individual intelligence, intellectual perception and development as well as experience in solving complicated problems should be taken into consideration. A particularly topical in the context of labour and civil protection is the scientist's notion regarding the difference between a competent specialist who knows a specific task and how to perform it and a specialist who knows and desires to perform a specific task but is not able to perform it.

Intelligibility in the context of labour protection specialists refers to qualitatively elaborated clearly understandable instructions, job descriptions and instructing. The study shows (Brizga, 2016a) that one of the reasons of formal attitude to labour and civil protection is the quality of instructions, since they are too long, complicated and difficult to understand.

The methodological basis of the study - studies, analyses and evaluation of the relevant publications (Ajzen, 1991; Armitage, Conner, 2001; Beck, Cowan, 2005; Briede, 2009; Cook-Greuter, 2000, 2004, 2005; Pfaffenberger, 2005, 2013; Smith, DeFrates-Densch, 2009; Wilber, 2007a, 2007b). The ideas generated from the works of these authors have been used to improve the programmes, teaching materials and methods.

Some suggestions have been stated regarding the importance of the programmes which are developed by the managers of enterprises or organisations to achieve the behaviour change of the management. It is purposeful to use the behaviour change theories (Daniellou, 2006; Eraut, 1994, 2004; Smith, Hogg, 2008; Zohar, 2004). The greatest challenges with regard to the programmes and chapters to be acquired are to include in them the topics dealing with the ways on how to change behaviour for ensuring a healthy life style (Glanz, Rimer, 2008). In the process of programme development and implementation it is very important to have cooperation of the managers of the enterprises and organisations with competent labour protection specialists who have acquired the competence required for the learning environment of the respective company and organisation.

Transformation of a personality based on culture, ethics and values has been analysed by the researchers of *Human development theories* (Beck, Cowan, 2005; Cook-Greuter, 2000, 2004, 2005; Wilber, 1996, 2000) pointing out that people have two life strategies: the scarifying strategy – changing oneself by adapting to the world or the expressive strategy – changing the world by adapting it to oneself as well as by changing the individual's persuasion based on values, the individual's behaviour/ action also changes (Wilber, 2007a, 2007b).

Labour protection specialists should organise labour and civil protection studies in such a way that the employers and employees would be motivated to use safe work techniques and carry out the self-evaluation of their behaviour. The study indicates that an individual's behaviour is shaped by an *intention* – the attitude to the anticipated results of behaviour and other persons' views about behaviour (Ajzen, 1991; Armitage, Conner, 2001; Godin, Kok, 1995). In adult education (Hoare, 2006; Pfaffenberger, 2005, 2013; Smith, DeFrates-Densch, 2009) self-development and self-effectiveness in intellectual development process play an important role.

In the study process the discussions with both teaching staff and students about the experience gained are very important. The evaluation and self-evaluation of competence facilitate acquiring of self-assessment skills (Ross, 2006; Ross, Bruce, 2007). Reflection facilitates students' understanding about their pedagogical activities (Davis, Dargusch, 2015; Ferguson, 2011). In order to carry out the evaluation of skills it is necessary to develop the criteria of self-evaluation (Grant, 2014).

Basing on the theoretical analysis it has been stated that:

*The competence of labour protection specialists in order to perform safe and sustainable work, which is non-harmful to health, includes the components of attitude, skills, knowledge and intelligibility. It develops and improves in action – as interaction between individual abilities and the social environment.*

Knowledge, skills, attitudes and intelligibility are the components of competence; therefore, the following assessments were applied for expert evaluation.

Attitude –as tolerant, positive, consistent and responsible attitude towards promoting labour which is safe, sustainable and non-harmful to health, responsibility for one's words and actions; responsibility to one's partners, critical approach to the existing attitude of society members to the observance of labour protection rules, minimising the formal attitude to these rules; respect to different views and diversity of views; objective and considerate evaluation and characterisation of accidents and observing confidentiality.

Knowledge – the labour protection specialists understands occupational health and labour medicine, promotion of wellness, protection of the surrounding environment, management sciences, economics,

business IT, record keeping, rules and regulations of labour protection, work environment risk assessment and management, choice of labour protection means, ergonomics, fire safety and civil protection, work psychology and pedagogy, organisation of learning and instructing process, developing of the required methodological materials in the context of safe and sustainable work which is non-harmful to health.

**Skills** - the labour protection specialists is able to teach classes in labour and civil protection, reducing the formal attitudes in society towards labour and civil protection, running workshops on work safety education for development of one's knowledge, skills and competence.

**Intelligibility** – the ability to comprehensibly, according to the knowledge level of a certain learner or that of a learning group, demonstrate and explain safe work techniques which are sustainable and non-harmful to the employee's health, as well as to design understandable methodological materials and instructions.

**Competences** - the labour protection specialists are able to independently formulate, critically analyse and predict the development of labour safety system which is safe, sustainable and non-harmful for health. They are also able to solve problems, substantiate decisions and take part in the implementation of tasks, integrating the knowledge of other fields, contribute to the generation of new knowledge in the development of methods of research or professional activities. They are able to show understanding and ethical responsibility for the possible impact of science results or professional activities on the environment and society. They use the acquired knowledge in the process of the development of the study course and diploma paper. The labour protection specialists are able to assess the quality of training and instructions and improve them.

The aim of the study was to evaluate the dynamics of the development of specialists' labour protection competence in the learning/studies process and work environment; improve competence in learning/studies and in the work environment of enterprises and organizations.

## Methodology

The methodology of study is based on the specialists' competence improvement model (Brizga, 2016b) updated in the study. In the current study four components were chosen for its characterisation (Table 2) - *Knowledge, Skills, Attitude and Intelligibility*. In the study carried out in the previous year 3-level (Brizga, 2016a) or 10-level (Brizga, 2015) scales were used. The distributions of data obtained by the 10-level scale are bimodal and it is not possible to accurately determine the mean parameters. The evaluators can't always differentiate the differences of 10 ranges. The current study uses a 4-level scale (Table 1; 2; 3).

In the previous (Brizga, 2015) study the competence level was determined only during the first and second class with a week's break where the competence development opportunities were minimal. The duration of the current study was 8 months and the competence was evaluated 5 times (Table 2; 3). The evaluations during the practice period were particularly significant. Not only self-evaluations alone were used to characterise the competence, but they were adjusted according to practice consultants' observations, students' written reports and the results of the exams.

Within the context of the study it means to improve the trainee's competence and improve the experience of organization's or enterprise's personnel so that healthy, safe and sustainable work can be carried out. According to the behaviour change theories (see *Introduction*) the managers of enterprises and organizations should develop programmes to achieve the behavioural changes with the purpose to ensure a healthy life style. The trainees' task is to take an active part in this process.

The evaluation and self-evaluation of competence, competence survey, unstructured observations, expert evaluations and experience reflection were used. In the data analysis nonparametric statistics – modes, medians and amplitudes were used. The significance of data differences (p value) was determined by the interactive calculation tool for chi-square tests (Preacher, 2001).

The study was conducted from February to October, 2016. The data of the study were obtained from 19 industrial enterprises or organisations with the total number of employees – 1122 and also Latvia University of Agriculture. The participants of the study were 19 specialists studying part-time in the programme “*Labour protection and occupational safety*” and who directly took part in the learning and instructing process of 649 people. The specialists of these enterprises who implement labour protection measures also took part in the study.

### Results and discussion

The results of the study are shown in three tables. The following descriptors were used in the tables: *S* – at the beginning of the session, *F* – at the end of the session, *SP* – at the beginning of the practice, *>* at the end of the session the evaluation is higher than at the end, *=* the evaluation has not changed.

Table 1

#### Labour protection students' competence development evaluation

Nr.	Knowledge		Skills		Attitude		Intelligibility		Competence	
	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>
<i>Competence evaluation level: 1 – min; 4 – max</i>										
1.	2	3	2	2	2	2	3	3	2	2
2.	2	3	2	2	2	3	2	3	3	3
3.	1	3	1	3	1	3	2	4	1	3
4.	3	3	3	3	3	3	4	4	3	4
5.	2	3	2	2	2	3	3	3	3	3
6.	2	3	3	4	2	3	3	4	2	3
7.	3	3	3	3	3	3	3	3	3	3
8.	2	2	2	2	2	2	3	3	2	2
9.	2	3	2	2	2	3	3	3	3	3
10.	1	2	3	3	2	3	3	3	2	3
11.	1	2	1	2	2	3	4	4	3	3
12.	3	4	3	3	3	4	4	4	4	4
13.	1	2	1	2	2	2	2	2	2	2
14.	2	2	2	2	2	2	3	3	2	3
15.	1	2	1	2	2	2	2	2	2	2
16.	2	3	2	2	2	2	2	2	1	2
17.	1	2	1	2	2	3	3	2	1	2
18.	2	3	2	3	1	2	3	3	2	3
19.	2	3	2	3	2	3	2	3	2	3
<b>Data analysis</b>										
Level	Knowledge		Skills		Attitude		Intelligibility		Competence	
	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>	<i>S</i>	<i>F</i>
<i>Distributions of data</i>										
<b>1</b>	6	0	5	0	2	0	0	0	3	0
<b>2</b>	10	7	9	11	14	7	6	4	9	6
<b>3</b>	3	11	5	7	3	11	10	10	6	11
<b>4</b>	0	1	0	1	0	1	3	5	1	2
<b>1+2</b>	<b>16</b>	<b>7</b>	<b>14</b>	<b>11</b>	<b>16</b>	<b>7</b>	<b>6</b>	<b>4</b>	<b>12</b>	<b>6</b>
<b>3+4</b>	<b>3</b>	<b>12</b>	<b>5</b>	<b>8</b>	<b>3</b>	<b>12</b>	<b>13</b>	<b>15</b>	<b>7</b>	<b>13</b>
<i>Descriptive statistics</i>										
<i>M<sub>o</sub></i>	2	3	2	2	2	3	3	3	2	3
<i>M<sub>e</sub></i>	3	3	2	2	2	3	3	3	2	3
<i>A</i>	3	2	3	3	3	3	3	3	4	3
<i>Σ</i>	35	51	38	47	39	51	54	58	43	53
<i>&gt;</i>	16		8		12		9		10	
<i>=</i>	3		11		7		10		9	



Table 2

**Labour protection students` competence components development evaluation (1)**

Level	Data analysis									
	Knowledge					Skills				
	S	F	SP	S	F	S	F	SP	S	F
	Distributions of data									
1	6	0	0	0	0	5	0	0	0	0
2	10	7	2	0	0	9	11	6	0	0
3	3	11	16	12	4	5	7	12	14	7
4	0	1	1	7	15	0	1	1	5	12
1+2	16	7	2	0	0	14	11	6	0	0
3+4	3	18	17	19	19	5	8	13	19	19
Descriptive statistics										
$M_o$	2	3	3	3	4	2	3	3	3	4
$M_e$	2	3	3	3	4	3	3	3	3	4
A	3	3	3	2	1	3	2	2	1	1
$\Sigma$	35	51	56	64	72	38	47	52	62	69
Level	Attitude					Intelligibility				
	S	F	SP	S	F	S	F	SP	S	F
	Distributions of data									
1	0	0	0	0	0	3	0	0	0	0
2	6	4	2	0	0	9	6	2	0	0
3	10	10	13	9	2	6	11	15	12	5
4	3	5	4	10	17	1	2	2	7	14
1+2	6	4	2	0	0	12	6	2	0	0
3+4	13	15	17	19	19	7	13	17	19	19
Descriptive statistics										
$M_o$	3	3	3	4	4	2	3	3	3	4
$M_e$	3	3	3	4	4	2	3	3	3	4
A	3	3	3	2	2	4	3	3	2	2
$\Sigma$	54	58	59	67	74	43	53	57	64	71

Table 3

**Labour protection students` competence development evaluation (2)**

Level	Data analysis				
	S	F	SP	S	F
	Distributions of data				
1	2	0	0	0	0
2	14	7	4	0	0
3	3	11	14	12	4
4	0	1	1	7	15
1+2	16	7	4	0	0
3+4	3	12	15	19	19
Descriptive statistics					
$M_o$	2	3	3	3	4
$M_e$	2	3	3	3	4
A	3	3	3	2	2
$\Sigma$	39	51	54	64	72

Analysing the evaluation sums ( $\Sigma$ ) of competences (Table 3) statistically significant ( $p=0.00$ ) differences between the evaluation sum at the beginning of the study (39) and at the end of it (72). The differences in evaluation sums of the first session (39 and 51) are not statistically significant ( $p=0.21$ ). The differences in evaluation sums of the second session (64 and 72) are also not statistically significant

( $p=0.21$ ). At the end (**F**) of the session higher evaluation ( $>$ ) than at the start (**S**) is in 55 (58%) cases and it had not changed ( $=$ ) in 40 (42%) cases (Table 1). In a similar study in the previous study year (Brizga, 2015, 22) with another group of students at the end of the session the highest evaluations were in 37.5% of cases, the lowest in 37.5% and in 25% of cases they remained unchanged.

For the implementation of a healthy, safe and sustainable work of the competence, it is particularly important to develop the component - *attitude*. Carrying out the evaluations of the development of attitude and self-evaluations it was established that the attitude improved in 33% of cases, partly improved in 49% of cases (in total 83%) and remained unchanged in 18% of 649 people. The attitude became worse in one employee who considered that the studies and instructions followed by the examination of the acquired knowledge were too time consuming. A regular formal signing of the document approving the fact that the instruction has taken place will suffice. In seven enterprises there were not more than 16 workers in each, therefore when observations were carried out, it was established that self-evaluation corresponded to real changes in their attitude.

A detailed competence development evaluation took place in the case study of four enterprises. The number of employees who participated in the study and whose competence had increased was 250. Comparatively higher were the changes in knowledge and skills, since the initial evaluation of attitudes was closer to the highest.

Simultaneously a significant competence development in the work environment had taken place also among the specialists acquiring the part-time study programme *Labour protection and occupational safety*. The sum of the evaluations had increased (Table 3) from 54 to 72 ( $p=0.095 < p=0.10$ ).

The competence development of the enterprises' or organisations' personnel has been positively influenced by the improvement of the premises and time of instructions as well as the improvement of the methodology – the organisation of training premises and display of the teaching aids in these premises, studies during the first part of the day, exercising during work breaks at the work place, using IT and video materials and actualisation of discussions, as well as cooperation among the top level managers and department managers, labour protection and other specialists of business enterprises.

While carrying out the theoretical and experimental study the consistently used Latvian term *darba aizsardzība* (*labour protection*) - not appropriately reflecting the essence of the meaning – caused some difficulties. It is the individual who must be protected by creating and developing a healthy, safe and sustainable work environment and process.

## Conclusions

Evaluating the development dynamics of the competences of the specialists of enterprises or organisations for the implementation of healthy, safe and sustainable work, it was stated that:

- a significant improvement of competence has taken place – the difference between the evaluation of competence at the beginning of the study and at the end is statistically significant ( $p=0.00$ );
- improving the personnel's competence – knowledge, skills and attitude in the work environment, the development of its most significant component - attitude in 83% of those 649 study participants working in enterprises or organisations has taken place; simultaneously in the work environment a significant development of competence ( $p = 0.095$ ) has taken place among the specialists involved in the part-time study programme *Labour protection and occupational safety*;
- the competence development of the enterprises' or organisations' personnel has been positively influenced by the improvement of the instruction premises and time as well as the improvement of the methodology – the organisation of special training premises, learning during the first part of the day, exercising during work breaks, using IT and video materials, actualisation of discussions, as well as cooperation among the top level managers and department managers, labour protection and other specialists of enterprises;
- further study is recommended in order to improve the competence development model for labour protection specialists and the learning and study programmes based on it, as well as the terminology.

## Bibliography

1. Ajzen I. (1991). The Theory of Planned Behavior. *Organizational Behaviour and Human Decision Processes*, Vol. 50, pp. 179 – 211. [online] [06.11.2016]. Available at <http://www.nottingham.ac.uk/~ntzcl1/literature/tpb/ajzen2.pdf>
2. Armitage C.J., Conner M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, Vol. 40(4), pp. 471 – 499.
3. Beck D.E., Cowan C.C. (2005). *Spiral Dynamics: Mastering Values, Leadership and Change*. Oxford: Wiley-Blackwell.
4. Briede B. (2009). Concepts, Research Aspects and Kinds of Competence, Professional Competence and Professionalism. In Proceedings of the International conference *Rural Environment. Education. Personality*, Vol 4. Jelgava: Latvia University of Agriculture, pp. 503 - 512. [online] [06.11.2016]. Available at [http://lufb.ltu.lv/conference/REEP/2009/Latvia-Univ-Agriculture\\_REEP-2009-proceedings.pdf](http://lufb.ltu.lv/conference/REEP/2009/Latvia-Univ-Agriculture_REEP-2009-proceedings.pdf)
5. Brizga D. (2015). Importance of the Educational Environment for Support of Education for Sustainable Development. *Journal of Teacher Education*, Vol. 25 (2), pp. 15 – 22.
6. Brizga D. (2016 a). Implementation Action of Pedagogical Activity of Labour Protection Specialists in Work Environment. In Proceedings of the International Scientific Conference *Society. Integration. Education. Personality*, Vol. 4. Rezekne: Rezekne Academy of Technologies, pp. 24-34.
7. Brizga D. (2016 b). Competence Development Model for Occupational Safety Specialists. In Proceedings of the International Scientific Conference *Engineering for Rural Development*. Jelgava: Latvia University of Agriculture, pp.774 – 780.
8. Cook-Greuter S.R. (2000). Mature Ego Development: A Gateway to Ego Transcendence? *Journal of Adult Development*, Vol. 7 (4), pp. 227 – 240.
9. Cook-Greuter S.R. (2004). Making the Case for a Developmental Perspective. *Industrial and Commercial Training*, Vol. 36 (7), pp. 275 – 281.
10. Cook-Greuter S.R. (2005). *Ego Development: Nine Levels of Increasing Embrace*. Wayland, MA, USA: Psychology Center. [online] [06.11.2016]. Available at <http://www.integralchurch.se/media/9levelsofincreasingembrace.pdf>
11. Daniellou F. (2006). Epistemological Issues about Ergonomics and Human Factors. In Karwowski W. (Ed.). *International Encyclopedia of Ergonomics and Human Factors* (2<sup>nd</sup> ed.). Vol. 3. London, New York: CRC Press, pp. 43 – 47.
12. Davis S.E., Dargusch J.M. (2015). Feedback, Iterative Processing and Academic Trust - Teacher Education Students' Perceptions of Assessment Feedback. *Australian Journal of Teacher Education*, Vol. 40. (1), pp.177 – 191. [online] [06.11.2016]. Available at <http://ro.ecu.edu.au/cgi/viewcontent.cgi?article=2547&context=ajte>
13. Eraut M. (1994). *Developing Professional Knowledge and Competence* (1<sup>st</sup> ed.). London, Washington: The Falmer Press.
14. Eraut M. (2004). Informal Learning in the Workplace. *Studies in Continuing Education*, Vol. 26 (2), pp. 247 – 273. [online] [06.11.2016]. Available at <http://old.mofet.macam.ac.il/iun-archive/mechkar/pdf/InformalLearning.pdf>
15. Ferguson P. (2011). Student Perceptions of Quality Feedback in Teacher Education. *Journal of Assessment and Evaluation in Higher Education*, Vol. 36 (1), pp. 51 – 62.
16. Glanz K., Rimer B.K., Viswanath K. (Eds.) (2008). *Health Behavior and Health Education: Theory, Research, and Practice*. (4<sup>th</sup> ed.). San Francisco, CA: Jossey-Bass.
17. Godin G., Kok G. (1995). The Theory of Planned Behavior: A Review of its Applications to Health-Related Behaviors. *American Journal of Health Promotion*, Vol. 11 (2), pp. 87 – 98.
18. Grant K.A. (2014). Comparing Student and Teacher Self-Assessment Practices. In Proceedings of the IDEAS: Rising to Challenge Conference *Werklund School Education*. Calgary: University of Calgary, pp. 159 – 168.
19. Hoare C. (Ed.) (2006). *Handbook of Adult Development and Learning*. (1<sup>st</sup> ed.). New York: Oxford University Press.
20. Pfaffenberger A.H. (2005). Optimal Adult Development: An Inquiry into the Dynamics of Growth. *Journal of Humanistic Psychology*, Vol. 45 (3), pp. 279 – 301.
21. Pfaffenberger A.H. (2013). Exploring the Pathways to Postconventional Personality Development. Doctoral Thesis. *Integral Leadership Review*, Vol.13 (3), pp.1-3. [online] [06.11.2016]. Available at

- <http://integralleadershippreview.com/9061-exploring-the-pathways-to-postconventional-personality-development/>
22. Preacher K.J. (2001). Calculation for the Chi-Square Test: An Interactive Calculation Tool for Chi-Square Tests of Goodness of Fit and Independence. [online] [21.10.2016]. Available at <http://www.quantpsy.org/chisq/chisq.htm>
  23. Ross J.A. (2006). The Reliability, Validity, and Utility of Self-Assessment. *Practical Assessment Research and Evaluation*, Vol. 11 (10), pp. 1 – 13.
  24. Ross J.A., Bruce C.D. (2007). Teacher Self-Assessment: A Mechanism for Facilitating Professional Growth. *Teaching and Teacher Education*. Vol. 23 (2), pp. 146 – 159.
  25. Smith M.C., DeFrates-Densch N. (Eds.) (2009). *Handbook of Research on Adult Learning and Development*. New York: Routledge.
  26. Smith J.R., Hogg M.A. (2008). Social Identity and Attitudes. In Crano W., Prislin R. (Eds.), *Attitudes and attitude change*. New York: Psychology Press, pp. 337 – 360.
  27. Wilber K. (1996). *A Brief History of Everything*. (2<sup>nd</sup> ed.). Boston: Shambhala Publications, Inc.
  28. Wilber K. (2000). *Integral Psychology: Consciousness, Spirit, Psychology, Therapy*. Boston: Shambhala Publications, Inc.
  29. Wilber K. (2007a). *Integral Spirituality: A Startling New Role for Religion in the Modern and Postmodern World*. Boston, London: Integral Books.
  30. Wilber K. (2007b). *The Integral Vision: A Very Short Introduction to the Revolutionary Integral Approach to Life, God, the Universe, and Everything*. Boston, London: Shambhala.
  31. Zohar D. (2004). Work Safety. In Spielberger C. (Ed.) *Encyclopedia of Applied Psychology* (1<sup>st</sup> ed.). San Diego, CA: Academic Press, pp. 719 – 724.
  32. Зимняя И.А. (2004). *Ключевые компетентности как результативно-целевая основа компетентностного подхода в образовании (Key Competencies as Effective Outcome - Targeted Basis of Competence Approach in Education)*. Москва: Исследовательский центр проблем качества подготовки специалистов. (in Russian)
  33. Холодная М.А. (1997). *Психология интеллекта: парадоксы исследования (Intelligence Psychology: Paradoxes of Research)*. Москва: Институт психологии РАН. (in Russian)
  34. Холодная М.А. (2002). *Психология интеллекта: Парадоксы исследования (Intelligence Psychology: Paradoxes of Research)*. Санкт-Петербург: Питер. (in Russian)

## Farmers' Educational Background, and the Implementation of Agricultural Innovations Illustrated with an Example of Land Consolidations

Małgorzata Dudzińska<sup>1</sup> PhD; Barbara Prus<sup>2</sup> PhD;

Stanisław Bacior<sup>3</sup> PhD; Cezary Kowalczyk<sup>4</sup> PhD;

University of Warmia and Mazury in Olsztyn, Poland<sup>1,4</sup>;

University of Agriculture in Krakow, Poland<sup>2,3</sup>

[gosiadudzi@uwm.edu.pl](mailto:gosiadudzi@uwm.edu.pl)<sup>1</sup>; [b.prus@ur.krakow.pl](mailto:b.prus@ur.krakow.pl)<sup>2</sup> [geomm@poczta.onet.pl](mailto:geomm@poczta.onet.pl)<sup>3</sup>  
[cezary.kowalczyk@uwm.edu.pl](mailto:cezary.kowalczyk@uwm.edu.pl)<sup>4</sup>

**Abstract:** In Poland land consolidation is carried out mainly in the southern part of the country. In three voivodships, namely Lubelskie Voivodship, Podkarpackie Voivodship and Małopolskie Voivodship, in the years 2003-2014 there were numerous land consolidations, over 20,000 ha in each voivodship. In another three voivodships (Warmińsko-Mazurskie, Zachodniopomorskie and Kujawsko-Pomorskie) there are no land consolidations, even though according to scientists from the Polish, every voivodship requires land consolidations processes. What is the reason for that situation? Both domestic and foreign research confirms that farmers with a higher level of education have been managing their farms more effectively. On the other hand, the development of the society's knowledge, education and qualifications is an important factor in the creation of innovations in production. Therefore, are the farmers' level of qualifications and education among the factors which affect the location of agricultural land consolidations? The analysis was carried out for the territory of Poland divided into voivodships (NUTS 2), and for Lubelskie Voivodship divided into municipalities (NUTS 5). The study was divided into the following stages: At the 1st stage of the study, the scope of implementation of agricultural land consolidation in Poland in the years 2004–2013 was determined. At the 2nd stage of the study, results of an analysis of the educational levels of agricultural farm managers in 2010 in selected research units were presented. At the 3rd stage, an analysis of the relationships between the educational level of agricultural farm managers and the implementation of agricultural land consolidations was carried out. In Poland, the level and the area of implemented consolidations is determined by level of agricultural education of agricultural farm managers. Research at the level of both the country and the municipalities of Lubelskie Voivodship confirm the fact that consolidations are more frequently implemented in the areas where agricultural farm managers have a lower educational level.

**Keywords:** land consolidation, education of farmers, rural areas, agricultural education.

### Introduction

The FAO classifies land consolidation impacts at three levels: first, there is the micro-level, where land consolidation aims focus on changing the farm structure and their direct environment so as to enable farmers to become more competitive. Secondly, there is the meso-level, where land consolidation has broader aims for changing rural communities by improving infrastructure (roads, irrigation and drainage systems, water and disposal installations), the natural environment, management of natural resources, landscape and, consequently, the spatial distribution of economic activities. At the macro-level, the focus is on changes which can positively affect the entire country by reducing the disparities between rural and urban areas, by ensuring more efficient and varied use of rural space, by improving the overall competitiveness of the agricultural and rural sector, by building trust between governments and inhabitants of rural areas, and by enhancing the land market (Demetriou, 2014).

According to A. Dacko (2006), the main goal of land consolidation should be to improve the quality of rural life, and not only to increase agricultural production. Land consolidation measures should be initiated to revive the countryside by encouraging continuous economic and political development of the local community, while protecting and rationally managing natural resources. The local community should participate democratically in land consolidation and in defining new forms of land use that make the most of the local potential. This is an activity which is every time different, specific, and having a significant impact on the agricultural space.

Currently in Poland, the choice of a location for the implementation of consolidation work not only depends on the farm land layout and land fragmentation but also on the farmers who apply for the implementation of consolidation work in the particular area. Social acceptance is the key prerequisite for

successful land consolidation. In Poland, land consolidation projects are initiated upon the request of more than 50 % of land owners or owners who have a legal title of more than 50 % of land in a given area.

In recent years, social capital has become an often referred to and even popular category among the factors which determine the development. The assumptions of the National Regional Development Strategy (NRDS) indicated that social capital is considered to be an important factor affecting the social and economic development of the country, and an element characterizing the citizens' living conditions (Kamiński, 2010).

According to M. Kłodziński and W. Dziun (2003), an answer to the question as to why certain municipalities are active and grapple with problems while the other stagnate, is not complicated. This is because the prerequisite for success is not the accumulated material resources but people and their entrepreneurship, a tendency to self-organization and cooperation, and the ability to select a group of leaders enjoying a good reputation and held in high esteem. The driving force behind the development is people, particularly local leaders i.e. commune heads, councilors, teachers, entrepreneurs and non-governmental organization activists. Social capital is the foundation of development, and without it, it is not possible to efficiently use the European Union funds earmarked for the local development of units (Wojewódzka, 2006).

Results of numerous studies and economic analyses allow one to draw an unequivocal conclusion that the quality of human capital whose key component is education is one of the main factors determining the development potential of the economy (Kołoszko-Chomentowska, 2008a).

Better educated people not only more readily accept the changing conditions but are also more inclined to search for and implement new solutions (Wiatrak, 2005).

Education is a factor determining a farmer's openness to the changing environmental conditions. Better educated farmers accept changes in the market more readily, and are more willing to respond to emerging challenges (Kołoszko-Chomentowska, 2008b). A higher educational level helps the society achieve a higher living standard.

Education has become the most important factor of social and economic development of rural areas. Modern agriculture, industry, trade and services will not operate efficiently in rural areas without personnel with high professional qualifications (Kłodziński, Rzeczkowska, 2000).

Although education is not tantamount to farmers' level of qualifications, it does prove the quality of human capital in agriculture (Nowak, 2009).

Therefore, are the farmers' level of qualifications and education as well as their age among the factors which affect the location of agricultural land consolidations?

## Methodology

The analysis was carried out for the territory of Poland divided into voivodeships (NUTS 2), and for Lubelskie Voivodeship divided into municipalities (NUTS 5). The study was performed in Lubelskie Voivodeship which runs the highest number of land consolidation projects in Poland.

The study was divided into the following stages.

At the 1st stage of the study, the scope of implementation of agricultural land consolidation in Poland in the years 2004–2013 was determined. At the 2nd stage of the study, results of an analysis of the educational levels of agricultural farm managers in 2010 in selected research units were presented. At the 3rd stage, an analysis of the relationships between the educational level of agricultural farm managers and the implementation of agricultural land consolidations was carried out. The final stage of the study is drawing conclusions based on the completed research.

The most complete data on the educational level of agricultural population are provided by agricultural censuses (in Poland, such a census was conducted in 2010). For the purposes of this article, given the availability of data on education, the study involved agricultural farm managers who are most frequently the recipients of consolidation work. According to the Central Statistical Office's definition, an agricultural farm manager is usually the same person as a user, because a person managing an agricultural farm is considered to be a natural person authorised by the owner/user of an agricultural farm to take, supervise or enforce decisions directly associated with production processes



(Characteristics of agricultural farms). The study involved agricultural farm managers conducting agricultural activities in Poland, with a tertiary agricultural education, secondary and post-secondary vocational agricultural education, and basic vocational agricultural education, who have taken an agricultural training course (Gwiaździńska-Goraj, Rudnicki, 2015). The research employed the following methods: analysis and synthesis of the literature, field inventory, and research from the group of spatial-statistical approaches. The study area covered Poland, and in particular the selected region.

## Results and discussion

Stage 1: The scope of the implementation of agricultural land consolidations in Poland in the years 2004–2013 and in Lubelskie Voivodeship

name of voivodship	the area of the implemented consolidation in 2004-2013 (ha )	The level of consolidations
Dolnośląskie	10873	the average level
Kujawsko-Pomorskie	0	very low level
Lubelskie	27438	high level
Lubuskie	4242	low level
Łódzkie	3613	low level
Małopolskie	20844	high level
Mazowieckie	3519	low level
Opolskie	1425	low level
Podkarpackie	20205	high level
Podlaskie	10955	the average level
Pomorskie	3396	low level
Śląskie	10208	the average level
Świętokrzyskie	1321	low level
Warmińsko-Mazurskie	0	very low level
Wielkopolskie	126	very low level
Zachodniopomorskie	0	very low level

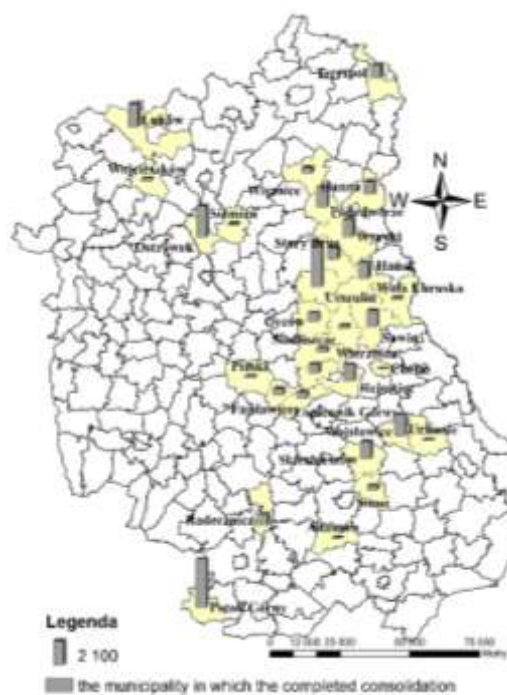


Figure 1. Implementation of agricultural land consolidation in Poland and Lubelskie Voivodeship in the years 2004–2013.

In Poland, however, the works are implemented with varied intensity (Dudzińska, 2015). From 2004 to 2013, agricultural land consolidations were implemented in Poland over an area of 118 thousand hectares. The highest number of them was implemented in 2013. This probably resulted from the fact that 2013 was the last year of the Rural Development Programme 2007–2013. The highest numbers of consolidations were implemented in Lubelskie, Podkarpackie, and Małopolskie Voivodeships – more than 20,000 ha each. In three other voivodeships, namely Warmińsko-Mazurskie, Zachodniopomorskie and Kujawsko-Pomorskie, no agricultural land consolidations were implemented (Figure 1). In spite of the implementation of consolidations over quite a large area, they only constitute 0.6 % of agricultural land in Poland. In Małopolskie Voivodeship, the contribution amounts to 2.26 % of the area of agricultural land, in Podkarpackie Voivodeship to 2.15 %, in Śląskie Voivodeship to 1.62 % and in Lubelskie Voivodeship to 1.56 %. In the remaining voivodeships, the contribution is lower than 1 % (Dudzińska, Kotlewski, 2016)

In Lubelskie Voivodeship, 13 consolidation measures (7,970 ha) were conducted in the years 2004–2006, and 39 consolidation measures (27,502 ha) in the years 2007–2013. Lubelskie Voivodeship comprises 191 rural municipalities, and land consolidation projects covered 31 municipalities. The highest number of four consolidation measures were carried out in the municipalities of Chełm and Urszulin each. The municipalities of Łuków, Ostrówek and Wojsławice performed three consolidation measures each.

The implemented consolidation objects feature various sizes, from 74 ha in the case of objects Łuszczów and Łuszczów kol. in the municipality of Uchanie to 2,101 ha for object Potok in municipality Potok

Górny. The largest area of consolidated land concerned measures implemented in the period 2004–2013 in municipalities of Potok Górny and Urszulin, and amounted to 4,202 and 3,863 ha, respectively.

Stage 2: Analysis of the educational levels of agricultural farm managers in 2002 and 2010 in selected research units.

## POLAND, BY VOIVODESHIPS (NUTS 2)

Table 1

### The structure of agricultural educational levels of agricultural farm managers in Poland, by voivodeships

name of voivodship	Percentage of managers with educational level (%)								synthetic indicator of general education
	tertiary	post-secondary	secondary vocational	general secondary	a total of people with secondary	basic vocational	primary and post-primary	incomplete primary education, and without education	
Polska 2010 r.	10,30	1,40	24,00	6,10	31,50	38,60	17,50	2,10	2,30
Dolnośląskie	11,90	1,50	28,50	7,20	37,20	35,80	13,30	1,80	2,44
Kujawsko-pomorskie	9,70	1,00	23,90	4,60	29,50	42,70	17,00	1,00	2,30
Lubelskie	11,40	1,90	25,90	6,10	33,90	34,60	17,80	2,20	2,34
Lubuskie	12,10	1,50	28,30	6,40	36,20	34,30	15,10	2,30	2,41
Łódzkie	9,50	1,20	22,80	6,00	30,00	39,30	19,30	1,80	2,26
Małopolskie	8,20	1,40	21,10	6,00	28,50	42,00	18,80	2,60	2,21
Mazowieckie	10,50	1,30	23,80	6,10	31,20	39,40	16,80	2,00	2,31
Opolskie	9,20	1,50	24,40	4,90	30,80	46,10	12,50	1,30	2,34
Podkarpackie	9,60	1,70	22,70	7,00	31,40	36,50	19,40	3,00	2,25
Podlaskie	11,90	1,60	25,50	6,30	33,40	31,80	21,00	2,00	2,32
Pomorskie	11,20	0,90	21,40	6,10	28,40	41,70	16,80	1,90	2,30
Śląskie	10,40	1,20	25,00	6,60	32,80	41,90	13,20	1,70	2,37
Świętokrzyskie	10,10	1,60	22,70	6,50	30,80	37,40	19,00	2,70	2,27
Warmińsko-mazurskie	13,50	1,50	23,80	5,70	31,00	33,00	21,00	1,70	2,34
Wielkopolskie	9,00	0,80	25,20	4,40	30,40	45,30	14,30	1,00	2,32
Zachodniopomorskie	15,60	1,40	25,50	7,10	34,00	32,20	15,80	2,40	2,45
min	8,20	0,80	21,10	4,40	28,40	31,80	12,50	1,00	2,21
max	15,60	1,90	28,50	7,20	37,20	46,10	21,00	3,00	2,45

The study used a synthetic indicator of the general education, whose values fall within the range of 1–4 points. (1 point – primary and junior high school education; 2 points – basic education; 3 points – secondary education; 4 points – tertiary education).

Only 2 % of agricultural farm managers have not completed primary education, or are not educated. 82.1 % of farmers have post-primary education. The group of farmers has the highest percentage of people with basic education (38.6 %) (Table 1). Secondary school graduates account for 30 % of agricultural farm users. In 2010, more than 10 % of agricultural farm users held a university diploma. On a regional basis, the differences between the farmers' educational level in particular voivodeships are not very large, and similar to the average structure for the country. The fewest managers with tertiary education are found in Małopolskie Voivodeship, and most of such managers are found in Zachodniopomorskie Voivodeship. Most agricultural farm managers with secondary education are found in Dolnośląskie Voivodeship, and the fewest such managers are found in Pomorskie Voivodeship. The synthetic indicator of general education is the lowest in Małopolskie Voivodeship, and the highest in Zachodniopomorskie Voivodeship.

In addition to general education, vocational skills also play an important role in achieving success in running an agricultural farm. At the same time, farmers with agricultural education obtain better production and economic results and, consequently, higher income than farmers with no vocational skills (Spatial differentiation of agriculture).



Table 2

**Agricultural education of agricultural farm managers in 2010**

name of voivodship	Percentage of farmers without agricultural education (%)	Percentage of farmers with agricultural education received at school (%)	Percentage of farmers who have completed an agricultural training course (%)
Polska 2010 r.	59,0	52,1	47,9
Dolnośląskie	56,6	47,5	52,5
Kujawsko-Pomorskie	44,1	67,0	33,0
Lubelskie	59,3	46,1	53,9
Lubuskie	59,1	56,5	43,5
Łódzkie	54,8	54,1	45,9
Małopolskie	67,8	42,8	57,2
Mazowieckie	55,5	58,2	41,8
Opolskie	52,7	52,0	48,0
Podkarpackie	70,0	37,5	62,5
Podlaskie	52,5	57,8	42,2
Pomorskie	49,1	60,7	39,3
Śląskie	68,5	40,9	59,1
Świętokrzyskie	67,3	41,0	59,0
Warmińsko-mazurskie	54,1	55,9	44,1
Wielkopolskie	45,9	65,2	34,8
Zachodniopomorskie	53,7	55,9	44,1

The highest percentage of farmers with agricultural vocational education are found in municipalities of the Wielkopolska region, and in Kujawsko-Pomorskie and Pomorskie Voivodeships (Table 2). Having analyzed farmers' vocational education preparing them for work at a farm, it can be observed that out of 41 % of farmers with vocational qualification, 52 % were educated at schools, which implies that they have completed an agricultural school at a post-primary level. The other 48 % of farmers have obtained their vocational qualifications outside the school i.e. by only receiving an agricultural training (Głębocki, 2014).

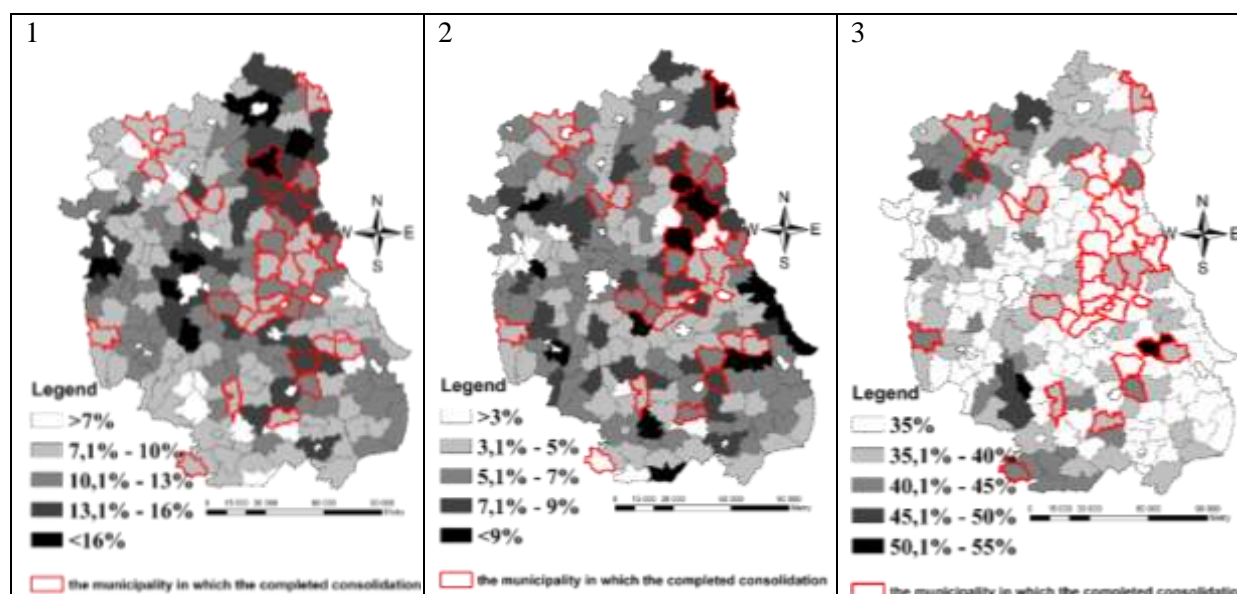
**LUBELSKIE VOIVODESHIP DIVIDED INTO MUNICIPALITIES (NUTS 5)**

Figure 2. Agricultural farm managers with general education: tertiary (1), secondary (2), and basic vocational (3) in 2010.

The highest percentage of farmers with tertiary education is found in 7 municipalities of Lubelskie Voivodeship. An analysis of the secondary educational level of farm managers, the highest percentage

of such farmers is found in 15 municipalities. Within more than 50 % of municipalities, over 35 % of managers have vocational education (Figure 2), and most frequently these are people without agricultural education (Figure 3).

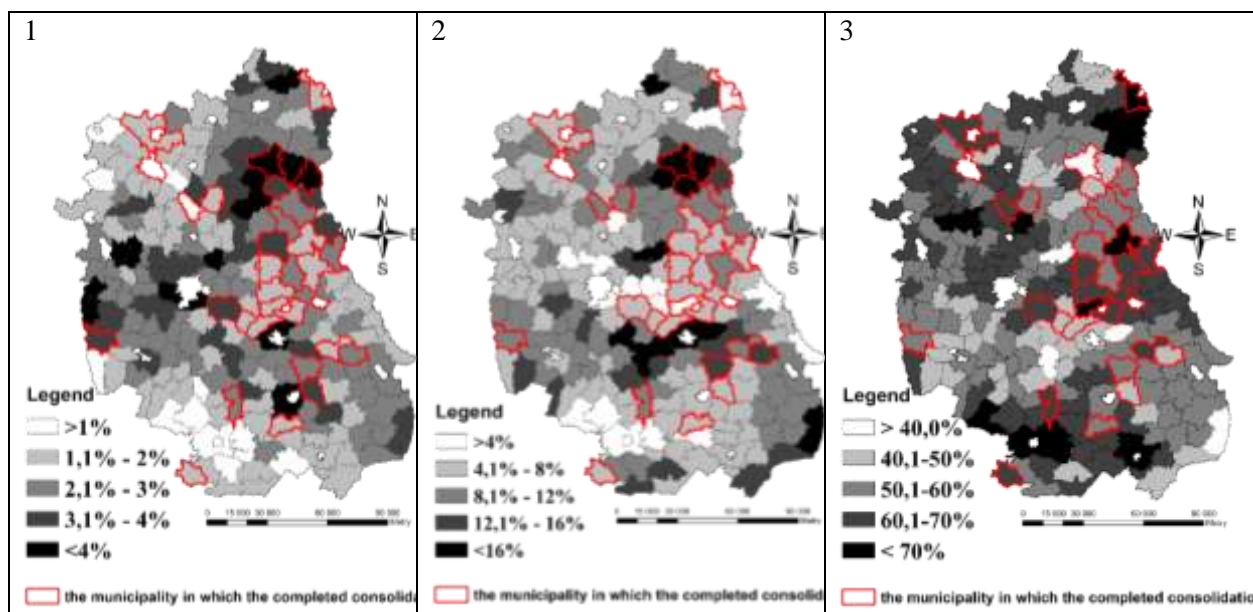


Figure 3. Agricultural farm managers with agricultural education: tertiary (1) and secondary (2), and without agricultural education (3) in 2010.

Stage 3: Analysis of the relationships between the educational level of agricultural farm managers and the implementation of agricultural land consolidations.

#### POLAND, BY VOIVODESHIPS (NUTS 2)

At this stage, a coefficient of correlation between the educational levels (general and agricultural) of agricultural farm managers, and the area and level of implemented consolidations was determined (Tables 3, 4).

Table 3

Correlation matrix – general educational level of managers

Variable	The area of the implemented consolidation in 2004-2013 (ha )	The level of consolidations
higher education studies	-0,213	-0,314
secondary education	0,174	0,167
basic vocational	-0,198	-0,126
synthetic indicator of general education	-0,247	-0,292

Table 4

Correlation matrix – agricultural educational level of managers

Variable	The area of the implemented consolidation in 2004-2013 (ha )	The level of consolidations
Percentage of farmers without agricultural education (%)	0,577	0,693
Percentage of farmers with agricultural education received at school (%)	-0,632	-0,743
Percentage of farmers who have completed an agricultural training course (%)	0,632	0,743

A relationship was found between the area and level of the implemented agricultural land consolidations and the educational level of agricultural farm managers. No relationships were found between the level and area of consolidations and the general educational level of agricultural farm managers.

## LUBELSKIE VOIVODESHIP DIVIDED INTO MUNICIPALITIES (NUTS 5)

In order to determine the relationships between the educational level of agricultural farm managers and the implementation of agricultural land consolidations, an average educational level was adopted for the municipalities of Lubelskie Voivodeship, and for municipalities in which consolidation work has been conducted (Figures 4, 5). Educational levels were set for general and agricultural education. In order to draw conclusions, a level of the synthetic indicator was adopted for particular types of education. The synthetic indicator has a value falling within the range of 1–5 points (1 point – the lowest level of the tested education, 5 points – the highest level of education). The obtained values of the synthetic indicator are presented in brackets in the diagram 4 and 5. The horizontal axis shows the percentage of managers in the total number of farm managers.

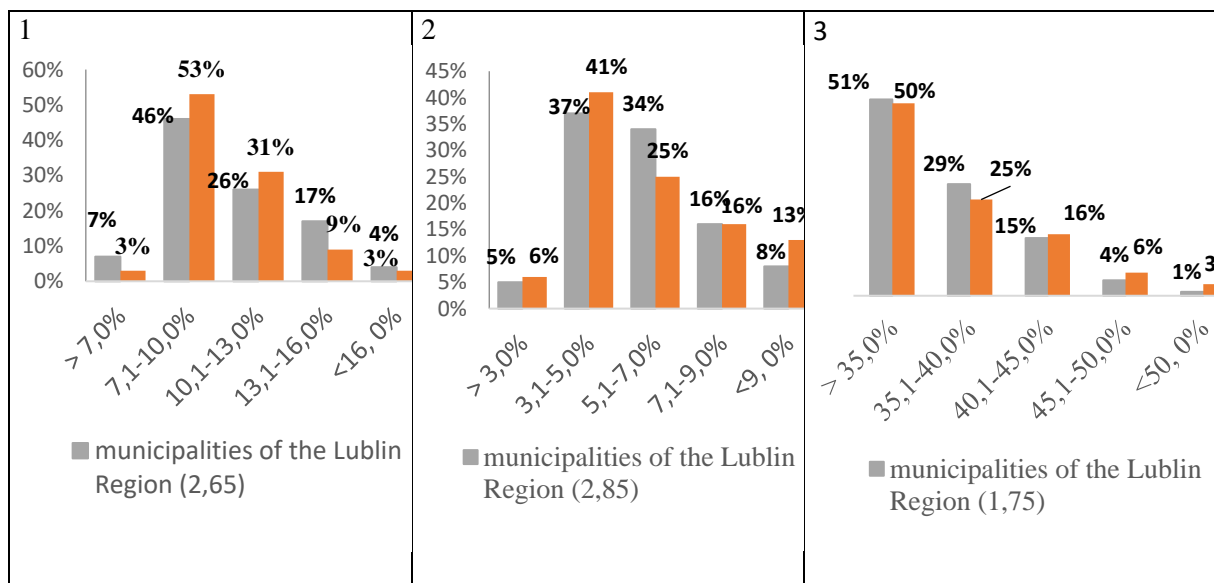


Figure 4. Agricultural farm managers with general education: tertiary (1), secondary (2), and basic vocational (3) in 2010.

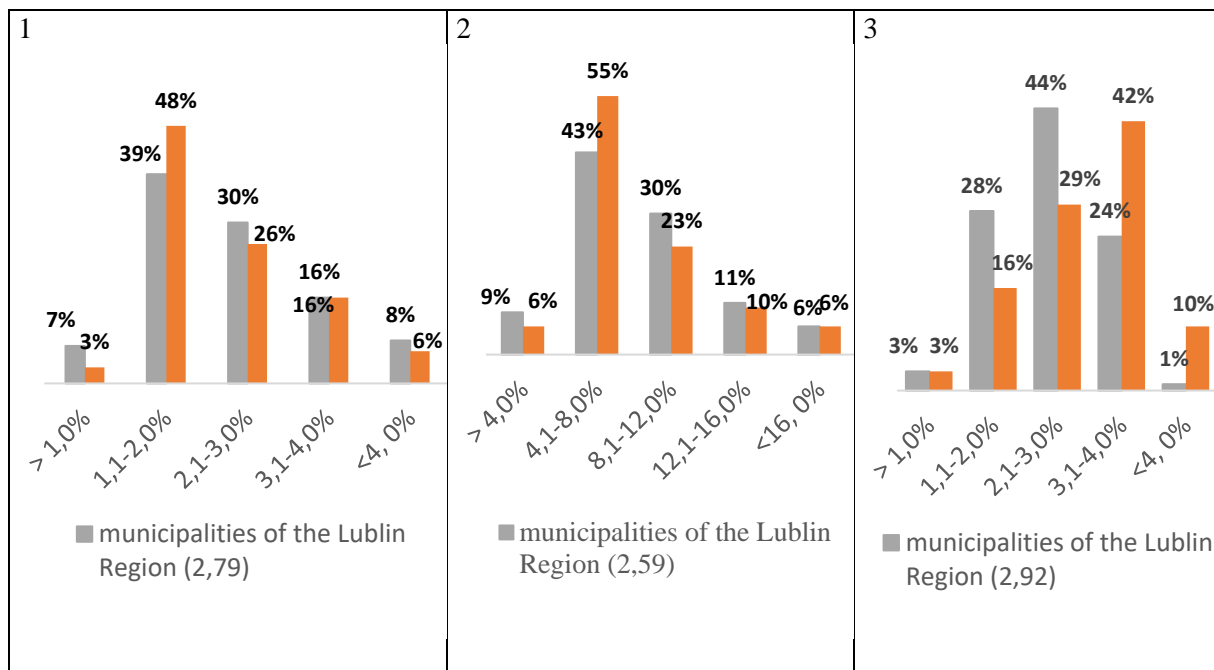


Figure 5. Agricultural farm managers with agricultural education: tertiary (1) and secondary (2), and without agricultural education (3) in 2010.

Agricultural farm managers in the municipalities in which consolidations have been implemented were characterized by a lower synthetic indicator of tertiary general and tertiary agricultural education than

the average in municipalities for the voivodeship under study. Municipalities with implemented consolidation objects were characterized by a higher percentage of farmers with general vocational education and without agricultural education.

### Conclusions

- In Poland, the level and the area of implemented consolidations is determined by level of agricultural education of agricultural farm managers.
- A negative, rather strong correlation between the tertiary educational level of agricultural farm managers and the level and the area of implemented consolidations was obtained, which may indicate an inverse relationship between these variables.
- Research at the level of both the country and the municipalities of Lubelskie Voivodeship confirm the fact that consolidations are more frequently implemented in the areas where agricultural farm managers have a lower educational level.
- Results of the study allow the authors to draw a conclusion that the study needs to be extended to include an analysis of factors determining the farmers' behaviours understood e.g. in terms of social activity.

### Bibliography

1. Dacko A. (2006). Tworzenie warunków do rozwoju terenów wiejskich poprzez scalanie gruntów – aspekt teoretyczny (Creating Conditions for Development of Rural Areas through Land Consolidation – Theoretical Aspect). *Infrastruktura i Ekologia Terenów Wiejskich*, Vol. 2(2), pp. 29 – 39.
2. Demetriou D. (2014). *The Development of an Integrated Planning and Decision Support System (IPDSS) for Land Consolidation*. Switzerland: Springer International Publishing.
3. Dudzińska M. (2015). Potencjał uwarunkowań przestrzennych gospodarstw w gminach województwa dolnośląskiego, w których zrealizowano scalenia gruntów rolnych (The Potential of Spatial Parameters of Farms in Rural Areas and the Land Consolidation Measures: Case Studies in Lower Silesia). *Acta Scientiarum Poonorum Administratio Locorum*, Vol. 14(4), pp. 7 – 20. (in Polish)
4. Dudzińska M., Kotlewski L. (2016). Relations Between the Process of Land Consolidation and Socio-Economic Conditions in Municipalities in Lower Silesia. *Acta Geobalcánica*, Vol 2(1), pp. 45 – 53. DOI: <http://dx.doi.org/10.18509/AGB.2016.05>
5. Głębocki B. (2014). *Zróżnicowanie przestrzenne rolnictwa. Powszechny Spis Rolny 2010 (Spatial Differentiation of Agriculture. Agricultural Census 2010)*. Warszawa: Główny Urząd Statystyczny. (in Polish)
6. Gwiaździńska-Goraj M., Rudnicki R. (2015). Struktura wykształcenia rolniczego kierowników gospodarstw rolnych w Polsce. Analiza czasowa i przestrzenna zjawiska (The Structure of Agricultural Education Managers' Farms in Poland. Analysis of Temporal and Spatial Distribution and Selected its Conditions). *Acta Scientiarum Poonorum Administratio Locorum*, Vol. 14(3), pp. 7 – 19. (in Polish)
7. Kamiński R. (2010). Rola kapitału społecznego i instytucjonalnego w procesie rozwoju obszarów wiejskich (The Role of Social and Institutional Capital in the Development of Rural Areas). In M. Stanny, M. Drygas (red.) *Przestrzenne społeczno-ekonomiczne zróżnicowanie obszarów wiejskich w Polsce*. Warszawa: Wyd. IRWiR PAN, pp. 157 – 179. (in Polish)
8. Kłodziński M., Dziun W. (2003). *Aktywizacja wiejskich obszarów problemowych (Stimulating Activity in Rural "Problem" Areas)*. Szczecin, Warszawa: IRWiR PAN, KROWIOGŻ AR, pp. 17 – 18. (in Polish)
9. Kłodziński M., Rzeczkowska M. (2000). Rozwój przedsiębiorczości wiejskiej w krajach Unii Europejskiej – wskazówki dla Polski (The Development of Rural Entrepreneurship in Countries of European Union - Tips for Polish). In *Rozwój przedsiębiorczości w warunkach integracji z Unią Europejską*. Warszawa: PAN, Akademia Rolnicza w Szczecinie. (in Polish)
10. Kołozko-Chomentowska Z. (2008a). Kwestia czynnika ludzkiego w rolnictwie (Human Factor Issue in Agriculture) *Acta Scientiarum Poonorum Oeconomia*, Vol. 7(4), pp. 87 – 95. (in Polish)
11. Kołozko-Chomentowska Z. (2008 b). Wykształcenie ludności rolniczej jako determinanta rozwoju rolnictwa (Socio-Cultural Development's Conditions of Direct Sale of Agricultural Products). *Zeszyty Naukowe SGGW Ekonomia i Organizacja Gospodarki Żywnościowej*, Vol. 67, pp. 79 – 85. (in Polish)

12. Nowak A. (2009). Kwalifikacje rolników czynnikiem rozwoju gospodarstw rolnych (Farmers Qualifications as the Factor Influencing Rural Farms Development). *Acta Scientiarum Polonorum Oeconomia*, Vol. 8(3), pp. 107 – 116. (in Polish)
13. Wiatrak A. P. (2005). Kapitał ludzki w procesie zmian rolnictwa polskiego (Human Capital in the Process of Changes in Polish Agriculture)., In Proceedings of the International Scientific Conference about Agriculture and Food Economy in the year after the Polish accession to the European Union, *Problemy rolnictwa światowego*, Vol. 13, Warszawa: Warsaw Agricultural University, pp. 394 – 402. (in Polish)
14. Wojewódzka A. 2006. Znaczenie kapitału społecznego w rozwoju lokalnym (The Importance of Social Capital in Local Development). In M. Adamowicz (red.) *Samorządy i społeczności lokalne w zrównoważonym rozwoju obszarów wiejskich*. Warszawa: SGGW, pp. 167 – 174. (in Polish)

## Pedagogical Heritage of Atis Kronvalds (1837-1875)

Baiba Kalķe<sup>1</sup> Dr.paed.; Aīda Krūze<sup>2</sup> Dr.paed.

University of Latvia, Latvia

[baiba.kalke@lu.lv](mailto:baiba.kalke@lu.lv)<sup>1</sup>; [aida.kruze@lu.lv](mailto:aida.kruze@lu.lv)<sup>2</sup>

**Abstract:** The article is devoted to Atis Kronvalds – a teacher, public person, a member of the New Latvian movement, one of the most prominent Latvian personalities in the 19<sup>th</sup> century. We are celebrating A. Kronvalds 180 anniversary in 2017. The aim of this article is to analyze his pedagogical heritage. The main methodological approach is hermeneutic, and the research methods are sources and literature analysis. All his short, but active and creative life he has devoted to pedagogical work and education issues. Working in schools he has drawn to several essential conclusions, which he tried to implement in life. Firstly, teachers cannot and should not work alone, especially when Latvian pedagogy is making its first steps. Therefore A. Kronvalds organized the meetings of local teachers that have developed in first general conferences of Latvian teachers. Secondly, he cared a lot that there were textbooks that corresponded to the requirements of the particular time. Thirdly, as a practicing teacher he considered that the teacher was responsible for what was going on in the classroom and school not only to parents but also the nation. His works, articles, published reports and letters reveal important ideas in pedagogy that are rooted in the views of European Enlighteners and the experience gained in practical work at school. The article analyzes views and theoretical ideas of A. Kronvalds that are arranged in a definite system to give an insight into the initial stage of the formation of Latvian national pedagogy in which he played a leading role. The pedagogical legacy of A. Kronvalds is presented in the following fields: the development of pedagogical terminology and his thoughts about languages; working out the regularities between the subject of pedagogy science and upbringing; the link between school and society; the importance of parents in upbringing; working out the content and methods of a folk school; origins of adult education; pedagogy science as the theoretical foundation of teacher's profession.

**Key words:** Atis Kronvalds, Latvian national pedagogy, upbringing.

### Introduction

The analysis of the pedagogical heritage of Neo-Latvians reveals that it has been Atis Kronvalds who has contributed the most to the development of theoretical foundations of pedagogy during the second half of the 19<sup>th</sup> century and who has devoted all his life to practical pedagogical work. This has been acknowledged both by his contemporaries and historians of pedagogy in their publications. "The reflections and aspirations of all the most important pedagogical ideas of the Enlightenment are found in A. Kronvalds' works who has put them in practice in Latvian schools and the activities of national (folk) teachers" (Anspaks, 2003, 99). "A. Kronvalds' contribution to the theory of upbringing is significant" (Staris, 1991, 130). "We can with good reason consider A. Kronvalds as one of the most vivid developers of Latvian national pedagogy" (Staris, Ūsiņš, 2007, 189). This is the year of Atis Kronvalds - 180 years have passed since his birth therefore we consider it necessary to activate his pedagogical heritage.

In 1938 unveiling the monument to Atis Kronvalds in Sigulda, the minister of education at that time Augusts Tentelis has said: "It is a sacred duty of each nation to remember and pay deep respect to those men who have helped it obtain its self-esteem, wellbeing and a better situation among other nations whether it has been military, science, art, diplomacy or another field of activity. Showing respect and remembering can be done differently - from just remembering in one's thoughts to the most magnificent monument in the most visible form. Such remembering strengthens the nation, makes its mind alert creates noble determination and awakens the will for new ambitions. One of the most eminent and noblest men for our nation has been Atis Kronvalds" (Tentelis, 1938).

The aim of this article is to analyze Atis Kronvalds' pedagogical heritage.

### Methodology

The hermeneutic approach to the analysis of history sources has been applied in the article which includes the formulation of questions and fore-understanding, criticism of sources and the text, semantic analysis of the text, understanding the situation of the text's emergence, analysis of additional sources,



evaluation of syntactic means, search for the text structure, checking the argumentation used in the text, performing the hermeneutic circle from parts to the whole and revealing the social and culture context (Klafki, 1971). The study applies biographical approach to the analysis of historical sources and A. Kronvalds's life-span. Biographical approach follows the Belgian pedagogical historians' A. Van Gorp, F. Simon and M. Depaepe's theories of biographical approaches and methods used in social sciences (Van Gorps, Simons, Depaepe, 2015). Understanding of the interrelationships of historical age and personality is based on the valuable visions of the philosophers' and psychologists' of the era, which determine the kind of action and manifestation of the human nature in their life activities, denoted by the specific conditions of the historical period (Kūle, Kūlis, 1996; Karpova, 1994).

The sources used in the present article are collected works by Atis Kronvalds which helped to find the answer to the question how the pedagogical thought developed during the national awakening in the second half of the 19<sup>th</sup> century and how it was presented by works of A. Kronvalds, the teacher and the author of the most extensive pedagogical articles.

## Results and discussion

Atis Kronvalds was born in Liepāja district, in the tailor's family with six children. Supported by the pastor H. E. Katerfeld he attended Springer's private school in Durbe, then Liepāja district high school (1854-1857). He devoted most of the time to reading books. He could spend the whole night on them; if he felt sleepy he put his feet in cold water. He did not finish the school owing to several reasons – sense of freedom, love, the conflict with the teacher of religion and, as he put it: "I had no true interest and liking to learning on the terms of imposed 'needs' rather to follow one's will of trying and willing to achieve something" (Kārklīšs, Goba, 1936, 33). In 1858 A. Kronvalds got the right to work as a home teacher of religion, Latin, German and Russian languages and started working as a home teacher in Lithuania in Dr. Pfeffer's family – he himself described this times as "descending to hell" (the pain caused by love) and "resurrection", as he put it, because of successful self-education by reading the works of German classic authors, pedagogical works and the Lithuanian language (Baumanis, 1975). Dr. Pfeffer did not want his son to go to studies alone and therefore invited Atis Kronvalds to accompany him and thus, he had studied medicine for half a year in Berlin but had to leave studies due to the shortage of financial support.

At the age of 24 A. Kronvalds returned to Durbe and became the home teacher in the pastor E. Procktor's family. During that time he published a textbook "Mazā vācieša pirmais solis" (The First Step of the Little German) (1863) which he presented to his foster-father with "the reverence of heart and child's gratitude to the man who with all his heart helps to strive for true education" (Baumanis, 1975, 29).

Working in Durbe, A. Kronvalds came to the idea that teachers could not and should not work on their own, isolated, especially at the time when the Latvian national pedagogy was making its first steps. He organized the first meetings of Latvian teachers or "conferencettes"; started with only six teachers the meetings soon doubled. A. Kronvalds organized the book exhibitions for teachers to let them acquainted with the latest publications, to identify their missing knowledge so that they could prepare their own teaching materials. It became possible due to the activities of A. Kronvalds who had laid the foundations for the tradition of book exhibitions (called 'book tables'). A. Kronvalds, all through his pedagogical career, initiated different meetings of teachers that could unite and support teachers in their complicated work.

A. Kronvalds considered that teachers needed their own newspaper; he popularized this idea not only in Kurzeme but also among the teachers of Vidzeme by sending a letter to Vidzeme Teachers' conference in Valka in 1864. Even more, he urged teachers to establish a newspaper by which they could be able to talk about schools and teachers, about schooling, about teachers' meetings, about school books that have been written and still need to be written (Kronvalds, 1936).

In 1865 A. Kronvalds was enrolled at Tērbata University for pedagogical courses. During this time period he wrote the textbook "Der Unterricht in der Heimatskunde" (1867), (translated in Latvian in 1922 as "Dzimtenes mācība" (Motherland Studies)). During Tērbata period A. Kronvalds attended different teachers' meetings thus strengthening his views in modern pedagogy. He was interested in natural sciences, history, and psychology and especially in linguistics. In 1868 he received a certificate that allowed him working as the teacher of district schools (Baumanis, 1975). After receiving the certificate A. Kronvalds worked at Tērbata teachers' seminary. During this period, he communicated

with people who shared his views in Kurzeme and Vidzeme about raising the Motherland to an honourable position, polishing the Latvian language and strengthening the Latvian spirit.

In 1873 A. Kronvalds left the well-paid teacher's position in Tērbata and accepted the invitation of Piebalga community therefore he moved to Vecpiebalga and worked as a parish teacher till the end of his life. Here he established the classes in which he taught the Latvian, German and Latin languages, history, geometry and sciences. The classes started at the end of September with 13 pupils. There were neither maps, nor the globe, nor the library but in a short time these shortages were greatly eliminated by Pauls Vītolīšs, A. Kronvalds' pupil. "The first two weeks were difficult. We were used to sitting at our long school desks wherever each of us liked to. We had to sit straight and firm at A. Kronvalds' lessons. It was not allowed to lean back and waddle. Both hands had to rest on the table all the time; we had to look straight into his eyes and write only when he said: write!" (Kārklīšs, Goba, 1936, 121) The lessons passed in dead seriousness, silence and order. He had expressed his serious attitude to the teaching/learning process also in several letters. Out of lessons A. Kronvalds had been joyful; he liked to joke and pupils remembered him smiling only twice during the lessons. In winter once a week A. Kronvalds organized "merriment evenings" for his class with singing, making music and talking. These meetings were attended not only by pupils but also by their relatives, thus he involved also the community in the work of school; each participant paid a rouble to support the school library. They discussed scientific issues, learned about the ancient Greek history in these evenings; in spring they went outside to Piebalga hillocks to explore plants and insects.

The year 1873 in Latvian culture is mainly connected with the first General singing festival but it is equally important for Latvian national pedagogy because this is the year of the first General Latvian teachers' conference. It was attended by some 200 people and A. Kronvalds was elected its leader, his deputy was J. Bētiņš, the music teacher of Irlava teachers' seminary. This allowed A. Kronvalds addressing teachers of the territory of Vidzeme and Kurzeme on regular bases to urge them unite because he considered the uniting of Latvians the foundation of the national awakening.

The conference agenda included issues about the development of singing, the child's physical and intellectual development, the preparing of textbooks and orthography issues. However, the key success was uniting of Latvian teachers, the increasing of their self-esteem. The first conference passed the decision to organize the second conference in 1874. The attitude of German nobility and clergy was negative to such an outcome of the conference. A. Kronvalds wrote in his letter to teacher J. Bētiņš before the conference: "Let God help us prepare better for the second conference than was it possible for the first one" (Kronvalds, 1936, 142).

A. Kronvalds was a competent leader of meetings. It had been recognized by Mafīss Kaudzīte and other participants of the conference: "(..) two important qualities that can be seldom observed with other leaders of meetings have to be mentioned. Others when leading debates considered their duty only giving floor to speakers according to their turn and maybe observed that no speaker went beyond the boundaries of laws and politeness otherwise they could speak what they wanted. (..) A. Kronvalds, in his turn, did not allow the debater to deviate even a step from the subject under the discussion and when it was thoroughly treated then he presented the core of the bias in a special thesis or sentence and thus the listeners got a clear message of what had been discussed and what they are advised to speak about" (Kaudzīte, 1994, 229-230).

Permission was not received for the 3<sup>rd</sup> conference and among the mentioned reasons was that "teachers started demonstrating stronger feeling for self-respect: they had clearly shown that there were no children who were unable to make steps by their own feet without outside guidance" (Kaudzīte, 1994, 232).

The first work in the parish school was to ensure discipline because nobody had actually listened to the old teacher. Atis Kronvalds was strict; he considered order to be the background of success. He had been harsh when pupils were untrue in words or actions. However, one February morning the news came about Atis Kronvalds' death, and "all pupils are weeping and sobbing like the ones who have lost forever not only all good and nice hopes but also something even greater, their spiritual father" (Kārklīšs, Goba, 1936, 124).

### **A.Kronvalds' contribution to pedagogical theory**

Although in his short life A. Kronvalds has not written fundamental theoretical works in pedagogy, his works, articles, published reports, letters and essays reveal significant for pedagogy ideas that are rooted



in the views of European enlighteners and the experience gained in working at school. The article offers an insight into A. Kronvalds' pedagogical views and theoretical ideas that are arranged into a certain system in order to ascertain the origins of the formation of Latvian national pedagogy in the second half of the 19<sup>th</sup> century.

### **Developing pedagogical terminology and thoughts on languages**

A. Kronvalds has contributed much for improving the Latvian literary language and this has facilitated also the establishment of the pedagogical terminology that is the indicator of the development of any science. Following the linguists' conclusion that no one has surpassed Atis Kronvalds in the art of using short, snappy and in most cases very original neologisms; it has to be stressed that since the time of A. Kronvalds' activities notions that he had developed have taken a stable place in the and for the science of pedagogy, as well as for school practice: education, means, pencil, character, subject, development, action, history (in Latvian) and many other.

A. Kronvalds had frequently spoken and written about the importance of the Latvian language in educating the Latvian nation. This relates with the requirement voiced by Neo-Latvians that teaching in school has to take place in the mother tongue, that language has to be cared for because the language is the true guarantee for the development of culture. For instance, in his article "Vārdiņš par mūsu valodas piekopšanu" (A Word about Caring for our Language) he emphasises "(...) we acknowledge the weight and the need of the language of itself; (...) one has to keep to the language which they (children and adults) understand, which serves them as the true tool for exercising their mental strength," and he urges: "Then let us exercise also our language in schools as it really becomes and is our necessity" (Kronvalds, 1937, 511 – 512).

However, as the writing "Tautiskie centieni" (National endeavours) shows, A. Kronvalds did not immerse into narrow local patriotism but pointed also at the necessity of foreign language knowledge in education and science. Writing about the national teachers' seminaries he emphasised: "(...) the mother tongue must be the dominating. But it does not mean that it has to be the only dominating one. The studies of the German and Russian languages in our Latvian seminaries will bring different benefits to a teacher in later everyday life and therefore, if only it is possible, the languages have to be learnt diligently" (Kronvalds, 1936, 114). A. Kronvalds indicates in the foreword of the textbook "Mazā vācieša pirmais solis" (The First Step of the Little German): "(...) it is true and great foolishness if one thinks that a person who wants to stay a Latvian should not learn other languages(...) This is a very praiseworthy thing to learn (also) other languages as soon as it is possible because the Latvian language does not reach so far in the world because the piece of land where it is spoken is small" (Kronvalds, 1937, 596).

### ***Development of regulations about the subject of pedagogy science –upbringing***

There are the following the most important problems of upbringing and solutions in Atis Kronvalds' works:

1. Upbringing is presented as the means of the personality development with the help of which "it is possible to achieve true humanity" (Kronvalds, 1936, 175). A. Kronvalds is convinced that "knowledge alone does not make us neither cleverer nor more decent, nor even more virtuous" (Kronvalds, 1936, 190). He points out the necessity of socialization saying: "People are not created to live in their own solitary loneliness. People have to and need to live in cooperation or communities..." (Kronvalds, 1936, 175). A. Kronvalds has paid attention also to the history of pedagogy writing about upbringing as adopting the experience of previous generations.
2. The link between school and community/society has been revealed: "Thus we see that a good school does not exist either somewhere in the air or in some separated isolation rather it has grown closely together with life and the nation (...) School has to build a more spacious house of education and upbringing on the foundations that parents have laid in the hearts and minds of their children..." (Kronvalds, 1936, 184). Kronvalda Atis addresses the power of example which is so significant in pedagogy and points out that "the folk school is followed by the broad school of life. School, a good school can contribute both to decent upbringing of children and useful teaching (...) but unfortunately schools are not able to complete everything" (Kronvalds, 1936, 186).
3. Parents' role in upbringing has been substantiated: "There is a greater power in parents' hands in children's upbringing than schools have"; "What children have absorbed in their father's home they take with them as mental inheritance for all their life" (Kronvalds, 1936, 13) — such and similar

ideas are found in many of Kronvalds' works. For several times he has also pointed benefits of cooperation for the family and school: "Parents, sending their children to school, do not stand aside from their children's upbringing and teaching; therefore, first of all, school has to take a similar road with the parents, do the same work, namely, both would be striving to reach the same aim to bring children to humanity" (Kronvalds, 1936, 186).

4. Thoroughly developed trend of upbringing that relates to the tendencies of national awakening and the increase of self-esteem in the second half of the 19<sup>th</sup> century — facilitating the love to Motherland. Seven tools of upbringing are substantiated in the article "Tēvzemes mīlestība" (Love to Motherland): knowing one's Motherland; history of the Motherland; respecting and caring for the mother tongue; teaching to keep to the good traditions of forefathers, the spirit of community; holding in respect the most honest sons of the Latvian nation; teaching of religion has to be the blessing of love to Motherland (Kronvalds, 1936).

### ***Establishment of the content of teaching/learning methodology in folk schools***

The care of Neo-Latvians about practicing the Latvian language as the language of instruction and upbringing activate the national spirit; therefore A. Kronvalds emphasised these endeavours to improve the content of education in accordance with the progressive pedagogical ideas of the world and needs put forward by life itself. Atis Kronvalds has managed to do much also in this field. He has included a special section in his article "Kāds vārds par mūsu tautas skolām" (Some Words on our Folk Schools): "What should be taught in folk schools" — the mother tongue, writing, calculation and geometry, nature science, earth description or geography, history or the world stories, singing. He also gave comments regarding each school subject on what, how and why should be taught (Kronvalds, 1936, 195-221).

For instance, one of the aims of teaching the mother tongue is the following: "Pupils are to be taught to write their thoughts in such a way that all writing corresponds to the language rules and that the thoughts are clearly understandable to everyone" (Kronvalds, 1936, 208); on singing — "Thus singing restrains our hearts, our minds from evil thoughts and urges towards good, decent thoughts; nice singing serves people as the source of joy and blessing in life" (Kronvalds, 1936, 221).

A good example of the textbook is "Dzimtenes mācība" (Motherland studies). A. Kronvalds has substantiated the necessity of this school subject— the objective of Motherland studies is to introduce the comparative observation of simple geographical phenomena and to consolidate this activity with exercises, training, and tasks from geometry that have to be supported and strengthened with the help of drawing. A. Kronvalds' approach is put like this: ensuring the links among separate school subjects, as well as the ability to search for and find appropriate teaching/learning methods (Kronvalds, 1936, 142).

How to teach? Answers to this question can be found in several works written by A. Kronvalds. An obvious example is presented by the methods of teaching the Motherland studies: "Connect studies with the basis that is accessible to pupils. (..) teach descriptively! (..) Teach in such a way that every subject and each piece of ideas is the foundation for pupil's further more complete development. (..) Aspire to this and try to take pupils along with you so that they in their thoughts and deeds with the help of Motherland studies reached independence! (..) Of all the things the teacher of Motherland studies himself must have thorough knowledge of the Motherland" (Kronvalds, 1936, 162-171).

A. Kronvalds' idea about the educative potential of teaching cannot be replaced by mechanical cramming. He expresses the view that every teacher must achieve such a quality when children would reach understanding of what they learn, do it consciously; that educative learning would promote not only their intellectual development but also refinement of aesthetical feelings.

### ***On problems of pedagogical psychology***

A. Kronvalds has paid his attention to the problems that later became the research field of pedagogical psychology. He has grounded the necessity to explore the child's nature, the development of abilities and taking into consideration the child's individuality. A. Kronvalds writes about the child's "fantasy activity", "awakening and maintaining their interest in learning", "the course of learning and teaching that is appropriate to the child's mental abilities, development and rules of order" (Kronvalds, 1936, 161).

A. Kronvalds makes teachers pay their attention to the fact that every child is different, how important it is to understand it, why to do this; and reminds: “(..) you are entrusted human souls, other people’s children; first, be able to find the necessary foundation before you start building the house” (Kronvalds, 1937, 373).

A. Kronvalds in the article “Palīdzies sev pats” (Help Yourself) gives an insight into the importance of the man’s self-education problem — “individual’s help one-selves” by indicating that “help from outside can (..) reduce one’s own inability, activate strength for a number of times while the help from inside always turns out to be a strengthening thing” (Kronvalds, 1937, 305). A. Kronvalds’ conviction that teachers and parents’ assistance in the personality formation process is necessary but their work will be in vain if the child himself/herself had not promoted the intellectual development. He reveals his view on the “soul and spirit” as well as sense organs in the articles “Jutekļi” [Sense organs] (Kronvalds, 1937, 659-667), “Cilvēka iekšējais un ārējais veids” (Man’s Inner and Outer Mode) (Kronvalds, 1937, 636-642).

### ***The origins of adult education***

There is not a substantiation of adult education in the modern sense of this concept in A. Kronvalds’ heritage; however, much has been done in this field with his active participation: first libraries, reading unions are established, youth evenings are organized in the second half of the 19<sup>th</sup> century during which topical social and culture issues were discussed.

Teachers’ conferences that were organized on A. Kronvalds’ initiative became a place where the teachers could share their experience, appraise practice outcomes, and get acquainted with the latest textbooks and materials.

One of the tasks put forward for school was — “the school must build its own broader space of teaching and upbringing and it has to prepare its pupils so far that when they leave the school they are ready to enter the broadest school of life” (Kronvalds, 1936, 184).

### ***Setting requirements for the Latvian folk (national) teacher***

A. Kronvalds has written not only how “important, powerful and successful” is the teacher’s work but has also substantiated the core requirements for the teacher: he has to be well prepared, educated; he has to love his work, work with ardour; the teacher has to work on fulfilling the topical needs of the people; he has to know profoundly the language of his people, his country and its history; another important task is - to know his learners, to promote their self-awareness. “Schools are built everywhere, everyone needs and deserves well-prepared school masters or teachers,” A. Kronvalds writes and popularizes Tērbata Teachers’ seminary (Kronvalds, 1937, 674 – 678) which, according to his opinion, ensures the best teacher education because “some shilly-shallying person or dabbler cannot be appointed a master for performing such important and hard work; it needs the power and strength of a thoroughly and properly educated man” (Kronvalds, 1937, 399); “diligently taught, fully employed teacher who has admitted that he works for the wellbeing of the nation” (Kronvalds, 1936, 195). Speaking about the national teachers’ seminaries in Valka and Irlava, he emphasizes that “... each seminary student has to, possess, firstly, his knowledge and skills in the language in which he will have to teach his learners later in life, and, secondly, he has to be well prepared practically to work as a teacher” (Kronvalds, 1936, 114 – 115).

In 1868, A. Kronvalds in his letter “Cienītam amata biedram Tauriņam” (To the Honorary Fellow Master Tauriņš) writes: “Therefore it will be very useful that sharing brotherly love day in and day out we address loudly each other: wake up, stand up, work! Such calls will refresh the idle, energize the weak, strengthen and encourage the strong” (Kronvalds, 1937, 614). Let these words and A. Kronvalds’ pedagogical heritage in general make us – today’s teachers - stronger and more confident!

### **Conclusion**

Atis Kronvalds’ whole short life has been devoted to pedagogical work. The Neo-Latvians’ conviction and the experience gained in pedagogical work have served as a background for the substantiation of his pedagogical ideas that confirm the beginnings of Latvian national pedagogy in the second half of the 19<sup>th</sup> century. The analysis of A. Kronvalds’ pedagogical articles and his life activities confirms a significant milestone in the development of pedagogical thought, that contributed to the revival of the Latvian national teachers who in their turn initiated teachers’ rallying to cooperation, strengthening their self-confidence and the development of education. This was an important step

towards the establishment of the Latvian University in 1919 where pedagogy became an academic discipline and has been developed since then as an independent science.

### Bibliography

1. Anspaks J. (2003). *Pedagoģijas idejas Latvijā (Ideas of Pedagogy in Latvia)*. Rīga: RaKa (in Latvian)
2. Baumanis A. (1975). *Pa Kronvalda Ata pēdām. Latvijas skautu prezidenta ģenerāļa Kārļa Goppera fonds (Following the Steps of Atis Kronvalds. The Foundation of the President of Latvian Scouts General Kārlis Goppers)*. (in Latvian)
3. Karpova Ā. (1994). *Personība un individuālais stils (Personality and Individual Style)*. Rīga: LU (in Latvian)
4. Kaudzīte M. (1994). *Atmiņas no tautiskā laikmeta (Memories of the National Awakening Period)*. Rīga: Zvaigzne ABC (in Latvian)
5. Kārklīšs K, Goba A. (1936). *Kronvalda Atis dzīvē un darbā. Latvju izcilus darbinieki. (Kronvalda Atis in Life and Work. Outstanding employees of Latvia)*. Rīga: A. Raņķa izdevniecība (in Latvian)
6. Klafki W. (1971). *Hermeneutische Verfahren in der Erziehungswissenschaft (Hermeneutical Methods in Education Science)*. In Klafki W. (Hrsg.) *Erziehungswissenschaft (Bd.3.)*. Eine Einführung (Funk-Kolleg Erziehungswissenschaft). Frankfurt am Main: Fischer-Taschenbuch-Velag, S. 126 – 153 (in German)
7. Kronvalds A. (1937). *Kopoti raksti I (Collected Articles I)*. Sast. A. Goba. Rīga: Valters un Rapa (in Latvian)
8. Kronvalds A. (1936). *Kopoti raksti II (Collected Articles II)*. Sast. A. Goba. Rīga: Valters un Rapa (in Latvian)
9. Kūle M, Kūlis R. (1996). *Filosofija (Philosophy)*. Rīga: Burtnieks (in Latvian)
10. Staris A., Ūsiņš V. (2007). *Izglītības un pedagoģijas ideju attīstība Latvijā līdz 1900. gadam. (Development of Education and Pedagogical Ideas in Latvia until the Year - 1900)*. Rīga: RaKa (in Latvian)
11. Staris A. (Red.) (1991). *Pedagoģiskā doma Latvijā līdz 1890. gadam. Antoloģija (Pedagogical Thought in Latvia until 1890. Anthology)*. Rīga: Zvaigzne (in Latvian)
12. Tentelis A. (1938). *Latvija un latvju tauta ir mūsu augstākā manta. (Latvia and Latvian people are our Highest Wealth)*. *Latvijas Kareivis*. 1938.g. 28. jūnijā Nr.141. (in Latvian)
13. Van Gorps A., Simons F., Depāpe M. (2015). *Ovīdija Dekrolī biogrāfijas izaicinājums: kolektīvās biogrāfijas gadījums? (The Challenge of Writing Ovide Decroly's Biography: A Case for Collective Biography)*. Sast. A. Krūze. *Laikmets un personība*, Nr. 15. Rīga: RaKa (in Latvian)

## Interactive Methods as the Way of Forming the Research Competence of Future Math Teachers

**Bakhytkul Kaskatayeva** Doctor of pedagogy  
Kazakh State Women's Teacher Training University, Kazakhstan  
[Kaskataeva@yandex.ru](mailto:Kaskataeva@yandex.ru)

**Abstract:** The article presents the use of interactive methods as the way of forming the research competence of math students. Contemporary school is needed for a creative educator and researcher who have innovative teaching methods. The training situation analysis of the future math teachers shows that their teaching methods give undue attention to the formation of research competence among the students that does not correspond with society's demands for a competent specialist. The aim of the study is to develop methods of using the interactive methods for forming research competence for the math students in the "Math Teaching Methods" training course. The following research techniques were used in the study: theoretical analysis of a problem, literature review, observation, questioning and testing. As a result, the students showed independence performing their project works on the topic of "Developing mathematical literacy of 5-9 grade pupils", "The project method as the way of forming research abilities among the pupils" and actively participated in the scientific conferences. The technique of using interactive methods such as the case-method, the analyses of practical situations and their application in the practicum of the "Math Teaching Methods" (MTM) course had been developed during the study.

**Keywords:** research competence, professional activity, interactive methods, university education.

### Introduction

Today there is a new challenge for the higher schools - to educate a new generation of pedagogues and researchers which will be focused on the needs of innovative knowledge economy. Therefore it is vitally important to teach students the techniques of obtaining and processing the scientific information by their independent research practices within the competence approach. N.A. Nazarbayev (Назарбаев, 2012) stresses that institutions of higher education should not be limited to their educational functions. It is critical for them to develop their research activities actively.

In that context, forming of research competence in the field of future teachers' work is one of the most important goals of all modern teacher education programmes.

The current transition to the common European Education System places a responsibility on pedagogical science on forming a competent teacher and researcher who will have the technique for development the students' cognitive ability and their creative use of the knowledge acquired in any education and real-life situations. The future teachers with creative thinking skills are likely to be educated through the involvement of their students in the academic research work. However, the level of research skill formation in the conditions of pedagogical university has not fully met the current requirements and the tasks for modernization of higher pedagogical education. The targeted formation of research competence among the students requires implementation of modern teaching methods and modes of study in the educational process of higher educational institutions.

However, the common educational practice does not facilitate a full motivation of the research orientated training of the future teachers which will result in the need for searching the ways for implementation and development of the new methods of forming their research competence.

That way, there is a contradiction between the necessity to use innovative math teaching methods and a lack of the appropriate studies of development and implementation the new techniques for forming the research competence of the future teachers in pedagogical university conditions. The contradiction revealed creates the problem of developing and implementing interactive teaching methods for the formation of research competence among the future math teachers. The interactive teaching techniques are presented in the different fields of the scientific knowledge and studied by a great many of pedagogues and psychologists. However, the methods for formation the research competence of the students is understudied which explains *the timeliness* of the topic.

*The subject of the study* is the usage of interactive methods for forming research competence of the math students. *The objective of the study* is to substantiate how to develop a methodology for the use of interactive methods for formation the research competence among the math students during the "Math Teaching Methods " (MTM) course.

### Methodology

To achieve this, the following hypothesis was put forward: if the training in the MTM will be conducted in accordance with the established methodology based on the use of interactive methods, then research competence of students will increase and provoke the development of mental activity of students.

The experimental work was organized with the aim of forming of research competence of students (third year). The educative process was carried out with the help of Educational-Methodical Complex (EMC) which provided the abstracts of lectures, questions for testing and conducting examinations and the tasks for each student's practical and independent work. There were 18 students in the experimental group and 21 students in the control group. In both groups the classes were taught by traditional and innovative methods in the computer classroom with an interactive whiteboard. The educational conditions were created in the experimental group for forming the research abilities of the students. The results of the students' independent works (SIW) and testing were assessed each odd week of the semester, the rating control was held on the 7th and 14th week and an exam was conducted on the 15th week. Further the students took their first teaching practice at schools. The educational work of the students during their practice was evaluated every week.

At the end of the teaching practice the practice teachers were interviewed and questioned on their educational work and their formation of research abilities among the pupils and after that there was a final conference. To show the effectiveness of using interactive teaching methods after three semesters the students' works were examined during their teaching practice. The students together with their pupils solved non-routine tasks and showed their ability to arrange the learning activities of the students. The students from the experimental group showed the higher results in their test review works and their skilful ability to prepare essays, reports and presentations and to write non-routine tasks. The students performed their project works on the topic of "Developing the math literacy among the 5-9 grade pupils" (Group 1) and "The project method as the way of forming the research abilities among the pupils" (Group 2) which gave the specific results and are ready for their implementation into the teaching practice. The result of the first project was the applied problem systems prepared by the students and of the second one was making reports by the students at the conferences. The students actively participated in the scientific conferences. Yergeshova Aidana, the 4-year student, took the 1st place at the International Conference - 2016.

### Results and discussion

The research works of G.T. Aleksanova and S.A. Aleksanova (Алексанова, Алексанова, 2016), V.S. Yelagina (Елагина, 2012), A.M. Derkach (Деркач, 2012), G.N. Lobov (Любова, 2000) are devoted to the study of research competence. Theoretical understanding of the competence approach is reflected in the works of V.N. Vvedensky (Введенский, 2003), E.F. Zeyera (Зеер, 2003) and A.V. Hutorskoy (Хуторской, 2003). The works of M.A. Choshanov (Чошанов, 1996) are devoted to the problem of modular education. G.L. Ilyin (Ильин, 2009) investigates the project-based education technology and S.N. Lukashenko (Лукашенко, 2011) the topic of multilevel preparation of the economics experts. The analysis of scientific and methodological literature has shown that the techniques used for math teaching give inadequate attention to the problem of forming the research competence, and there is not a methodology developed for its formation yet.

The research activity of the students must be oriented to the formation of their research abilities and skills as a universal way for the reality awareness, development cognitive motivation, acquisition of knowledge about the methods and techniques for understanding the reality and getting new knowledge which will be significant for the students (Алексанова, Алексанова, 2016).

The research competence is defined by us as a complete, integral characteristic of a future math teacher's personality which is shown through his/her readiness to take an active creative research position towards the teaching math activity and which also allows obtaining the best research results (Kaskatayeva,

Tastanova, 2015). Also the pedagogical conditions for forming the research competence among the future math teachers of pedagogical university were previously revealed (Kaskatayeva, 2014).

This paper presents the interactive teaching techniques as the way of forming the research competence for the future math teachers.

The research methods of the students in a higher teacher education system can be considered as a system of interaction between teachers and students with account of their abilities and inclinations which is aimed at forming and developing the research competence.

Over the past ten-year period the interactive forms and methods of teaching math in MTM course have been widely used at the Department of Mathematics of Kazakh State Women's Pedagogical University. From the variety of interactive teaching forms and methods developed in the field of didactics there can be selected those that best take into account a specific character of the subject and can be successfully applied in formation the research competence among the students.

The interactive teaching techniques include interactive lecturing, the case-method (analysis of the specific practical situations), the method of projects, didactical and role-playing games, discussion and the method of "brainstorming."

Interactive forms of education are the dialogic teaching method; group work; joint activities of the students aimed at solving the tasks of non-deterministic nature; and laboratory work (Выготский, 1982).

Interactive (where «inter» - mutual and «act» - to act) teaching model is carried out in conditions of constant, active interaction between the students themselves and their teacher and environment and provides for some joint activities of the students. In this case a student and a teacher are the equal members of an educational process. Note that in the recent research interactivity is also thought of as an interaction with a computer and via a computer (Давыдов, 1996). An interactive teaching model creates a significant change of a teacher's role in the learning process, from the source of knowledge and information the teacher turns to an assistant and advisor, organizer and a training coordinator.

The content-related part of a subject learnt as well as a form of giving an assignment is also undergoing a change. The focuses in formulation the purposes to fulfill the tasks and solve the problems are moved from consolidating the knowledge and skills obtained towards setting the new goals and consideration the new problems (Деркач, 2012).

Depending on the content studied there can be used the round table method, the competitions of practical works with their further discussion, trainings, process and situation simulation, discussion of special videos, including a record of own actions, methods with the use of computer technology and a skillful combination of traditional and innovative tools, forms and methods of education.

The choice of forms and methods of education used in the learning process depends, first of all, on the level of personal qualities and abilities of a group's members, activity of the group, the specifics of a particular course and a content of an educational material.

G.N. Lobova identifies two levels of the research competence: the Educational Research Competence (ERC) and the Scientific Research Competence (SRC). G.N. Lobova believes that the educational research competence of the students should involve a student's ability to set up the problem, analyzing the information existing in advance, and conditions, methods and planning the pedagogical experiment (Лобова, 2000).

The scientific research competence also includes the students' active efforts which enable them to acquire necessary creative research skills and is completed with a student independently solving the tasks and problems already developed in science.

A.K. Markova defines three main component parts in the structure of educational work, including 1 - motivational oriented component (orientation in the environment, setting goals and objectives and the emergence of motives); 2 - performing component (implementation) and 3 - control and the estimated component (result) (Маркова, 1994). In the first stage a teacher formulates the educational goals and objectives (in any type of activity), in the second stage he/she chooses the relevant pedagogical tools for their implementation and in the third stage he/she analyzes and makes assessment of his/her own actions.

In formation of students' research competence an activity approach to learning becomes of particular relevance and involves the formation of students' research thinking abilities in providing of motivational incentive and orienting research activities.

*The activity approach* is focused on the mastery of approaches to a professional activity. The personal activity approach is based on the psychological works of L.S. Vygotsky (Выготский, 1982); A.N. Leontiev (Леонтьев, 1983); S.L. Rubinstein (Рубинштейн, 2002) and V.V. Davydov (Давыдов, 1996). A person in these works is considered as the subject of the activity which determines his/her personal development through his/her own activity and communication.

An activity is characterized by the common essential properties and a single scheme where the presence of the required components such as purpose, motive, content, methods and the results provides the result sought by a student.

According to the personal activity approach the purpose of education is formed in terms of the activities where the problem is a situation in which you need to achieve a certain goal; an activity itself is the process of achieving the goal, and an action is the way of carrying out the activities (Мамыкина, 2009).

A personal activity approach on the practical and laboratory sessions of the "Math Teaching Methods" (MTM) course is implemented when the action is one of the case-study interactive methods. A case study (in English - Case-study, in German – Fallstudie) is analysis of specific practical situations. This method means transition from knowledge accumulation method to an activity or practice-oriented method with regard to the real activity of a manager to the approach. The purpose of this method is teaching students to analyze information, identify key issues, choose alternative solutions, evaluate them, find the best option and formulate the action programs.

In the analysis of specific situations it is particularly important to combine individual work of students with the problem situation and a group discussion of the proposals prepared by each member of the group. This allows the students to develop their group or teamwork skills, which expands the opportunities for solving common problems within the educational subjects studied. As a result of the analysis and discussion the students are able to develop analytical and planning skills. Development of practical situations may be in two ways, including 1- based on the description of real events or actions or 2- on the basis of artificially constructed situations.

While studying a particular situation and analyzing a case study a student must understand the situation, assess it and determine if there is a problem in it and what is its core, and determine his/her role in solving the problem and develop his/her own rational strategy.

A case study method can be divided into the following stages: preparatory, introductory, analytical and final.

In the first stage a teacher specifies goals and develops an appropriate "particular situation" and scenario of a lecture.

While developing it is important to consider a number of strong requirements:

- an example of situation must be a logical extension of the theoretical course content and meet future professional needs of today's students;
- the complexity of situation must include the level of students' opportunities and create the desire to cope with it and experience the feeling of success;
- the content must reflect the real professional situations not fictional events or facts;
- students must be provided with clear instructions on a particular situation.

In the second stage students are involved in a lively discussion of a real professional situation. Since the analysis of a particular situation is teamwork then it is preferable to solve the problem in the form of open discussions. The important point is the development of cognitive activity and adoption of other students' solutions without any prejudice. This allows the students to develop their ability to analyze work-related situation and make their own decisions.

The use of a case study method in a practical of the Math Teaching Methods (MTM) course is shown in the following example.



Topic: "Teaching maths through the problems"

I. Preparatory stage. Review the topic of "Polygon area".

II. Introductory stage. Introduction to particular situations.

Check a SIW task: a student must independently create and solve the applied problems taken from his/her life experience and choose the most relevant among them. The problem of constructing a separate house for the student called Lunara has been chosen.

The research thinking process is drawn according to the following flowchart: a situation  $\Rightarrow$  a problem  $\Rightarrow$  modelling solutions  $\Rightarrow$  getting a solution.

Description of the problem No.1. A workman was offered a task to cover the roof of the house which was under the construction (Figure 1). Taking the measurements, the workman calculated that the roof's height ( $h$ ) is 4 m, the length of the house ( $a$ ) is 12 m, the width of the house ( $b$ ) is 6 m and the length of the ridge ( $c$ ) is 6 m. Please, calculate the amount of tiles (Figure 2) required for the task accomplishment (in sq.m.).

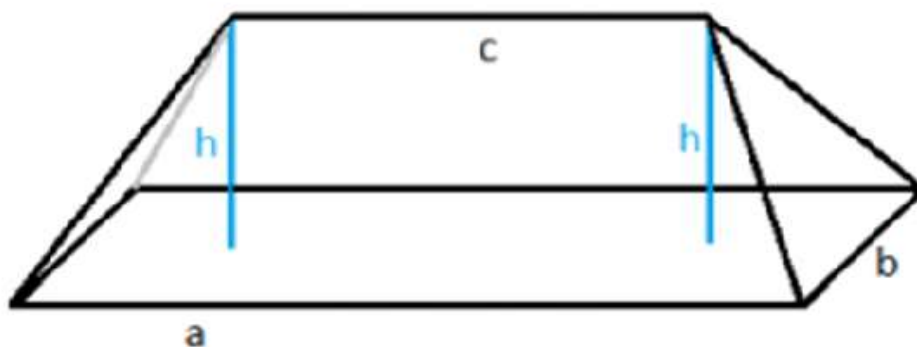


Figure 1. A house roof's model.



Figure 2. House roof under the construction.

Motivational incentive activities and orienting research activities are arranged for students. The problem introduces the formation of the students' ability to research thinking. Thus will result in the following:

- involvement of students in a live discussion of a real life situation;
- identification of problem signs (the problem must be stated clearly, precisely and in a concise way);
- group discussion of the terms and scenario of solving the problem.

How can the discrepancy between the calculating area of an unusual shape and the amount of the tile be adjusted? Are there any missing elements in the problem's statement? It was revealed that the tile size was absent. Supposed that the tile size is 0.8 m; 0,4m.

III. Analytical stage:

- to consider different tactics for solving the problem;
- alternatives and their justification.

*Problem solution.* As can be seen from (Figure 2), the roof of the house consists of two isosceles trapezoids and two isosceles triangles that is needed to know the formula for determining the area of trapezoid and a triangle. To calculate the areas is needed to insert additional symbols (Figure 3).

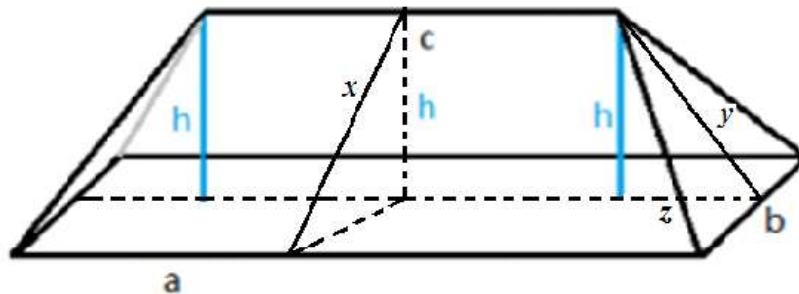


Figure 3. The solution of the house roof under the construction after the measurements.

The trapezoid's area:

$$S_m = \frac{a+c}{2} \cdot x \quad (1)$$

The triangle's area:

$$S_{\Delta} = \frac{b \cdot y}{2} \quad (2)$$

First, find  $x$  by virtue of Pythagoras' theorem:

$$x = \sqrt{h^2 + \left(\frac{b}{2}\right)^2} \quad (3)$$

By Pythagoras' theorem also find  $y$ ,

$$\text{where } y = \sqrt{h^2 + z^2}, \quad z = \frac{a-c}{2} \Rightarrow y = \sqrt{h^2 + \left(\frac{a-c}{2}\right)^2} \quad (4)$$

With the formulas (1) and (2) calculate the areas of trapezoid and the triangle by inserting numerical values from the problem's statement:

$$S_{mp} = \frac{12+6}{2} \cdot \sqrt{4^2 + \left(\frac{6}{2}\right)^2} = \frac{18}{2} \cdot \sqrt{16+9} = 9 \cdot 5 = 45 \text{ (m}^2\text{)};$$

$$S_{\Delta} = \frac{6}{2} \cdot \sqrt{4^2 + \left(\frac{12-6}{2}\right)^2} = 3 \cdot \sqrt{16+9} = 3 \cdot 5 = 15 \text{ (m}^2\text{)}.$$

Calculate the required volume of the tile in sq.m, it is necessary to calculate total area of the roof:

$$S_{\text{обш.}} = 2S_T + 2S_{\Delta} \quad (5) \text{ (m}^2\text{)}$$

$$S_{\text{обш.}} = 2 \cdot 45 + 2 \cdot 15 = 90 + 30 = 120 \text{ (m}^2\text{)}$$

If the tile size is 0,8m; 0,4m., then the amount of the tiles required is  $120 : (0,8 \cdot 0,4) = 375$ .

The answer is 120 m<sup>2</sup> or 375 roof tiles.

IV. Final Stage:

- analysis of the solution;
- initial objectives and feasibility of their implementation.

This problem is of topical and applied nature. Preparation and solution of this problem requires research actions, mathematical modeling and creative activities as a result of which the students will learn how to creatively use the knowledge acquired in any educational and life situations.

In the same manner, we have developed and implemented the other interactive methods of teaching math. So, from our observations and the lessons learnt we have concluded that the joint activity of the students in the process of their learning and acquisition of learning materials means that each individual

brings their own special contribution, and there is an exchange of knowledge, ideas and work methods between them. Moreover, it happens in an atmosphere of goodwill and mutual support which allows them not only to acquire new knowledge, but also develops their research skills. This is the way of developing the research abilities among the students and high school pupils through them as well.

Development of educational research competence is a necessary basis for the development of scientific research competencies. The indicators showing development of the research competence among the students of pedagogical university are their generated research knowledge and skills.

The positive results of the research conducted require carrying out *further* research activities in this direction, development, introduction of innovative methods and techniques into the other university math disciplines in order to jointly solve the problems and complete the experimental work.

## Conclusions

This article contains the technique of using interactive methods such as the case study method (analysis of the specific practical situations). For the first time the paper suggests using interactive methods in learning the MTM course to solve the problem of development the students' research competence. As a result of application the developed technique the students showed the independence when carrying out their project works named "Development of maths literacy among the 5-9 grades pupils " and the "Project method as the way of forming the research abilities among the students" which implementation gave a specific result that is ready for introduction into the teaching practicum. The first project resulted in the applied problem book prepared by the students for the development of scientific kind of thinking. The second project resulted in the reports and presentations delivered by the students at conferences and submitting the final results in the form of methodological recommendations. The students from the experimental group showed their independence, search skills and exploratory behavior while performing their individual tasks. They also took an active part in scientific conferences. Now it can be seen that the research activity was arranged for students in the practicum of the MTM course by using interactive teaching method. The students have not only acquired new and significant knowledge and the research skills but also the knowledge of the methods and techniques of understanding the reality. We came to the conclusion that the targeted use of interactive forms and training methods facilitate the development of research competence among the students as one of the leading competence in the structure of teacher's readiness to his/her professional work.

## Bibliography

1. Алексанова Г.Т., Алексанова С.А. (2016). Формирование исследовательской компетенции у студентов вуза в условиях перехода на новые стандарты обучения (Formation of Research Competence at Higher Education Institution for students in Conditions of Transition to New Standards of Training). *Концепт*, No. 3, 1-5 с. [online] [29.11.2016]. Available at <https://e-koncept.ru/2016/76028.htm> (in Russian)
2. Введенский В.Н. (2003). *Моделирование профессиональной компетентности педагога (Modeling of Teacher' Professional Competence)*. Москва: Педагогика школьная, 25 с. (in Russian)
3. Выготский Л.С. (1982). *Собрание сочинений (Collected Works)*. Проблемы Общей Психологии, Т. 2., Москва: Педагогика. (in Russian)
4. Давыдов В.В. (1996). *Теория развивающего обучения (The Theory of Developmental Education)*. Москва: ИНТОР. (in Russian)
5. Деркач А.М. (2012). *Компетентностный подход в среднем профессиональном образовании: риски подготовки некомпетентного специалиста (Competence Approach in Secondary Vocational Education: Risks of Training an Incompetent Specialist)* [online] [13.11.2016]. Available at <http://ecsocman.hse.ru/data/2012/07/13/1266645917/Derkach.pdf> (in Russian)
6. Елагина В.С. (2012). Формирование исследовательской компетенции в процессе профессиональной подготовки студентов педагогического вуза (Formation of Research Competence in the Process of Professional Training of Students of Pedagogical University). *Концепт*, No. 8, 26 – 30 с. [online] [11.08.2012]. Available at <https://e-koncept.ru/2012/12102.htm> (in Russian)

7. Зеер Э.Ф. (2003). *Психология профессионального образования (Psychology of Professional Education)*. (2-е изд.). Москва: Издательство Московского психолого-социального института. (in Russian).
8. Ильин Г.Л. (2009). О компетенции выпускников педагогических учреждений (About the Competence of Graduates of Educational Institutions). *Преподаватель XXI век*, No. 3(1), 40 – 48 с. (in Russian)
9. Kaskatayeva B.R. (2014). *Pedagogical Conditions for Forming the Research Competency in Future Teachers of Mathematics*. Proceedings of the International Scientific Conference Rural Environment, Education, Personality (REEP), Vol. 7, pp. 103 – 109. [online] [08.11.2016]. Available at <http://llufb.llu.lv/conference/REEP/2014/Latvia-Univ-Agricult-REEP-2014proceedings.pdf>
10. Kaskatayeva B.R., Tastanova J., Ergeshova A. (2015). Method of Projects as the Primary means of Forming Research Competence Undergraduates-mathematicians. *American Journal of Educational Research*, Vol. 3, (12B), pp. 26 – 30.
11. Лобова Г.Н. (2000). *Основы подготовки студентов к исследовательской деятельности (Basis of Preparation of Students for Research Activities)*. Москва: ИЦ АПО. (in Russian)
12. Леонтьев А.Н. (1983). *Избранные психологические произведения (Selected Psychological Works)*, Т. II. Москва: Педагогика. (in Russian)
13. Лукашенко С.Н. (2011) Развитие исследовательской компетентности студентов вуза в условиях многоуровневой подготовки специалистов (Development of Research Competence of Students in Conditions of Multilevel Training of Specialists). *Вестник Томского государственного педагогического университета*, No. 2, 100 – 104 с. (in Russian)
14. Маркова А.К. (1994). Подготовка будущих учителей к активной профессиональной деятельности в процессе изучения курса педагогики (Preparation of the Prospective Teachers for the Active Professional Work During the Study Course of Pedagogy). Автореферат кандидатских педагогических наук. Москва. (in Russian)
15. Мамыкина Л.А. (2009). Усовершенствование методической системы обучения математике в контексте профилизации средней школы (Improvement of Methodical Teaching Mathematics in the Context of the Profiling System of Higher School). *Вестник северного федерального университета в Архангельске*, No. 6, 162 – 166 с. (in Russian)
16. Назарбаев Н.А. (2012). «Казахстан-2050» стратегиясы (Strategy "Kazakhstan-2050"). Астана [online] [14.11.2017]. Available at [http://strategy2050.kz/page/message\\_text](http://strategy2050.kz/page/message_text) (in Kazach)
17. Рубинштейн С.Л. (2002). *Основы общей психологии (Fundamentals of General Psychology)*. СПб.: Питер, 210 с. (in Russian)
18. Хуторской А.В. (2003). Ключевые компетенции как компонент личностно-ориентированной парадигмы образования (Key Competences as a Component of More Person-Centered Paradigm of Education). *Народное образование*, No. 2, 58 – 54 с. (in Russian)
19. Чошанов М.А. (1996). Гибкая технология проблемно-модульного обучения (Flexible Technology of Problem-Modular Training). *Народное образование*, No. 2. (in Russian)

## (Self-) Development of Foreign Master's Degree Students' Intercultural Competence through Music Activity

Jolanta Lasauskiene Dr. paed.

Lithuanian University of Educational Sciences, Lithuania

[jolanta.lasauskiene@leu.lt](mailto:jolanta.lasauskiene@leu.lt)

**Abstract:** The trends in international development of higher education are best reflected by international openness. The process of study internationalisation necessitates globally engaged and interculturally competent music teacher education. The article deals with the peculiarities of developing professional intercultural competence of foreign Master's degree students (future music educators) through musical project activities. The paper aims to highlight the character of pedagogical impact integrating innovative learning activities and to reflect on features of improving foreign students' intercultural competence. The sample of the research, which was carried out in 2014-2016, consisted of 24 foreign (Chinese) Master's degree students, who chose studies at Lithuanian University of Educational Sciences (Music Education). The research was done applying several methods: the analysis of scientific literature and documents, students' written reflections and qualitative content analysis. The results of the qualitative research revealed that application of educational strategies related to development of intercultural competence of Master's degree students became very important. The most important strategies of development of intercultural competence, based on musical activities were highlighted and verified by an educational (music performance) project. It was determined that (self-) development of intercultural competence was largely affected by the internal factors, such as musical abilities, value-based orientations, artistic experiences and experience of cultural activity. The research revealed the possibilities of integrating intercultural competence, one of significant objectives of personality development, into the curriculum of music teacher education.

**Keywords:** intercultural competence, future music educator, educational project, music activity, university education.

### Introduction

**Relevance of the research.** The legal and political educational documents of the EU and Lithuania *Education and Training in Europe 2020* (Education and Training..., 2012), *Key Competences for Lifelong Learning* (Key Competences..., 2006), *The National Education Strategy for 2013 – 2022* (Valstybinė švietimo..., 2010) orient the process of education towards development of general competences. Intercultural competence, being an integral part of general competences, acquires different meaning and content in the professional context (Deardorff, 2015). The aforementioned competence is particularly significant to music educators evaluating current changes in global society and perception of culture and educational environment.

At present music educators have to be ready to communicate and collaborate in the multicultural society, to create intercultural relations as well as to conduct research on the existing educational environment, to critically evaluate and to creatively improve it from the perspective of cultural, artistic and educational needs. Musical art is considered to be a certain means of language and communication and the meaning of music is associated not only with the individual's personal experience but also with the cultural environment and context. Therefore, learning from other cultures and communication with different cultures are regarded as a very important factor in the formation of intercultural competence. As for the educational significance of intercultural competences of teachers, it is equally important to understand the opportunities of their development in contemporary higher education.

The main aspects of intercultural education embrace the necessity of learning about oneself as a cultural being, becoming aware of culture and its elements, culture-specific learning, development of adaptation to culture, and learning to learn (Wintergerst, McVeigh, 2011; Paige, Goode, 2009). The analysis of scholarly literature allowed to highlight the main levels of intercultural competence development: cognitive (knowledge and understanding of native and other cultures); emotional (attitudes, feelings, emotions experienced towards native and alien culture) and behavioural (application of knowledge, abilities, attitudes, cultural experience in various cultural contexts). In the field of educational science, attempts have been made to disclose the methodology of intercultural competence (self-)development



has been designed different tools for intercultural competence measurement and assessment have been created (Savvides, 2014; Williams, 2009).

Expression of intercultural competence within the context of teacher training has been analysed in the works by foreign and Lithuanian authors: purposeful intercultural education of college teachers has been investigated (Niculescu, Percec 2015; Navickienė, 2014), teachers' attitude towards intercultural competence expression has been analysed (Odag, Wallin, 2015; Norvilienė, 2014), preconditions for its (self-) development at university have been established (Mazlaveckienė, 2015; Krajewski, 2011), the possibilities of intercultural competence development using methods of experiential learning in a different cultural context (Gerulaitienė, 2013) have been explored. Such learning is the closest to real intercultural slash situations and problems, therefore these conditions are likely to result in development of skills, application of knowledge, and emotional reactions in the real context. The development of intercultural competence has been analysed in the context of internationalization of studies (Jon, 2013; Virgailaitė-Mečkauskaitė, 2011) and socio-educational factors determining teachers' intercultural communicative competence have been compared in the European context (Chodzkienė, 2012).

According to researchers, the constructivist paradigm and the applied strategies of experiential learning, problem-based learning, collaborative learning, reflexive learning and cognitive learning should be prioritised in the development of intercultural competence (Cushner, Mahon, 2009). However, scientific research revealed that in most frequent cases the development of intercultural competence is organised inconsistently, the choice of study subjects with foreign languages of instruction is poor, the number of lecturers able to deliver courses in foreign languages is small and methods of teaching and learning are rigid. One of the methods which guides the teaching approaches to the interactive way of learning is the *project method* (Mohedo, Bújez, 2014). According to B. Bitinas (2006, 171), teacher's professional activity embraces development of educational project and its practical implementation.

Despite the abundance of studies on intercultural competence, Lithuania lacks research in the influence of musical activities on development of professional intercultural competence of future music educators. Moreover, the specifics and development of intercultural competence of foreign Master degree students have not been broadly researched (Zhang, 2016). Similarly, there is not enough in-depth research on the opportunities of development of intercultural competences at universities through the project method. Though the need to develop intercultural competence in higher education is justified and comprehensively analysed, so far the questions of what kind of intercultural competence is necessary for the activities of a music educator and what content, structure, conceptions of its building should be appropriate for it, have not been clarified. The description of intercultural competence of music educators lacks not only the conceptual theoretical framework but also more widely applied examples of research methodology and practice.

**The problem of the research** is formulated as the following research questions:

- in what way and what impact the musical activity can exert on intercultural competence of future music educators (foreign Master's degree students) and to what extent this impact can be optimised?
- what are the possibilities of its (self-)development at university?
- what are the most important strategies (directions) connected with future music educator intercultural competence by means of musical activity?

**The object of the research:** peculiarities of developing intercultural competence of foreign Master's degree students in music activity.

**The aim of the research:** to reveal possibilities of (self-) development of intercultural competence of foreign Master's degree students – future music educators – applying the project method.

**Research objectives:**

1. To reveal the character of educational innovations promoted in musical projects, highlighting the perspective of development of intercultural competence.
2. To reveal foreign students' personal experience of intercultural competence and possibilities for the development at university.

3. To highlight the tendencies of future music educators' professional intercultural competence expression in educational project.

**Research methods:** analysis of scientific literature and documents, educational project, written student reflections, qualitative content analysis.

## Methodology

*Educational project in professional intercultural competence development.* The educational project was treated as an educational process based on a new (or relatively new, but relevant) idea, initiated by the researcher and implemented with common efforts of the researcher and process participants (Bitinas, 2006, 172). An educational project, being one of the key methods of academic cognition and education, is the one which makes it possible to test in practice, evaluate and ground new educational ideas.

Taking into consideration the fact that the origins of intercultural competence lie in the musical culture of a future music educator, which also embraces artistic activities, activation of culturally meaningful musical and concert activities (development of musical educational projects and their presentation for the communities of the university, city or country) as well as efforts to increase mastery (professional excellence) in music interpretation are likely to influence intercultural competence of foreign Master's degree students learning in Lithuania.

A music educator assumes both roles of own culture nurturer and conveyer of foreign culture. Evaluation of own musical culture in the context of another musical culture and communication with representatives of various cultures is of significance as well. This supplements personal experience of foreign students, their cultural judgement, develops their intercultural competence. Such an idea allowed to determine the direction of the educational (music performance) project and to organise the project of 18 months (Semester 1 to 3). The author of the article was a coordinator of the project. The educational (music performance) project aimed to foresee, to more precisely determine and to practically assess some strategies for development of intercultural competence of prospective music educators.

The following **strategies** for optimisation of influence of musical activity were chosen: a) *accumulation of music knowledge of own and other musical cultures*; b) *development of abilities to interpret and evaluate music within a different cultural context*; c) *stimulation of more meaningful cultural experiences*; d) *encouragement of students to reflect and self-assess their own activities* (Figure 1).

The educational project content was based on music performance project "*Intercultural Dialogue. Different Cultures – One World*", which established favourable conditions for linking studies in music and culture, for comparison different musical cultures from historical, social and cultural perspectives, for improvement of musical skills and abilities as well as induced students' self-involvement in the musical project activities. The project group students have prepared individual music performance projects (Lasauskienė, 2012). They were provided with a general theme only (music of Lithuanian composers M. K. Čiurlionis, B. Dvarionas, S. Vainiūnas) and each student could individualise it with regard to his/her opportunities and needs of artistic self-expression. The foreign students selected, performed and publicly presented their individual projects (in a project final concert). These enabled students to expand their knowledge of Lithuanian musical culture, to realise their own musical creative powers, to expand possibilities of cultured communication and collaboration as well as to apply their musical abilities and skills.

The intercultural competence was also developed in other study modules of Master's degree studies in Music Education ("Variety of World Musical Cultures", "Lithuanian Ethnic Music in the Context of World Cultures") but particular attention to it was devoted to it in the study module of Musical Expression (Piano, Singing). During rehearsals, educational and cultural trips attempts were made to create conditions for acquisition of experience related to (self-) development of intercultural competence in the process of both formal and non-formal education. Teacher-student cooperation was enhanced by partner-like performance at the final project presentation concert. The music performance project of the students was publicly presented to the academic community of Lithuanian University of Educational Sciences and in other concert halls of the country.

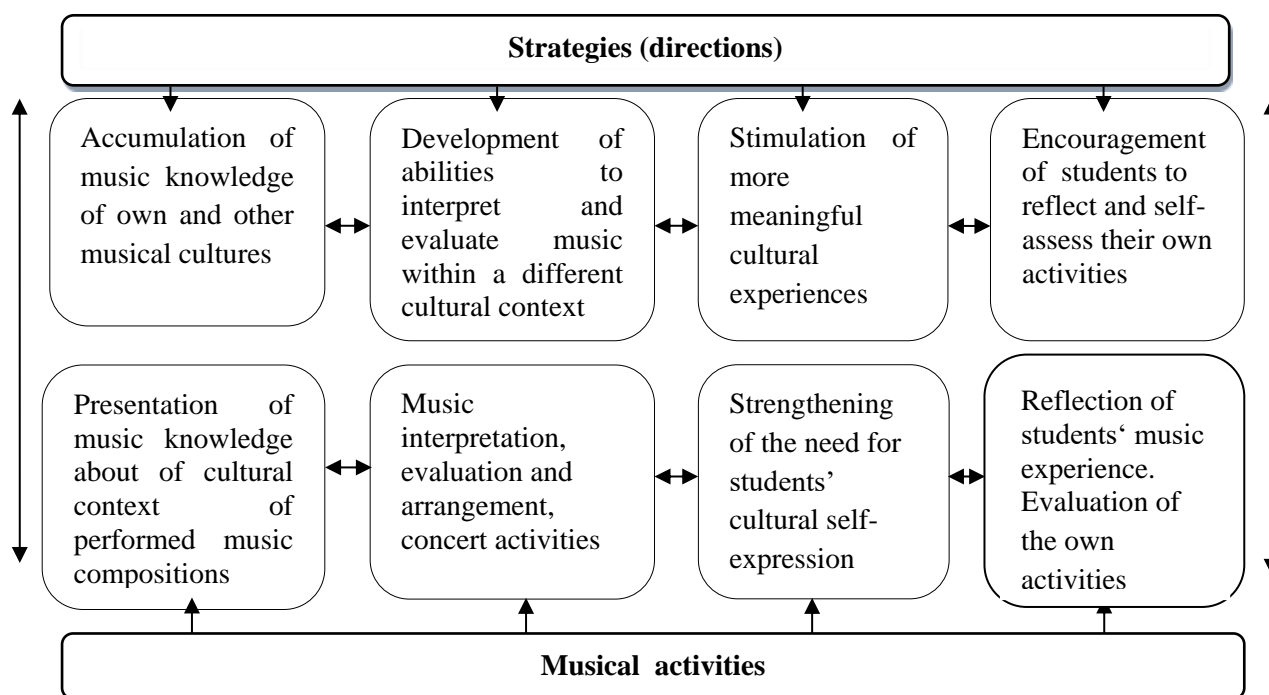


Figure 1. The strategies (directions) for optimisation of influence of musical activity on intercultural competence of future music educators.

**Participants.** The sample of the research consisted of 24 foreign (Chinese) Master's degree students (all future music educators), who chose studies at Lithuanian University of Educational Sciences (Music Education). Educational project was implemented from September 2014 to December 2015. The duration of the educational project was three semesters (Semester 1 to 3).

**Methods. Data collection.** Semi-structured reflection in writing (at end of the semester) was applied in order to analyse the personal experience of foreign students, to reveal possibilities and peculiarities of educating intercultural competence by applying the project method as well as to define and assess innovative learning activities and educational effect during the project integrated to the study programme of Music Education (Bolton, 2010). The students wrote reflections as responses to the provided open questions: *"What did I experience implementing the goals of the project? What personal meaning does intercultural competence have to me? What qualities of intercultural competence did I acquire, develop or further improve while preparing the musical project?"* The research participants were free to choose the number of such situations to describe and to provide specific examples.

**Data analysis.** The content of the written reflections was analysed on the basis of qualitative content analysis (Mayring, 2014). The analysis was aimed at distinguishing meaning units of categories and sub-categories. They are summarized in the table below.

## Results and discussion

Upon the analysis of the foreign students' reflections on intercultural competences developed during the project, three qualitative categories – accumulation of students' music experience, development of students' participation in cultural activity and personality (self-) development – were determined (Table 1).

In the category **"Accumulation of students' music experience"** three sub-categories were singled out: *presentation of music knowledge, development of the ability to interpret and evaluate music and stimulation of more meaningful artistic experiences*. According to the opinion of foreign Master's degree students learning in Lithuania, a music educator, who seeks to improve and successfully adapt in contemporary multicultural society, has *"to protect and nurture national culture"*, *"to accumulate knowledge of other countries"*, *"to learn cultural, academic and social life of other countries"*, *"to respect own national identity and that of other countries"*, *"to be interested in everything"*, *"not to retreat into oneself"*, *"to be inquiring"*. The participants in the research envisage a close link between the art of music performing and culture, therefore, the intercultural competence of a music educator is understood as a derivative of cultural competence (Berardo, Deardorff, 2012): *"interpreting the music*



by Lithuanian composers, I much better understand different cultural contexts". According to the foreign students, "intrinsic motivation", "a wish to improve" and "to continuously improve own intercultural competence" are of utmost importance.

Table 1

**Results of analysis of the foreign students' written reflections**

Category		
Accumulation of students' music experience	Development of students' participation in cultural activity	Personality (self-) development
Sub-category		
Presentation of music knowledge	Self-involvement in cultural activities	Stimulation of artistic self-expression
Development of the ability to interpret and evaluate music	Experience of cultural activity	Evaluation and improvement of own personal qualities
Stimulation of more meaningful artistic experiences	Experience of communicating with representatives of other cultures	Reflection and evaluation of own activities

The following sub-categories were singled out in the category "**Development of students' participation in cultural activity**": *self-involvement in cultural activities*, *experience of cultural activity* and *experience of communicating with representatives of other cultures*. It should be noted that participation in musical cultural activities is important to representatives of all occupations in music. However, it plays a specific role in the spread of intercultural competence of a music educator (Wang, 2016). Involvement in socio-cultural activities is linked with activities that focus on personal and professional needs: to improve musical abilities, to envisage unsuspected insights in musical activities, to share experience with others, to better understand oneself and environment, to envisage the links between cultures of native country and foreign ones, to perform significant educational roles. Master's degree students from abroad notice that "*interpretation of music compositions and participation in musical cultural activity (projects, events, concerts) as well as in educational trips in Lithuania, communication with students and teachers from other countries established an opportunity to learn Lithuania and its culture as if "from inside"*". Targeted establishment of educational conditions for real contact of foreign students with another culture (for example, encouragement of independent involvement of students into cultural activity), application of various strategies for learning the country seeking to integrate them into the process of cultural awareness of the country are likely to have an impact on intercultural competence of prospective music educators (foreign Master degree students).

The collected data reveal that application of the project method in the process of intercultural competence development is evaluated favourably: "*I really liked preparation of the thematic educational project "Intercultural Dialogue. Different Cultures – One World" and its preparation for community of university and city*"; "*project assignments (to independently choose and perform compositions by Lithuanian composers) were interesting and encouraged intercultural education in the real sense of this word*". It can be assumed that active concert activities encouraged students to get acquainted with musical culture of another country as if "from inside", i.e. through the experience of musical activity. The participants in the research ask for "*more musical cultural events, projects, educational trips*".

The person's affective evaluative attitudes should be considered the core component of intercultural competence as they determine transformations in the person's self-awareness and character of personal involvement and participation in the education process (Chodzkienė, 2012). The category "**Personality (self-) development**" contains three sub-categories: *stimulation of artistic self-expression*, *evaluation and improvement of own personal qualities* and *reflection and evaluation of own activities*. The educational policy organised in a targeted way allows to identify the highlighted influence of a positive emotional evaluative component of foreign students, which promotes students' openness to another culture: "*Having arrived here we kept whooping out of surprise: what blue sky and how vast it is here, what marvellous clouds, how much snow is here in winter, what abundance of forests and how few*

people!'. It can be assumed that learning another country occurs through the values internalised in foreign students' native culture, which enable them to link and compare values, attitudes and behaviour patterns of own culture with those of alien one as well as to discover and acknowledge differences (Wintergerst, McVeigh, 2011). The students evaluate their own personal qualities as requiring improvement: <...> *we do our best to complete assignments on time and diligently but we still lack skills of independence, creativity, openness to innovations, self-assessment, reflection on own activity and behaviour*'. The Master's programme students from abroad mentioned that *"the biggest problem is inborn modesty and reticence. The insufficient command of the foreign language was an obstacle"*.

The results of qualitative content analysis highlighted the idea that preparation and presentation of musical projects bring in the cooperation between students and teachers: *"extremely frank, close, sincere and collegial collaboration with teachers, artists and musicians"*; *"teachers create positive atmosphere, motivate and encourage an interest in the idea of the project"*. Partner-like cooperation (based on dialogue, frankness, collaboration) with the teachers allowed the students' initiatives and personal self-expression to unfold.

Generalising it can be noticed that students of higher education acknowledge the educational importance of intercultural competence; therefore, it is advised to improve the content of university subject module introducing means of (self-) development of intercultural competence.

### Conclusions

- The most important strategies (directions) connected with future music educator intercultural competence by means of musical activity are related to the following: a) accumulation of music knowledge of own and other musical cultures; b) development of abilities to interpret and evaluate music within a different cultural context; c) stimulation of more meaningful cultural experiences; d) encouragement of students to reflect and self-assess their own activities. Application of strategies related to the development of intercultural competence during the educational project helped fix various features connected with the development of the intercultural competence discussed above.
- Following the research results, it can be stated that participation of foreign students in the educational (music performance) project "Development of Intercultural Competency Through Music Activities" has given a new impetus to new spheres of professional intercultural competence and has had influence on development of a systemic integral attitude towards intercultural competence and opportunities for its development in contemporary higher education.
- The prerequisites for development of intercultural competence in the educational project were established combining activating teaching and learning methods and emphasising the significance of student reflection and self-assessment. The implemented educational (music performance) project can encourage university teachers to perceive the process of music teaching and learning not only as an activity of developing musical skills, but also envisage more extensive possibilities of the development of students' intercultural values.

### Bibliography

1. Berardo K., Deardorff D. K. (Eds.) (2012). *Building Cultural Competence: Innovative Activities and Models*. Sterling, Virginia: Stylus Publishing, LLC. [online] [10.11.2016]. Available at [https://sty.presswarehouse.com/sites/stylus/resrcs/chapters/1579228046\\_otherchap.pdf](https://sty.presswarehouse.com/sites/stylus/resrcs/chapters/1579228046_otherchap.pdf)
2. Bitinas B. (2006). Edukologinis tyrimas: sistema ir procesas (Educational Research: System and Process). *Acta Paedagogica Vilnensia*, Vol. 17. Vilnius: Kronta. (in Lithuanian)
3. Bolton G. (2010). *Reflective Practice: Writing and Professional Development*. (3<sup>rd</sup> ed.). London: Sage publications.
4. Chodzkieñė L. (2012). *EU Pedagogue's Intercultural Communicative Competence and its Developmental Socio-Educational Factors*. Summary of Doctoral Thesis in Social Sciences and Education. Vilnius: Lithuanian University of Educational Sciences.
5. Cushner K., Mahon J. (2009). Developing the Intercultural Competence of Educators and Their Students: Creating the Blueprints. In: D.K. Deardorff (Ed.), *The SAGE Handbook of Intercultural Competence*. Thousand Oaks, CA: SAGE Publications Inc., pp. 304 – 320.
6. Dalib S., Harun M., Yusoff N. (2014). Reconceptualizing Intercultural Competence: A Phenomenological Investigation of Students' Intercultural Experiences. *Procedia - Social and*

- Behavioral Sciences*, Vol. 155, pp. 130 – 135. [online] [08.11.2016]. Available at <http://www.sciencedirect.com/science/article/pii/S1877042814057346>
7. Deardorff D. K. (2015). *Demystifying Outcomes Assessment for International Educators: A Practical Approach*. Sterling, Virginia: Stylus Publishing, LLC.
  8. *Education and Training in Europe 2020 – the Contribution of Education and Training to Economic Recovery, Growth and Jobs*. (2012). Brussels: European Commission, Education and Training.
  9. Gerulaitienė E. (2013). Patirtinio mokymosi kitame kultūriniame kontekste ugdymo praktikos, plėtojant tarpkultūrinę kompetenciją, ypatumų analizė (Analysis of Peculiarities of Experiential Learning in Different Cultural Context: Development of Intercultural Competence). *Socialiniai mokslai. Edukologija. Jaunųjų mokslininkų darbai*, Vol. 1(39), pp. 25 – 32. (in Lithuanian)
  10. Jon J.E. (2013). Realizing Internationalization at Home in Korean Higher Education: Promoting Domestic Students' Interaction with International Students and Intercultural Competence. *Journal of Studies in International Education*, Vol. 17(4), pp. 455 – 470.
  11. Key Competences for Lifelong Learning: A European Reference Framework. (2006). The Recommendation of the European Parliament and of the Council of 18 December 2006. *Official Journal of the European Union*, Vol. 394(10). [online] [06.11.2016]. Available at <http://enil.ceris.cnr.it/Basili/EnIL/gateway/europe/EUkeycompetences.htm>
  12. Krajewski S. (2011). Developing Intercultural Competence in Multilingual and Multicultural Student Groups. *Journal of Research in International Education*, 2011, Vol. 10(2), pp. 137 – 153. [online] [08.11.2016]. Available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1000.8904&rep=rep1&type=pdf>
  13. Lasauskienė J. (2012). *Muzikinių edukacinių projektų rengimas ir įgyvendinimas (Management of Musical Educational Projects)*. Vilnius: Edukologija. (in Lithuanian)
  14. Mayring Ph. (2014). *Qualitative Content Analysis: Theoretical Foundation, Basic Procedures and Software Solution*. Monograph. Klagenfur, Austria: Leibniz-Institut für Sozialwissenschaften. [online] [06.11.2016]. Available at <http://nbn-resolving.de/urn:nbn:de:0168-ssaoar-395173>
  15. Mazlaveckienė G. (2015). *Cultural Competence of Pre-service Teachers of Foreign Languages and Preconditions for its (Self-) Development*. Summary of the Doctoral Thesis in Social Sciences, Education. Vilnius: Lithuanian University of Educational Sciences.
  16. Mohedo M.T.D., Bújez A.V. (2014). Project Based Teaching as a Didactic Strategy for the Learning and Development of Basic Competences in Future Teachers. *Procedia - Social and Behavioral Sciences*, Vol. 141, pp. 232 – 236. [online] [08.20.2015]. Available at: [www.sciencedirect.com](http://www.sciencedirect.com)
  17. Navickienė V. (2014). The Development of College Teachers' Intercultural Competences and their Application in Educational Activity. In von Carlsburg G.B., Vogel T. (Eds.) *Bildungswissenschaften und akademisches Selbstverständnis in einer globalisierten Welt= Education and Academic Self-Concept in the Globalized World. Baltische Studien zur Erziehungs- und Sozialwissenschaft*, Vol. 28, pp. 489 – 501.
  18. Niculescu M., Percec D. (2015). Intercultural Education in the Pre-service and In-service Teacher Training and Development. *Procedia - Social and Behavioral Sciences*. Vol. 180, pp. 892 – 898. [online] [08.11.2016]. Available at <http://www.sciencedirect.com/science/article/pii/S1877042815015839>
  19. Norvilienė A. (2014). Tarpkultūrinės studentų kompetencijos ugdymo(si) veiksniai (Factors for Developing Students' Multicultural Competencies). *Socialiniam ugdymui(si) palanki aplinka ir jos kūrimo strategijos*, Vol. 38(2), pp. 40 – 55. (in Lithuanian)
  20. Odag O., Wallin H. R., Kedzior K. K. (2015). Definition of Intercultural Competence According to Undergraduate Students at an International University in Germany. *Journal of Studies in International Education*, Vol. 20(2), pp. 118 – 139. [online] [24.11.2016] Available at: <http://jsi.sagepub.com/content/early/2015/05/18/1028315315587105.abstract>
  21. Savvides N. (2014). Methodological Issues in International, Intercultural and Comparative Education. *Research in Comparative and International Education*, Vol. 9(4), pp. 370 – 374.
  22. *Valstybinė švietimo 2013 – 2022 metų strategija (The National Education Strategy for 2013 – 2022)*. (2014). Vilnius: Švietimo ir mokslo ministerija. [online] [04.11.2016]. Available at <http://www.smm.lt/strategija/docs/VSS%202013%20metmenys%202012-05-16.pdf> (in Lithuanian)

23. Virgailaitė-Mečkauskaitė E. (2011). *Developing Intercultural Competence within the Context of Internationalisation of the Higher Education (Case Analysis of Master's Degree Studies)*. Summary of the Doctoral Thesis in Social Sciences, Education. Šiauliai: Šiauliai University.
24. Wang X. (2016). *Artistic Self-expression of Future Music Educators and Preconditions for its (Self-) Development*. Master's Thesis in Social Sciences, Arts Pedagogy. Lithuanian University of Educational Sciences.
25. Williams T. R. (2009). The Reflective Model of Intercultural Competency: A Multidimensional, Qualitative Approach to Study Abroad Assessment. *The Interdisciplinary Journal of Study Abroad*. Vol. 18, pp. 289 – 306.
26. Wintergerst A. C., McVeigh J. (2011). Tips for Teaching Culture. Practical Approaches to Intercultural Communication. NY: Pearson Longman.
27. Zhang I. (2016). *Factors for Developing Future Music Teachers' Intercultural Competence*. Master's Thesis in Social Sciences, Arts Pedagogy. Vilnius: Lithuanian University of Educational Sciences.

## The Concept of the Need for Teachers' Educational Competences in the Strategic Documents of Lithuanian Higher Education

Vida Navickienė<sup>1</sup> Dr.; Emilija Urnėžienė<sup>2</sup> Dr.  
Vilnius Gediminas Technical University, Lithuania<sup>1</sup>;  
Lithuanian University of Educational Sciences, Lithuania<sup>2</sup>  
[vida.navickiene@vgtu.lt](mailto:vida.navickiene@vgtu.lt)<sup>1</sup>; [emilija.urneziene@leu.lt](mailto:emilija.urneziene@leu.lt)<sup>2</sup>

**Abstract:** The article analyses the educational competences of Lithuanian higher education teachers and possibilities for their improvement reviewing strategic documents. The following research methods were employed: analysis of regulatory documents on education and analysis of the strategic documents on higher education (universities and colleges). The article aims to analyse the educational competences of Lithuanian higher education teachers and possibilities for their improvement reviewing strategic documents. The analysis of documents outlining the education in Europe highlighted higher education teachers' activities under the prevailing paradigm of life-long learning, which concentrates on continuous development of educational competences. Seeking to find solutions to research questions, it was revealed that the educational documents of the Republic of Lithuania emphasise only school teacher's acquisition of educational competences and its improvement. The conducted research revealed that in the analysed strategic documents of higher education institutions insufficient attention is allocated to continuous development of educational competences. Therefore, the need for theoretical and empiric substantiation of educational competences of teachers is necessitated creating the descriptor of teacher's educational competences, which would contribute to devising of efficient strategies for higher education and would enable higher education teachers to pursue excellence in the study process.

**Keywords:** higher education; teacher; educational competence.

### Introduction

Higher education policy of the Republic of Lithuania is formed following the key and timely provisions of the educational policy of the European Union. The latest documents of the Bologna process (Bucharest Communiqué, 2012; Yerevan Communiqué, 2015) foregrounds one of the most important challenges for higher education, namely the implementation of the quality study process employing innovative learning methods and complying with the changing needs of the society. The National Progress Strategy "Lithuania 2030" (Lietuvos pažangos..., 2012) emphasizes the implementation of the assessment and self-assessment system of the competence promoting creativity, quest and development. The National Education Strategy for 2013–2022 (Valstybinė švietimo..., 2013) highlights the necessity to achieve the level of pedagogical communities consisting of reflective, continuously developing and effectively working professional school teachers and teachers in higher education. The aforesaid documents commit teachers in higher education to act within the prevailing paradigm of lifelong learning and focus on the continuous development of educational competences. The increased competitiveness of higher education in Europe and all over the world forces universities to seriously and responsibly address not only scientific research activities conducted by university teachers but also their pedagogical activity, which is inseparable from knowledge and understanding of higher education didactics (Jatkauskienė, Le Boterf, 2012).

Hence, the aim of the article is to analyse educational competences of Lithuanian teachers in higher education and the possibilities of their development in terms of the strategic documents. The following problem-based questions are raised: first, what demand for the educational competences of teachers in higher education is presupposed in European and Lithuanian regulatory documents?; second, what is the demand for the educational competences of teachers in higher education and what objectives are set for their development in the strategic documents of higher schools?

### Methodology

The following research methods were employed: analysis of pedagogical literature and regulatory documents on education; analysis of the strategic documents on higher education. The research analyses the demand for the educational competences of teachers in higher education and objectives of their development provided for in Lithuanian strategic documents on higher education (in 2016 23 colleges and 23 universities were functioning in Lithuania).

## Results and discussion

### 1. Educational competences of higher education teachers in the main documents that regulate education in Europe and Lithuania

The first stage of the research reveals the demand for the educational competences of teachers in higher education that is presupposed in key documents regulating education in Europe and Lithuania.

*1.1. Educational competences of higher education teachers in the main documents that regulate education in Europe.* The analysis of the documents of the Bologna process of the period from 1999 to 2015 revealed three main stages: the first stage that lasted from the first meetings of the ministers of education in 1999 to the meeting in Berlin in 2003 (Svarbiausi Bolonijos..., 2008). At this stage, discussions were limited to the structural priorities of the reconstruction of European higher education system (e. g. creation of clear and comparable system of degrees, development of a two-cycle system (of pre-diploma and post-diploma studies), construction of the credit system, international mobility). The second stage embraced the period from 2005 to 2007 (Svarbiausi Bolonijos..., 2008). The internal changes of higher education were foregrounded in the meetings of this period. The changes in the social dimensions were discussed focusing on the improvement of access to higher education for all social groups, promoting social cohesion, reducing inequalities and increasing the level of knowledge, skills and abilities within a society, as well as promoting the application of flexible learning methods. The third stage covers the period from 2009 to 2015 (Communiqué of the Conference..., 2009; Bucharest Communiqué, 2012; Yerevan Communiqué, 2015) The Leuven and Louvain-la-Neuve Communiqués of 2009 (Communiqué of the Conference..., 2009) focused on the quality of higher education. They stated that the reconstruction of study programmes should aim at student-centred teaching and curriculum reform directed at a student and their learning achievements. The Bucharest Communiqué (2012) repeatedly highlighted the necessity for the development of student-centred studies based on innovative teaching methods and perceiving the student as an active participant of the study process. Thus, the change of paradigms directed towards providing quality education was promoted in the European Higher Education Area that could be ensured by a reconceptualised teaching/learning system in higher education and creation of the environment inspiring a person to work and learn. It is noteworthy that during the last meeting in Yerevan in 2015, the Ministers again stressed and clearly defined what internal changes should be implemented and maintained in higher education. The most important ones were related to educational innovations, including the employment of digital technologies, flexible learning as well as appropriate teaching and assessment methods. It should be emphasised that the Communiqué (Yerevan Communiqué, 2015) highlighted the necessity for developing educational competences of teachers. Hence, the analysis of the Bologna process documents revealed that higher education teachers face considerable challenges in pursuing to implement educational novelties into the study process.

Another important document that emphasises the significance of initial and continuing development of the qualifications of teachers in higher education is the European Commission Communiqué No. 567 'Supporting Economic Growth and Jobs – an Agenda for the Modernisation of Europe's Higher Education System' of 20 September 2011 (Supporting Growth..., 2011). It is noteworthy that the objectives of the European Commission to improve the quality of higher education comply with the third stage of the Bologna process. Hence, having analysed the aforesaid document, it is possible to distinguish three main objectives. First, the application of flexible and innovative teaching and learning methods aiming to improve the quality of education and learning process necessitates for the employment of latest technologies, distance learning and virtual mobility possibilities. Second, politicians in higher education understand that "the reform and modernisation of Europe's higher education depends on the competence and motivation of teachers and researchers <...> Better working conditions including transparent and fair recruitment procedures, better initial and continuing professional development, and better recognition and reward of teaching and research excellence are essential to ensure that Europe produces, attracts and retains the high quality academic staff it needs" (Supporting Growth..., 2011, 7). Third, it is highlighted that state and higher education institutions should invest into continuous development of staff qualifications.

Having analysed the documents that highlight political objectives for higher education, it is possible to claim that the creation of quality and innovative higher education largely depends on higher schools that

should constantly promote and ensure initial and continuing development of teacher qualifications, plan and organise these processes, as well as allocate correspondent investment.

1.2. *Educational competences of higher education teachers in the main documents that regulate education in Lithuania.* The National Progress Strategy “Lithuania 2030” (Lietuvos pažangos..., 2012) was developed referring to the experience of Lithuanian communities, non-governmental organizations and active citizens, their dialogue and ideas about the prospective future of Lithuania. The Strategy is guided by progress-relevant values of openness, creativity, responsibility. One of the initiatives of key changes into smart society is the implementation of the assessment and self-assessment system of the competence promoting creativity, quest and development: “<...> to develop programmes focused on creativity, quest and personal development, as well as competence assessment and self-assessment framework, putting them in place across all the educational establishments” (Lietuvos pažangos..., 2012, 8).

The National Education Strategy for 2013–2022 states that it is essential “to achieve the level of pedagogical communities consisting of reflective, continuously developing and effectively working professional school teachers and teachers in higher education” (Valstybinė švietimo..., 2013, 4). It is of primary importance to “enhance motivation by providing school teachers and teachers in higher education with qualification development opportunities by expanding their cultural world outlook, promoting awareness of modern technologies, focusing on the development of creativity, citizenship, leadership and entrepreneurship as well as establishing a wider spectrum of educational functions”. Second, it is important “to promote continuous sharing of good experience among teachers in higher education as well as among teachers of formal and non-formal education” (Valstybinė švietimo..., 2013, 5). One of the priority areas of education policy outlined in the National Education Strategy (Valstybinė švietimo..., 2013) is the promotion of teachers’ professionalism.

The conducted analysis of the regulatory documents on Lithuanian education revealed that most documents as The National Description of Teacher Competences (Mokytojo profesijos..., 2007) and The Description of Requirements for Teacher Qualifications (Reikalavimų mokytojų..., 2014) focus on the acquisition and development of teacher competences. Despite the fact that The National Progress Strategy “Lithuania 2030” (Lietuvos pažangos..., 2012) and The National Education Strategy for 2013–2022 (Valstybinė švietimo..., 2013) provide guidelines for professional school and higher education teachers, only a few documents define the teachers’ professionalism. Only a few descriptions of study fields (a part of them are approved, others include only drafts of documents) mention educational competences of the teachers in higher education. Therefore, there is a lack of documents defining teachers’ professionalism: what are the competences of a professional teacher?

## **2. Educational competences of higher education teachers in the strategic documents of higher education institutions**

As the educational paradigm is undergoing changes, new challenges for performance and competence of higher education institution teachers arise. The role of a university teacher as a scientist, a teacher and a psychologist is enormous. In recent years the paradigm of science has been changing, i.e. it is more orientated towards students’ autonomous learning (especially fulfilling the documents of Bologna process) (Tijūnėlienė, 2012). There is a clear requirement for high quality, innovative pedagogy in the third level institutions, and the growth of a student-centered approach has demonstrated new options for the teachers and students alike. Student-centered learning (SCL) is currently attracting a great deal of research attention internationally, driven by the growing concerns of educators of ideal teaching and learning methods. However, the **teachers** have not enough experience in implementing the SCL and need more training or workshop in SCL (McCabe, O'Connor, 2014; Osman, Jamaludin, 2015).

Having analysed a big number of works on teachers’ activities by other scholars as D. Razmaitė, D. Dagys (2014) singled out the structure of contemporary teacher’s competence: subject-specific competence (orientation towards innovations in science, creativity, good knowledge and understanding of subject, management of audience attention, mastering of scientific activity methods), research competence (activity creating, applying and disseminating scientific knowledge), educational competence (meta-teaching, learning, teaching of others). Thus, while analysing the need of educational competencies and targets of their improvement outlined in the strategic documents of Lithuanian higher education schools in the second stage of the research the previously analysed structure of competence will be referred to. Since the time of the change of the learning paradigm studies are becoming more



and more student-centered, during the analysis considerably more attention is allocated to the teacher's educational competence.

*2.1. Educational competences of higher education teachers in the strategic documents of universities.* Firstly, attempts were made to figure out how much attention is focused on teacher competences (research, subject-specific, educational) in the strategic documents of Lithuanian universities and what place educational competence takes among other competences. The research analysis revealed (Table 1) that the strategic documents of different Lithuanian universities attribute uneven value to teacher competences. Teacher competences are not mentioned at all in the documents of 9 universities out of 23. Having compared the strategies of state and private universities, it appeared that teacher competences are mentioned in the strategies of almost all state universities (12 out of 13), whereas they are outlined in the documents of only 2 private universities out of 10. Despite that the significance of science is emphasised in all the strategies, not all of them distinguished the research competence of a teacher. Moreover, no details are provided regarding the abilities constituting the aforesaid competence. It is noteworthy that the subject-specific and educational competences of a teacher receive the same amount of attention. In conclusion, it is possible to state that insufficient attention is focused on teacher competences – research, subject-specific and educational – in the strategic documents of Lithuanian universities.

Table 1

**Teacher competences outlined in the strategic documents of universities**

	<i>State universities (SU)</i>													<i>Private universities (PU)</i>									
<i>Competences</i>	1 SU	2 SU	3 SU	4 SU	5 SU	6 SU	7 SU	8 SU	9 SU	10 SU	11 SU	12 SU	13 SU	14 PU	15 PU	16 PU	17 PU	18 PU	19 PU	20 PU	21 PU	22 PU	23 PU
<b>Research</b>	+		+		+		+		+	+	+	+	+				+					+	
<b>Subject-specific</b>	+	+	+	+		+	+		+	+	+	+					+						
<b>Educational</b>	+	+	+				+			+	+	+	+				+					+	

After the analysis of experience accumulated in higher education schools of various countries, scholars B. Jatkauskienė, G. Le Boterf (2012) state that didactic professional development of teachers can be integrated into the strategy of university activity in a number of different ways. Various models for improvement of the teachers' educational competence (didactic preparation) have been introduced or are being introduced in European or world universities. They range from obligatory models at the national level to permissions for universities to solve this issue autonomously establishing didactic centres.

The research also focused on the content of educational competences outlined in the strategic documents of Lithuanian universities. Table 2 reveals that the greatest attention is directed towards teacher mobility and sharing good practice with teachers of universities of other countries. Besides, a considerable attention is drawn to continuous development of teacher competences in most strategies. Almost a half of the strategies emphasise the system of teacher motivation, since the aspiration for development and activeness are largely dependent on the personality him/herself. Only several documents highlight the significance of collaboration, sense of community, innovations, application of methods developing creativity and innovativeness in the study process, as well as improvement of foreign language skills. The obtained data confirm that the educational competence of teachers receives greater attention in the strategic documents of Lithuanian state universities than of private ones. Hence, it can be assumed all universities should focus greater attention on teacher competences and their development, which necessitates for the creation of a descriptor of educational competences of a teacher in higher education. Continuous improvement of a lecturer is a condition for his/her authority. Teaching methods particularly motivate students for activities because they want to attend more lectures of teachers-authorities at university than they are offered. Students regard intensive research activities of teachers as a source of inspiration and encouragement for them to engage into science (Tijūnėlienė, 2012).



Table 2

**Components of the educational competence of a teacher outlined in the strategic documents of universities**

	<i>State universities (VU)</i>													<i>Private universities (NU)</i>									
<i>Educational competence</i>	1 SU	2 SU	3 SU	4 SU	5 SU	6 SU	7 SU	8 SU	9 SU	10 SU	11 SU	12 SU	13 SU	14 PU	15 PU	16 PU	17 PU	18 PU	19 PU	20 PU	21 PU	22 PU	23 PU
Continuous development of competences	+	+	+	+	+	+	+	+		+	+	+	+				+		+				
System of motivation	+	+	+				+	+		+			+							+	+		
Mobility	+	+	+	+	+	+	+		+	+	+	+		+	+			+	+	+			
Collaboration	+	+								+													
Innovations (ICT)		+	+		+																		
Methods promoting creativity and innovation			+																				

*2.2. Educational competences of higher education teachers in the strategic documents of colleges.* Pursuing to analyse the long-term objective of colleges regarding the improvement of teacher qualifications, a number of documents were explored: long-term strategic plans/integrated development strategies (up to 2019, 2020 and 2021 respectively), statutes and documents on quality policy. Additional documents were analysed in those cases when long-term strategic plans were not available on the websites of colleges. Significant differences were noted between state and private colleges (Aukštosios mokyklos..., 2015): 11 out of 13 state colleges had their strategic plans uploaded on their websites, whereas only 3 out of 10 private colleges provided their strategic plans online (Table 3). Such a discrepancy appeared due to the fact that several state colleges implemented projects following the Measure “Enhancement of Study System Efficiency” of Priority 2 “Lifelong Learning” of the Operational programme “Human Resources Development” in 2007-2013. Therefore, additional documents of private colleges had to be reviewed. It is noteworthy that implementing the institutional assessment of Lithuanian establishments of higher education, strategic planning is one of the four assessed areas. Having explored the results of international assessment reports, it appeared that out of 23 colleges, only one state and two private ones had received negative assessment for their strategic management since 2013. Therefore, it is assumed that all colleges have their long-term strategic plans, yet not all of them are open to public access (Analysis of 2011-2015..., 2016).

Table 3

**Teacher competences outlined in the strategic documents of colleges**

	<i>State colleges (SC)</i>													<i>Private colleges (PC)</i>									
<i>Competences</i>	1 SC	2 SC	3 SC	4 SC	5 SC	6 SC	7 SC	8 SC	9 SC	10 SC	11 SC	12 SC	13 SC	14 PC	15 PC	16 PC	17 PC	18 PC	19 PC	20 PC	21 PC	22 PC	23 PC
<b>Research</b>				+		+		+		+	+		+		+	+							
<b>Subject-specific</b>		+	+	+	+			+	+	+	+		+		+	+							
<b>Educational</b>			+	+		+			+		+				+	+							

Three tendencies can be distinguished when analysing the objectives of colleges regarding the improvement of teacher qualifications:

First, no data regarding qualification development was found in the documents open to public access. Second, some colleges that follow paradigm changes, i.e. to develop learner-centred system of

education, set great challenges to promote internationalisation, to develop distance studies, to apply innovative teaching/learning strategies, as well as to ensure flexible and diverse studies; however, the promotion of teacher competences is defined in a very abstract way: to promote professionalism of teachers, to ensure qualification improvement of human resources, as well as to implement the process of human resources management and development that would ensure continuous and purposeful development of the competences and qualifications of College teachers. Otherwise, no information regarding qualification improvement is provided. Third, the competences to be developed are clearly defined in some documents that include not only research, educational and subject-specific competences, but also the ones provide in Table 4. Analysing more specific examples, it is worth mentioning that one of the state colleges aims at achieving that 100 % of the study programmes should employ innovative teaching methods and technologies; however, fewer than a half of the teaching staff are expected to improve their qualifications. Scholars emphasise that students' active participation in the pedagogical process is a result of teacher's activity; therefore, enhancement of students' creative activity is possible upon their systematic integration into various types of educational and extra-curricular activities. Competence approach is oriented towards organizing educational and cognitive activity by modelling various situations in different fields of a person's life activity (Abykanova, Tashkeyeva, 2016).

Table 4

**Components of the educational competence of a teacher outlined in the strategic documents of colleges**

	<i>State colleges (SC)</i>													<i>Private colleges (PC)</i>									
<i>Educational competence</i>	1 SC	2 SC	3 SC	4 SC	5 SC	6 SC	7 SC	8 SC	9 SC	10 SC	11 SC	12 SC	13 SC	14 PC	15 PC	16 PC	17 PC	18 PC	19 PC	20 PC	21 PC	22 PC	23 PC
Continuous development of competences		+			+	+	+				+	+			+			+		+			
Values									+		+				+			+					
Teacher professionalism	+				+						+												
Application of problem-based learning												+							+				
Creativity, creation of innovations								+	+						+								
Application of problem-based learning												+							+				
General abilities		+	+																				
Learning technologies									+						+								
Entrepreneurship									+		+												
Development of foreign language skills										+	+												
Information technologies											+				+								
Mobility										+													
High quality of teaching and learning																					+		

There is a case in which educational competence is regarded as a competence of compiling methodological materials. One of the state colleges that presents itself as a learning organisation, the teacher is perceived as a value. An exceptional case among all Lithuanian schools of higher education was the strategic objective of a private college that complied with the political aims outlined in the

Communiqué of the European Commission (Supporting Growth..., 2011). The college aims that not less than 95 per cent of teachers have assessed and recognised didactic competences: "Pursuing to ensure the compliance of the didactic and subject-specific competences of college teachers and their readiness to teach with the standards and requirements of the college, it is essential to introduce a programme of the development, assessment and certification of the competences of college teachers that should be based on the awarding of a certain qualification category upon the completion of studies at qualification development courses of a correspondent level. Moreover, it is necessary to define the essential minimal level of a teacher's didactic readiness as a compulsory norm before assuming the teaching activity" (Socialinių mokslų..., 2011, 25). The strategic plan of the aforesaid institution focuses a lot of attention on the development of educational abilities of the teachers. Nevertheless, having summarised all the data, it is obvious that institutions of higher education largely aim at the development of subject-specific competences of teachers. The analysis of the strategic plans of colleges revealed that alongside with the aims to develop research and subject-specific competences of teachers, the content of educational competences is discussed in greater detail (Table 4).

The strategical documents of colleges emphasise development of general abilities such as communicative competence, foreign language skills in various forms (summer camps, distance learning, international courses and others), attention is allotted to development of both creativity and entrepreneurship and even specific methods are indicated, which should be applied by teachers in their daily work. Generalising, it can be stated that a big number of colleges also set themselves the objective of continuous professional development of their academic staff.

### Conclusions

- The analysis of documents outlining the education in Europe highlighted higher education teachers' activities under the prevailing paradigm of life-long learning, which concentrates on continuous development of educational competences. The research revealed the documents adopted in the Republic of Lithuania focus on acquisition of teachers' educational competences and their improvement but insufficient attention is directed towards educational competences of higher education teachers. However, achievement of the aforesaid competences and their development gain particular significance carrying out external quality assessment of studies.
- The conducted analysis of the long-term strategic plans of higher education institutions (universities and colleges) reveals insufficient attention to improvement of teacher competences. The research and subject-specific competences obviously attract more attention compared to educational ones. It should be emphasised that development of teachers' competences is more highlighted in state higher education institutions than in private establishments.
- Consequently, the need for theoretical and empiric substantiation of teacher educational competences arises, which results in devising of the descriptor of teachers' educational competences. Such descriptor would contribute to development of efficient higher education strategies and would enable teachers to seek mastery in the process of education.

### Bibliography

1. Abykanova B., Tashkeyeva G., Idrisov S., Bilyalova Z., Sadirbekova D. (2016). Professional Competence of a Teacher in Higher Educational Institution. *International Journal Of Environmental And Science Education*, Vol. 11(8), 2197-2206.
2. Analysis of 2011-2015 External Review of Higher Education Institutions in Lithuania (2016). Vilnius: Centre for Quality Assessment in Higher Education. [online] [04.11.2016]. Available at [http://www.skvc.lt/uploads/documents/files/EN%20versija/Institutional%20review%20reports/28422\\_SKVC-knyga-EN.pdf](http://www.skvc.lt/uploads/documents/files/EN%20versija/Institutional%20review%20reports/28422_SKVC-knyga-EN.pdf)
3. *Aukštosios mokyklos, kolegijos (Higher Education Establishments, Colleges)*. (2015). [online] [15.11.2016]. Available at <http://www.lamabpo.lt/turiny/aukstosios-mokyklos/kolegijos#top> (in Lithuanian)
4. *Bucharest Communiqué*. (2012). Bucharest: European Higher Education Area. [online] [15.09.2016]. Available at [http://media.ehea.info/file/2012\\_Bucharest/67/3/Bucharest\\_Communique\\_2012\\_610673.pdf](http://media.ehea.info/file/2012_Bucharest/67/3/Bucharest_Communique_2012_610673.pdf)
5. *Communiqué of the Conference of European Ministers Responsible for Higher Education*.-(2009). The Bologna Process 2020. Leuven and Louvain-la-Neuve, c. [online] [12.11.2016]. Available at

- [http://www.smm.lt/uploads/documents/Papildomas%20menu2/Bolonijos\\_procesas/Leuven\\_Lou\\_vain-la-Neuve\\_Communique.pdf](http://www.smm.lt/uploads/documents/Papildomas%20menu2/Bolonijos_procesas/Leuven_Lou_vain-la-Neuve_Communique.pdf).
6. Jatkaušienė B., Le Boterf G. (2012). Universiteto dėstytojų profesionalizacijos eskizas (A Schetch of the University Lecturers' Professionalization). *Andragogika*, Vol. 1(3). Klaipėda: Klaipėdos University, pp. 48 – 66. (in Lithuanian)
  7. *Lietuvos pažangos strategija „Lietuva 2030“ (The National Progress Strategy "Lithuania 2030")*. (2012). Approved by the Resolution of the Seimas of the Republic of Lithuania No. XI-2015 of 15 May 2012. [online] [05.09.2016]. Available at <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.425517> (in Lithuanian)
  8. McCabe A., O'Connor U. (2014). Student-Centred Learning: the Role and Responsibility of the Lecturer. *Teaching in Higher Education*, Vol. 19 (4), pp. 350 – 359.
  9. *Mokytojo profesijos kompetencijos aprašo (The National Description of Teacher Competences)*. Approved by the Order of the Minister of Education and Science No. ISAK-54 of 15 January 2007. Vilnius: Lietuvos Respublikos Švietimo ir mokslo ministras. [online] [05.09.2016]. Available at [http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc\\_l?p\\_id=291726&p\\_query=&p\\_tr2=](http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=291726&p_query=&p_tr2=) (in Lithuanian)
  10. Osman S.Z.M., Jamaludin R., Iranmanesh M. (2015). Student Centered Learning at USM: What Lecturer and Students Think of This New Approach? *Journal of Education and Practice*, Vol. 6(19), pp. 264 – 277.
  11. Razmaitė D., Dagys D. (2014). Universiteto administracijos ir studentų reikalavimai dėstytojo kompetencijai (Are the Requirements for Teacher's Competence set by University Administration and Students Similar?). *Pedagogika*, Vol. 114(2), pp. 42 – 53. (in Lithuanian)
  12. *Reikalavimų mokytojų kvalifikacijai aprašo (The Description of Requirements for Teacher Qualifications)*. Approved by the Order of the Minister of Education and Science No. V-774 of 29 August 2014. Vilnius: Lietuvos Respublikos Švietimo ir mokslo ministras. [online] [10.09.2016]. Available at [http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc\\_l?p\\_id=480362&p\\_tr2=2](http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=480362&p_tr2=2) (in Lithuanian)
  13. *Socialinių mokslų kolegijos integruotos veiklos strategija 2011–2020 m. (Integrated Development Strategies of University of Applied Social Sciences 2011–2020 m.)*. (2011). Vilnius: SMK Socialinių mokslų kolegija. [online] [16.09.2016]. Available at [http://www.smk.lt/uploads/files/smk\\_dokumentai/SMK\\_Strategija\\_LT\\_46psl.pdf](http://www.smk.lt/uploads/files/smk_dokumentai/SMK_Strategija_LT_46psl.pdf) (in Lithuanian)
  14. *Supporting Growth and Jobs – an Agenda for the Modernisation of Europe's Higher Education Systems*. (2011). Communication from the Commission No. 567. Luxembourg: Publications Office of the European Union. [online] [15.09.2016]. Available at [http://ec.europa.eu/education/library/policy/modernisation\\_en.pdf](http://ec.europa.eu/education/library/policy/modernisation_en.pdf).
  15. *Svarbiausi Bolonijos proceso dokumentai. Bolonijos–Londono laikotarpis: 1999–2007 m. (The Documents of Bologna Process. Bologna–London period 1999–2007)*. (2008). Vilnius: Lietuvos Respublikos švietimo ir mokslo ministerija. [online] [10.09.2016]. Available at [http://www.smm.lt/uploads/documents/Papildomas%20menu2/Bolonijos\\_procesas/Bolonijos\\_proceso\\_dokumentai\\_Bolonijos-Londono\\_laikotarpis.pdf](http://www.smm.lt/uploads/documents/Papildomas%20menu2/Bolonijos_procesas/Bolonijos_proceso_dokumentai_Bolonijos-Londono_laikotarpis.pdf) (in Lithuanian)
  16. Tijūnėlienė O. (2012). Studentų nuomonių apie dėstytoją fenomenologinis tyrimas (Phenomenological Research into Students' Attitude Towards a Lecturer as a Scientist and a Teacher). *Tiltai*, Vol. 61(4). Klaipėda: Klaipėdos University, pp. 105 – 121 (in Lithuania).
  17. *Valstybinė švietimo 2013–2022 metų strategijos (The National Education Strategy for 2013–2022)*. (2013). Approved by the Resolution of the Seimas of the Republic of Lithuania No. XII-745 of 23 December 2013). Vilnius: Švietimo ir mokslo ministerija. [online] [05.09.2016]. Available at <https://www.e-tar.lt/portal/legalAct.html?documentId=b1fb6cc089d911e397b5c02d3197f382> (in Lithuanian)
  18. *Yerevan Communiqué*. (2015). Bologna Process. Yerevan: European Higher Education Area [online] [15.09.2016]. Available at [http://www.smm.lt/uploads/documents/Papildomas%20menu2/Bolonijos\\_procesas/Communique.pdf](http://www.smm.lt/uploads/documents/Papildomas%20menu2/Bolonijos_procesas/Communique.pdf).

## **The Development of Cooperation Skills by Improving Sense of Rhythm during Music Lessons in Primary School**

**Ligita Stramkale** Dr. paed.

University of Latvia, Latvia

[ligita.stramkale@lu.lv](mailto:ligita.stramkale@lu.lv)

**Abstract:** This study clarifies the importance that music lessons in primary school should be focused not only on teaching the music subject - related skills and knowledges but also on promoting the development of general learning skills. Modern music lesson should prepare pupils for practical life by using different forms of musical activities. One of the most important life skills is cooperation skills, which can be developed through using different exercises to improve sense of rhythm. The aim of the study is to analyze and determine the relationship between performing rhythm exercises accurately and the pupils' cooperation skills. In order to achieve the objectives of the study, various cognitions about the sense of rhythm and cooperation skills were theoretical analyzed and some exercises to improve the sense of rhythm were created and experimentally tested. A self-assessment questionnaire was carried out to determine if primary school pupils can develop their cooperation skills by performing different exercises to improve their sense of rhythm. It is determined that the pupils while performing exercises to improve sense of rhythm, they using often some cooperation skills like activity coordination, supporting each other and listening to other's opinion. The study helped to identify different disturbing factors that can affect pupils' cooperation in learning group while they trying to perform the rhythm exercise together. The development of cooperation skills can be affected by the discipline in classroom, the pupil's readiness to perform rhythm exercises and the pupils' desire to cooperate with each other.

**Keywords:** exercises to improve sense of rhythm, cooperation skills, music lessons, primary school.

### **Introduction**

The National basic education standard considers that the cooperation aspect is an important part of the educational aspects (Noteikumi par..., 2004). The school teachers should develop the cooperation skills among pupils during teaching process. Teaching music at school could promote the pupils' cooperation skills by participating in singing (Douglas, North, 2005) and instrumental activities. Rhythm perception in music lesson is associated not only with musical ear but also with the sense of muscle movement (Chemin, Mouraux, 2014; Campbell, 1991). The improvement of sense of rhythm is an integral part of music lesson in comprehensive school. The sense of rhythm could be improved by singing, musical games, playing children's musical instruments and other forms of musical activities. One of the most widely used means for improving sense of rhythm is the performance of multiform rhythm exercises.

It is important to acquire the music subject – related skills and knowledge during music lessons in order to increase the children's musical abilities in the primary years, but it is more important to promote their learning skills in general as well (Matthews, Ubbes, 2016). Modern music lessons should prepare the children to deal with their daily situations and give them the opportunity to develop their skills by using different form of musical activities. Cooperation skills is one of the most needed life skills that help people to communicate with each other in order to achieve one goal or to accomplish joint work. It is possible to develop this skill by performing multiform rhythm exercise, which can improve pupils' sense of rhythm as well.

The human sense of rhythm comes from the left hemisphere of the brain. The human life is not imaginable without rhythm because it is everywhere, where there is movement and life. It is generally means an alternation between different elements. No matter where you look in nature, rhythm is to be found, for example in change of seasons, in the sea or ocean waves' sound, it is even found in the human body, in our heartbeats and breathing. Rhythm in music is one of the means of musical expression. It organizes the relationships among variable musical sounds and provides single musical form in the same time. Rhythm is also reflected in other works of art. Meter in poetry is a rhythm of accented and unaccented syllables arranged into feet, but in painting, sculpture and architecture there is the rhythm of colors and lines, which is called symmetry.

Sense of rhythm is a musical ability, which is inherited as a given in a varying degrees of intensity and could be developed (Hallam, 2010). It is based on the perception and reproduction of the relationship

between sound durations. D. Kirnarskaya considers that the sense of rhythm is deeply subconscious and reflexive. She has discovered three components of sense of rhythm. The primary property of the sense of rhythm is its kinship with movement. The second component of rhythmic giftedness is the ability to form a rhythmic image. The third component in the sense of rhythm is the sense of tempo, the beat. (Kirnarskaya, 2009).

Sense of rhythm is reflected only in action. Lots of experiments are proven that sense of rhythm is closely connected with human body movement (Stankov, Spilsbury, 1978; Tapacoba, 1988; Бепреп, 2004). Having a good sense of rhythm is not only the ability to distinguish the rhythm, but also to feel it emotionally. M. Starceus believes that sense of rhythm consists of two components: The emotional component and intellectual component (Старчеус, 2005).

The improvement of sense of rhythm in Latvia has a rich tradition. In the early 20th century 20s-30s it was already considered that the cross-curricular approach should be implemented in music lessons due to its many benefits for teaching and learning process, and the pupils' knowledge and skills should be acquired through an active way. Improving sense of rhythm in that period was often associated with other school subjects (Rozītis, 1927), and within training the sense of muscles' movement (Bebru, 1922). Connecting singing with rhythmical movement, musical games, rhythmical exercises and scansion are recommended in that period to improve sense of rhythm effectively.

During the soviet era the sense of rhythm was improved by learning different songs and doing solfege exercises. It was believed that acquiring the notation elements is prerequisite for improving the sense of rhythm, but musical ear is a must to achieve a sense of rhythm (Mediņš, Jākobsone, 1958). In the 20th century 70s-80s a relative solmization is used to improve sense of rhythm (Eidiņš, 1976). In the soviet period it was recognized that in order to improve sense of rhythm effectively, the choice of rhythm exercises should be gradually and systematic, in which each of the following rhythm exercise can be a little more difficult than the previous one, and the same exercise should be performed by using different rhythm performance techniques.

After 1990 the music experts in Latvia have acknowledged the pre-existing approaches to music education, for example, A. Stabulniece was one of the experts, who took into account the knowledge of music teachers in the soviet period, but some other experts like I. Nelsone, L. Rozenberga, A. Platpers (Nelsone, Rozenberga, Platpers, 1995) and I. Vilkāse, I. Čerpinska (Vilkāse, Čerpinska, 2000) have recognized the achievements of music teachers in the 1920s-1930s. A. Stabulniece (Stabulniece, 1997) kept using the relative solmization to improve sense of rhythm. One of the most widely used forms of musical activities after 1990 to improve sense of rhythm is scansion, which is often associated with performing sounding gestures and/or playing percussion instruments (Nelsone, Rozenberga, Platpers, 1995), which its theoretical justification is found in Rozīša's *Teaching methodology of singing* (Rozītis, 1929).

Based on the research actualities, the research objectives are defined. The aim of the research is to analyze and determine the relationship between performing rhythm exercises accurately and the pupils' cooperation skills.

## Methodology

The research participants included 49 pupils in grade 3 at Riga X middle school and 17 pupils in grade 3 at Latgale regions X middle school. In total, 66 respondents (N=66) are involved in the research. The pupils performed the rhythm exercises in small groups, about 3-5 pupils in each group. The performance of rhythm exercises in 16 learning groups was analyzed and compared, taking into account the development of pupils' cooperation skills.

A task group consisting of three tasks was created to determine the possibility of developing cooperation skills by using rhythm exercises.

Task 1: The Latvian folk song "Dietu, dietu, jaunas meitas" (To dance, to dance, young girls!) should be performed in evenly rhythmic movements which can be fast and slow. In order to fulfill the first task, the pupils should divide themselves into different roles, which requires them to have the ability to listen to each other, express their opinion, respect other's opinion and in sometimes even the ability to give up and back off. The children should coordinate their activity, cooperate together and support each other in order to fulfill this task successfully.

Task 2: performing rhythm exercise in one voice. The pupils should have good coordination skills to begin their joint activity, and if one of the group members could not perform this rhythm exercise successfully, the others should support him and teach him the right way to do that.

Task 3: performing a rhythm canon. At first, the group members have to divide themselves into two subgroups, which require them to have a positive attitude to each other, and to have the ability to respect other's opinion and justify their own opinion. The performance of rhythm exercises encourages the pupils to become responsible.

The previous task group was carried out in one music lesson, 40 minutes. An observation protocol during performing the rhythm exercises was filled, in which the accuracy of the performance in four- points scale was checked. After performing the rhythm exercises a self-assessment questionnaire was given for each pupil to determine his/her cooperation skills. The questionnaire consisted of 12 statements, which should be assessed by each pupil in four- points scale (4- agree, 3- partly agree, 2- partly disagree and 1- disagree). The questionnaire included also one-ended question. Each pupil should write three main things that can hinder the cooperation among group members. The self-assessment questionnaire was anonym. The pupils could ask any question to the questionnaire creator just in case of ambiguity or misunderstanding. There was no limited time to fill out the questionnaire, however it was recommended that there is no need to take a long time at the same statement. The study was carried out in September 2016.

In order to increase the credibility and validity of the research results the triangulation technique was carried out using a combination of both qualitative and quantitative methods. In quantitative data analysis the Statistical Package for Social Sciences (SPSS software version 22) is used. For each statement in the questionnaire an average score is calculated based on the four- points scale. The analysis of Variance (ANOVA) was carried out to indicate the statistically significant differences between the variables. Cronbach's Alpha is used to determine and measure the internal consistency reliability of the research items. The correlation between two different factors (variables) is calculated according to Pearson's method. The correlation coefficient shows the relationship between two variables. The qualitative data of the research are analyzed using content analysis.

The following research questions will be answered by the study:

- Is there a relationship between performing rhythm exercises correctly and the cooperation skills among group members?
- What are the factors that affect the pupil's satisfaction with the participation in a concrete learning group?
- What are the factors that hinder cooperation?

## Results and discussion

The way of pupil's cooperation to perform rhythm exercises was analyzed in three dimensions. The first one intended to determine how accurately the rhythm exercises have been performed by the pupils in each learning group. The performance of rhythm exercises was compared with the pupils' self-assessment of their cooperation skills. The second dimensions analyzed the pupils' satisfaction with their participation in the groups. The obtained data were compared with pupils' self-assessment of their cooperation skills. The third dimension should define the factors that could hinder cooperation among pupils while they performing rhythm exercises.

The internal consistency reliability of the research items is high ( $\alpha=0,777$ ). In the research was analyzed some basic pupils' coordination skills like the ability to coordinate joint activities, and the way to support and assist each other if it is necessary. The accuracy of performing rhythm exercises is associated with the ability to provide mutual support for each other in the form of giving the opportunities to be supported by group members ( $r=0,327$ ,  $p<0,01$ ) and to support other group members ( $r=0,438$ ,  $p<0,01$ ). It is important that the members of learning group should be able to coordinate their joint activities easily ( $r=0,355$ ,  $p<0,01$ ). The joint activities are easier to coordinate if pupils in learning group defer to each other opinion ( $r=0,365$ ,  $p<0,01$ ) and if there is friendly atmosphere among them in the group ( $r=0,360$ ,  $p<0,01$ ). But how is this friendly atmosphere created in the learning group? One of the factors that affecting the friendly atmosphere among group members is the opportunities to support each other and be supported from others to perform the joint activity perfectly ( $r=0,350$ ,  $p<0,01$ ).



The ability to listen to each other and respect other's opinion depends on the pupils' self-confidence, which is based on their level of competence. The research identified that there is a relationship between self-confidence and the responsibility to perform the rhythm exercises accurately ( $r=0,364$ ,  $p<0,01$ ). The learning group members should take different decisions while they performing the rhythm exercise. It is necessary that each pupil could have the opportunity to express his/her opinion in order to make the right decision. Listening to other's opinion is associated with the willingness to take responsibility for the decision. The pupil is ready to take into account other's opinion if he/she has the ability to pay attention to this opinion ( $r=0,411$ ,  $p<0,01$ ) and if he focusses on supporting the other group members ( $r=0,369$ ,  $p<0,01$ ). The pupil's willingness to perform rhythm exercise depends on his/her interest in doing this activity and how comfortable he/she feels during music lessons. The pupil, who became infatuated with the rhythm exercise, often took his decision spontaneously. The decision should be taken with a sense of responsibility to prevent any unneeded consequences. In a cooperative learning group, the pupil, who takes a certain decision, will be responsible for it not only toward himself but also toward other group members. The responsibility to perform rhythm exercises within learning group is associated with the ability to coordinate joint activity ( $r=0,541$ ,  $p<0,01$ ), as well as with the possibility to be supported from other group members ( $r=0,378$ ,  $p<0,01$ ), and also with the willingness to support other group members ( $r=0,363$ ,  $p<0,01$ ).

It is determined that the pupils' satisfaction with the participation in a certain learning group affecting the accuracy of performing the rhythm exercise ( $r=0,322$ ,  $p<0,01$ ). Also the analysis of pupils' self-assessment shows the same relationship  $r=0,434$ ,  $p<0,01$ ). It is identified several factors that affect the pupils' satisfaction with the participation in a certain learning group. The first one is the possibility to be supported by other group members ( $r=0,385$ ,  $p<0,01$ ), the second one is the ability to coordinate joint activity easily ( $r=0,529$ ,  $p<0,01$ ), and the third factor is the friendly relationship among group members ( $r=0,443$ ,  $p<0,01$ ).

Table 1

**The average scores of the 12 questionnaire statements (pupils' self-assessment)**

Dimensions	Statements	Average
Self-assessment of cooperation skills	The performance of rhythm exercises was mutually coordinated	3,0455
	I have got support from group	2,7121
	I have supported the group members	3,0152
	I have listen to other's opinion	3,3333
	I performed the rhythm exercise with a sense of responsibility	2,8636
	I accepted other's opinion	3,0455
	I was sure of what I did	3,1414
Satisfaction with participation in the group	The group members were friendly	3,1970
	It was easy to coordinate the joint activity in the group	2,5758
	I am satisfied with my participation in this group	3,0758
	One pupil was a group leader	2,8788
	Our group performed the exercise correctly	2,6515

The average scores of the questionnaire statements are reflected in table 1. The lowest average score received the following statements, *It was easy to coordinate the joint activity in the group* (2,5758), *Our group performed the exercise correctly* (2,6515), and *I have got support from group member* (2,7121). The pupils believe that they had to get support from group members to perform the exercise correctly ( $r=0,320$ ,  $p<0,01$ ). This attitude is normal indeed because not all pupils in learning group have the same musical skills and knowledge, but the rhythm exercise should be performed taking into account the accuracy of each pupil's performance. The pupils believe also that the coordination of their joint activity in the group can strongly affect the accuracy of performing rhythm exercises ( $r=0,334$ ,  $p<0,01$ ). This is connected with the fact that the rhythm exercise should be performed by several group members at the same time, and if they have not the appropriate coordination among them to begin the rhythm exercise combined with metro-rhythmic performance and to finish together, then it is not worth to speak about correct performance of the rhythm exercise.



The highest average score received the following statements, *I have listen to other's opinion* (3,3333), *The group members were friendly* (3,1970) and *I was sure of what I did* (3,1414).

It is important that the children have friendly relationship in the learning group, in order to perform the rhythm exercise correctly ( $r=0,326$ ,  $p<0,01$ ). Listening to another pupils' opinion it could also affect the accuracy of performing rhythm exercise ( $r=0,253$ ,  $p<0,05$ ).

The result of content analysis indicated the factors that may hinder the children's ability to cooperate. These factors could be grouped into three different groups; the first one is connected with the discipline in the learning group, the second one is connected with the child's readiness and willingness to perform the rhythm exercise, and the last group of factors is associated with the other children's ability to perform rhythm exercises.

Pupils believe that the cooperation among them is hindered by the inappropriate discipline like joking and talking around, noises, laughing and other behaviors that is not connected with the given exercise for the group. The cooperation among group members is associated with their individual preparation and the willingness of each pupil to work in the group. The most things that hinder successful cooperation among pupils are their excitement, the inability to concentrate while performing the rhythm exercise, and a digression from the main subject. The rhythm exercise, which does not meet the pupils' musical abilities, could be a disturbing factor for the cooperation among group members. The rhythm exercise could be difficult for all pupils in the group or for some of them. If one of the pupils understood the requirements for performing a concrete rhythm exercise, then he has to explain that for other group members and will try to teach them the right way to perform the rhythm exercise. In this case, the pupils will face several disturbing factors during their cooperation process with each other. On the one hand, those who did not understand the rhythm exercise may refuse to accept their classmate's explanation and support because they consider that as a command. On the other hand, the pupil who believes that he comprehended the requirements to perform the exercise correctly will try to explain it for other pupils and will not consider or respect another group members' opinion. That could lead to conflict situations in learning group. If pupils could not work together and/or unable to coordinate their joint activity, then the cooperation process will be failed. Sometimes it may happen that one pupil refuses to work together with the other group members at performing the rhythm exercise, which can strongly affect the accuracy of the performance.

Cooperation during learning process is a joint activity among pupils. It highlights the mutual coordination of joint activity. Cooperation in classroom implies that pupils should learning from each other, and if needed, they could help and support each other as well. Cooperation during learning process is an important condition in J. Dewey's pragmatic approach to education (Dewey, 2009). In the second half of 20th century several American educators like D.W. Johnson and R.T. Johnson (Johnson, Johnson, 1989), E. Aronson (Aronson, Blaney, 1978) have developed cooperative learning techniques. Cooperation skills are very necessary for each pupil in order to be able to take the right decision in the right time, to learn how to live with other people and to solve different problems every day. The development of cooperation skills is especially important for primary school pupils as expanding the circle of their communication objectives. At this age group begins the formation of children's moral and social habits. Cooperation skills can be actualized, if the pupil comprehends about this skill, why it is necessary for him, and how it can be developed.

The opportunities to improve cooperation skills are closely connected with the pupil's personality development and its peculiarities in different age groups. E. Erikson identified eight stages of psychosocial development that describes how the personality develops and changes from infancy up until death. The fourth stage focuses on the children at primary school age. It is necessary in the primary years to develop the children's abilities and interests, because the child at this age needs to acquire different cognitive and social skills, and he begins to become competent. E. Erikson connected competence with the ability to understand the needed intellect and skills to fulfill tasks without excessive feeling of inferiority (Erikson, 1964).

G.S. Morrison believes that the primary years are a time to use and test developing motor skills. Children at this age should be actively involved in activities that enable them to use their bodies to learn and develop feelings of accomplishment and competence (Morrison, 2015). Rhythm exercises are the appropriate type of activity, which able to use the pupil's motor skills effectively, improve pupil's

competence in music subject and develop the cooperation skills. Cooperation is aimed at achieving one goal of learning. D.W. Johnson and R.T. Johnson believe that cooperation helps more quickly and easily to achieve results than if it would happen individually (Johnson, Johnson, 1989). Pupil's achievement in a cooperative learning group depends on the abilities to prevent conflicts, to learn taking into account other's opinion and to coordinate his activity with the group members. The primary school pupils are highly sensitive children. The learning process and results is often determined by how the child feels emotionally. Therefore, it is strongly recommended to create a comfortable learning environment for children.

## Conclusions

Cooperation is a basic life skill which helps us to work together in group to achieve something or overcome a certain problem. It is needed for everyone's life and must be developed in each age group especially in primary years. The development of cooperation skills could be associated with improving sense of rhythm at the same time. Sense of rhythm could be improved by performing different rhythm exercises. The primary school pupils want to be active and need to continually move, that could be promoted by performing multiform of rhythm exercises. The body movements are not enough to perform rhythm exercises correctly but some music subject related skills and knowledges are required as well.

One of the research questions is to determine if there are a relationship between performing rhythm exercise correctly and the pupils' cooperation skills in learning group. The research identified the relationship between these two variables. The accuracy of performing rhythm exercise connected with such cooperation skills as supporting group members, receiving support from classmates and the ability to coordinate joint activity. The activity in learning group could be good coordinated if pupils have the ability to respect other's opinion and if they have friendly relationship. Performing rhythm exercise correctly is also associated with pupils' satisfaction with their activity in a certain group, responsible attitude to teaching work and the ability to coordinate what and how better to do the joint activity.

The research determined that pupils' satisfaction with their participation in a certain learning group could be affected by the possibilities to get support from group members, the ability to coordinate joint activity and the friendly relationship between group members.

The third research questions intended to determine the disturbing factors of cooperation process. It is identified the factors, that could hinder cooperation among pupils, are associated with pupils' discipline in learning group, the individual preparation of each pupil and the readiness of the whole group to perform the rhythm exercise correctly.

## Bibliography

1. Aronson E., Blaney N., Stephin C., Sikes J., Snapp M. (1978). *The Jigsaw Classroom*. Beverly Hills, CA: Sage Publications.
2. Bebru J. (1922). *Dziedāšanas mācības metodika (Teaching Methodology of Singing)*. Rīga: A.Gulbis. (in Latvian)
3. Campbell P.S. (1991). Rhythmic Movement and Public School Music Education: Conservative and Progressive Views of the Formative Years. *Journal of Research in Music Education*, Vol. 39(1), pp. 12 – 22.
4. Chemin B., Mouraux A., Nozaradan S. (2014). Body Movement Selectively Shapes the Neural Representation of Musical Rhythms. *Psychological Science*, Vol. 25(12) pp. 2147 – 2159.
5. Dewey J. (2009). *Democracy and Education: An Introduction to the Philosophy of Education*. New York: Cosimo Classics.
6. Douglas T., North R. (2005). Musicals Enrich Middle School Programs. *National Middle School Association, Middle Ground*, Vol. 3, pp. 43 – 44.
7. Eidiņš A. (1974). *Muzikālās audzināšanas metodika (Musical Education Methodology)*. Rīga: Zvaigzne. (in Latvian)
8. Erikson E.H. (1964). *Insight and Responsibility*. New York: W.W.Norton & Company, Inc.
9. Hallam S. (2010). 21<sup>st</sup> Century Conceptions of Musical Ability. *Psychology of Music*, Vol. 38(3), pp. 308 – 330.
10. Johnson D.W., Johnson R.T. (1989). *Cooperation and Competition: Theory and Research*. Edina MN, US: Interaction Book Company.

11. Kirnarskaya D. (2009). *The Natural Musician: On Abilities, Giftedness and Talent*. (1<sup>st</sup> ed.). Oxford: Oxford University Press.
12. Matthews D.R., Ubbes V.A., Freysinger V.J. (2016). A Qualitative Investigation of Early Childhood Teachers' Experiences of Rhythm as Pedagogy. *Journal of Early Childhood Research*, Vol. 14(1), pp. 3 – 17.
13. Mediņš J., Jākobsone I. (1958). *Dziedāšanas mācīšanas metodika I-IV klasei (Teaching Methodology of Singing for Grade 1 - 4)*. Rīga: Latvijas Valsts izdevniecība. (in Latvian)
14. Morrison G.S. (2015). *Early Childhood Education Today*. (13<sup>th</sup> ed.). Harlow: Pearson.
15. Nelsone I., Rozenberga L., Platpers A. (1995). *Mūzikas mācība 2. klasei (Music Lessons for Grade 2)*. Rīga: Musica Baltica Ltd. (in Latvian)
16. *Noteikumi par valsts pamatizglītības standartu, pamatizglītības mācību priekšmetu standartiem un pamatizglītības programmu paraugiem (Regulations of the National Standard in Primary Education and the Primary Education Subjects Standards and Program Samples)*. (2004). MK noteikumi Nr.468 no 12.08.2014. Rīga: LR MK. [online] [25.10.2016]. Available at <http://likumi.lv/doc.php?id=268342> (in Latvian)
17. Rozītis J. (1927). Dziedāšana koncentrācijas mācībā (Singing in Concentration Lesson). *Mūsu nākotne*. Nr.17, 529. – 533. lpp. (in Latvian)
18. Rozītis J. (1929). *Dziedāšanas mācības metodika (Teaching Methodology of Singing)*. Rīga: Valters un Rapa. (in Latvian)
19. Stabulniece A. (1997). *Metodiskie norādījumi mūzikas mācībā 2. klasei (Methodological Guidelines for Music Lessons for Grade 2)*. Rīga: Zvaigzne ABC. (in Latvian)
20. Stankov L., Spilsbury G. (1978). The Measurement of Auditory Abilities of Blind, Partially Sighted and Sighted Children. *Applied Psychological Measurement*. Vol. 2(4), pp. 49 – 503.
21. Vilkārse I., Čerpinska I. (2000). *Mūzika 1. klasei (Music for Grade 1)*. Rīga: Zvaigzne ABC. (in Latvian)
22. Бергер Н.А. (2004). *Современная концепция и методика обучения музыке (Modern Concept and Music Teaching Methodology)*. С.-Петербург: КАРО. (in Russian)
23. Старчеус М.С. (2005). *Слух музыканта: психолого-педагогические проблемы становления и совершенствования (Musician's Hearing: Psychological and Pedagogical Problems of Formation and Perfection)*. Автореферат диссертации. Москва: Московская государственная консерватория им. П.И. Чайковского. (in Russian)
24. Тарасова К.В. (1988). *Онтогенез музыкальных способностей (The Ontogeny of Musical Abilities)*. Москва: Педагогика. (in Russian)

## Adolescents' Mathematical Competence Formation Influencing Factors

Aleksandrs Vorobjovs Md. Ed.

University of Latvia, Latvia

[aleksandrs.vorobjovs@gmail.com](mailto:aleksandrs.vorobjovs@gmail.com)

**Abstract:** Mathematical competence has been identified worldwide as one of the key competences for personal fulfilment, social and economic inclusion in the knowledge society of the 21st century. Most European countries, including Latvia, are transforming their education systems, so it is very important to have a valid understanding of adolescents' mathematical competence, yet it is not defined. Some of the discovered factors that influence this competence are currently neglected in terms of education reforms, so this article is timely, urging to think over the essential accents of the change. The article also questions the previous experience of transforming mathematics teaching – reviewing current national policies for developing the key competences for lifelong learning. Many countries, including Latvia, have come across a disproportion of substantial investments into teaching mathematics and, despite this, low pupil performance. The aim of the article is to determine factors of the formation process of the pupils' mathematical competence. To explore it, during the study the most popular approaches on defining mathematical competence have been compared. These approaches have many differences, but also five closely related factors. Firstly, it is the way of teaching and learning. Some researchers believe, the style of teachers' work, views and personality traits are most crucial. Secondly, learning materials, including textbooks and online resources encouraging the pupils to work more independently. The third factor to be discussed in the article is the pupils' individual characteristics: motivation, attitude, persistence, values. Speaking of persistence, it is believed to be more important than being talented. Next factor is the learning environment, both at school and beyond it: at home, on a trip, while shopping. Despite the fact that mathematical competence is not normally measured in these everyday situations, it is gained through these practical activities. Finally, the society brings many stereotypes and influences views on mathematics as too hard or boring to go deep in it. All these (and other) factors can be turned to support formation of mathematical competence, instead of blocking it. The article will reveal how these factors are linked and how they are helpful.

**Keywords:** mathematical competence, formation, model, school education, 8<sup>th</sup> graders.

### Introduction

The role of schools in the modern sense is to prepare pupils for successful fulfilment of their skills in the fast changing life and to gain willingness to continue learning throughout their lives. Today's pupils' success in their future careers largely depends on their knowledge, skills, abilities, motivation and other factors – in one word it can be called competence.

United Nations Educational, Scientific and Cultural Organization (UNESCO) named mathematical competence as one of the most crucial competencies. It is also identified as one of the key competences by the European Union with an aim to decrease the share of 15-year-olds with insufficient abilities in reading, mathematics and science below 15 % by 2020. (Strategic Framework..., 2009). In 2015 the share of low achievers in mathematics (below level 1 and level 1 combined) was 22,1 % (it was the same also in 2012), but it differs dramatically around the world (Eurostat, 2016). For instance, in Estonia only 11,2 % of pupils are low achievers in math, in Latvia – 21,5 %, but the worst figure in Eurasia is in Turkey – 51,3 %; across the world it is in Mexico – 56,6 % (Table 1).

Researchers are concerned not only about the lack of knowledge, but also about the breakdown of results – it is far from the normal distribution. Approximately one fifth of Latvian 8<sup>th</sup> graders could not solve even the easiest mathematical tasks in the Programme for International Student Assessment (PISA) test. Meanwhile, the share of the highest performing pupils in mathematics is only 0,7 % (it was 1,5 % in 2012), when the average in the Organisation for Economic Co-operation and Development (OECD) countries is more than twice higher – 2,3 % (Geske, Grīnfelds, 2016).

To check if the data from PISA is correct, in 2014 Latvia organized test on some components of mathematical competence such as outer communication, which includes ability to express ideas, using accurate mathematical terminology, critical thinking, modelling and problem solving. The statistics were quite shocking – 90,9 % of pupils could do the task, but only 40,4 % could explain what they are

doing in writing. Pupils know the algorithm, but do not know, why it works. Pupils also did not even try to solve tasks, where they are supposed to model tasks with practical content and which does not have one correct answer (Vilciņš, 2015).

Table 1

**Percentage of students below Level 1, at Level 1 and at Level 6 in mathematics** (OECD, 2016)

Country	Below Level 1	Level 1	Level 6
Estonia	2.2	9.0	2.9
Japan	2.9	7.8	
Denmark	3.1	10.5	5.3
Finland	3.6	10.0	2.2
Germany	5.1	12.1	2.9
Korea	5.4	10.0	6.6
Latvia	5.7	15.8	0.6
United States	10.6	18.8	0.9
Turkey	22.9	28.4	0.1
Mexico	25.5	31.1	0.0

Mostly due to these numbers, over the last decade mathematical competence has become one of the most important educational priorities at the European policy level. In recent years, but especially since 2007, an overwhelming majority of European countries have revised mathematics curriculum with the introduction of results-based approach, where the focus is on pupils' competencies and skills rather than on theoretical knowledge. Latvia is also approaching to implement competence based education starting with 2018, foremost in primary schools and then in 10 years leading to the high school.

Additionally, the issue of mathematical competence is now in the spotlight thanks to ongoing secondary school curriculum reform. The main difference of targeted competence based education versus the current content is that the pupil should be able not only to apply the given formulas for a specific task, but also to recognize and define the problem, choose the appropriate method to solve the problem, to use a method in a new unfamiliar situation, assess the significance of solving the problem. To fulfil this aim schools are about to switch from subjects oriented content to transversal competences, while subject is only a way to develop different competencies (Oliņa, 2015).

The aim of the article approach to determine factors of the formation process of the pupils' mathematical competence. In terms of reforming Latvian education, it is particularly important to summarize recent theoretical findings on mathematical competences, to highlight factors that influence mathematical competence and show their interdependencies.

## Methodology

To identify the factors affecting mathematical, the history of the term "competence" in global and Latvian literature has been explored. After some debate on different explanations of this term the definition by Tatjana Koķe has been chosen as the basic: competence is the ability to choose the most appropriate tools to the situation or the operation, based on the knowledge, and to adequately apply them (Koķe, 2003). This definition was formulated for a research on continuous education. It is much broader and more general than other explanations, where competence includes knowledge, skills and attitudes that qualify to do some work or level of task.

Most definitions of mathematical competence (Niss, 2011; Turner, 2011; Laursen, 2010; Casserly, 2012; Balčiūnas, Macaitienė, 2013) have some basic things in common, for instance, almost every definition mentions such skills like communication, problem solving, modelling and reasoning, while there are still some aspects, that are unique – personality traits like persistence and curiosity are cited only in a few formulations of mathematical competence.

Usually mathematical competence is explained through listing certain skills and behaviour. Almost every definition formulated in this decade includes a reference on using mathematical skills in diverse

contexts. Trying to ease and speed up processing of data some authors use interpretation of mathematical competence as an average ability to solve different tasks, which is usually converted into points or percentage. Finally, other researchers highlight normally three or four mathematical content fields and make conclusions about mathematical competence of a pupil based on results in chosen topics.

Based on the exploration of evolution of the understanding of the term “competence” and different attempts to define mathematical competence in different contexts, the definition of adolescents’ mathematical competence was composed:

Adolescents’ mathematical competence is the ability to initiate, responsibility and self-confidence to perceive, understand and address the diverse situations, to operate in quantitative and generalized patterns; critically evaluate and justify the results, which are able to anticipate result before a solution.

To have a common sense about these definitions is especially crucial now, when Latvia is in the way to undergo a huge, ambitious reform of school compulsory content. It has to become more competence based, involve pupils in more active ways of learning, give them the opportunity to gain their own knowledge. It emphasizes from the teacher in the centre of the learning process to pupil as the main figure in learning.

The main idea of the reform is to motivate teachers to cooperate more and to review subjects’ curriculum, leaving only the content that is relevant and meets today’s needs. This project is in its early stages, so it is timely to discuss, if these two factors – cooperation of teachers and reviewing the content – do affect mathematical competence the most and which closely related factors are out of the focus, but should be at least discussed, if not included in the final model of competence based education in Latvia.

Previous major project in mathematics education shows, that these two factors alone are not enough. 50 schools in Latvia since 2008 have participated in a pilot project on improving the quality of teaching science, mathematics and technology in secondary schools. Project was held by the Science and Mathematics Education Centre of the University of Latvia (DZM). While working on improvement of mathematics teachers’ teaching skills and popularizing the idea of pupil centred learning, from 2008 to 2015 DZM experts observed 205 mathematics and science lessons.

The results are frustrating. Observers found out that even teachers, who are in this project and receive guidance on competence centred education, reproductive and superficial learning process still dominated. During the lessons pupils had limited options of higher cognitive level activity. Lessons are mainly (52 %) frontal, they mostly give pupils “ready knowledge” (Namsone, 2015). This shows that even accordingly trained teachers theoretically agree with the centuries-old idea of reform pedagogy that teachers should not give anything ready to their pupils but motivate them to observe, analyse, compare, combine, model, make concepts, but teachers usually still do not follow these recommendations.

DZM project also concentrated on communication as a crucial skill for both teachers and pupils. According to the project design, teachers were about to learn to express their thoughts precisely and in short, while pupil – to explain their ideas and results, using appropriate terminology. Despite this, research shows that conclusions are still made by the teachers, pupils do laboratory tests following particular steps. If pupils are struggling with laboratory tests, teachers usually do the step instead of them or give direct instruction instead of asking questions that could help the pupils to come up with the correct idea.

In short, this pilot project shows that improving content and teaching teachers some theories and technics of teaching does not improve the overall experience in education, because the teachers do not change their style of teaching. Thanks to this project, teachers cooperated in small groups, discussing the aim of the lesson, its strong aspects and needs of improvement, but improving effect on lessons of these activities was disproportional to the time spent, as teachers did not feel free to express their criticism so everyone got a mostly doubtful or sometimes even wrong impression that they are doing well: believe that their way of teaching is appropriate for teaching scientific inquiry while in fact lesson focuses on applying what has been learned through a sample.

## Results and discussion

Using the definition of adolescents' mathematical competence and findings of respectable mathematician methodologists (Колмогоров, 1988; Пуанкаре, 1990; Dieudonné, 1975), the model of mathematical competence crystallized, showing factors that influence mathematical competence (Figure 2).

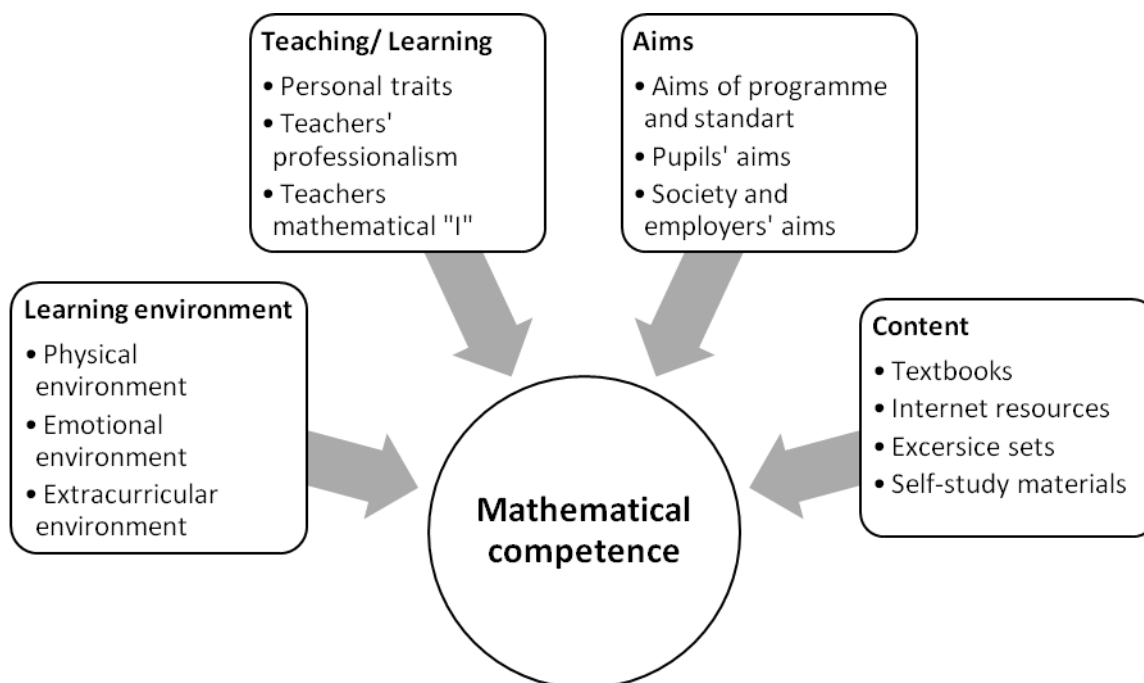


Figure 2. Factors influencing mathematical competence.

The analysis of literature shows that besides the teaching style, cooperation and relevant content, there are many other factors influencing learning in general and gaining mathematical competence in particular. Most authors are concerned that formation of mathematical competence depends on the **learning environment** (Fernāte, 2011; Geske, Grīnfelds, 2016; Wood, 1998; Kahneman, 2011; Hattie, 2012; Eurydice, 2011; Cunska, 2013). The involvement of physical environment into teaching mathematics gives a platform for more stable knowledge. It also leads to higher motivation, for example, if the posters of pupils are used to give more mathematical sense to walls of a classroom, pupils do not only learn necessary facts through the physical environment, but also improve their emotional environment – celebrating small victories this way gives pupils a conviction that they can be successful in mathematics. Lack of self-confidence is a very strong obstacle in learning mathematics. As a part of the learning environment extracurricular environment should also be mentioned. Friends, groups of interests and sports clubs affect how easily pupils can apply mathematics in many different situations and contexts, because they can judge and model from their own experiences.

The next factor that influences mathematical competence is **teaching and learning**. The discussion at the moment is mainly on teaching – cooperation of teachers, new worksheets, different tests and exams – but the researches show that learning should not be neglected. Many authors (Колмогоров, 1988; Tough, 2012; Mencis, 2010) stress the importance of personal traits of pupils. P. Tough is convinced that persistence and curiosity alone outweigh all other factors of learning. Meanwhile, A. Kolmogorov claimed that mathematics intuition and willingness to learn are more important than, for example, ability to memorize large amounts of information, facts, formulas. There are plenty of researches and recommendations on how teachers should study and teach (Љubkina, 2007; Lāce, 2010; Hattie, 2012; Upīte, 2013). The problem appears to be the implementation of these ideas, since teachers reject change or lack knowledge to use these methods.

The aims are the third part of mathematical competence model is **aims**. It includes many types of aims that altogether impact the formation of mathematical competence. First, those are aims of the education program and standart. Both are usually general to meet needs of different schools and pupils. Second, aims of the pupil. This includes motivation to learn, vision of applying school curriculum later in



profession or everyday life. Third, the opinion of the society on what should be taught in school. When reforming education system or even a part of it should be kept in mind, that speaking about education society has a tendency to be conservative, to require the same methods and content of learning that adults remember from their experience in school, but which should also prepare pupils for inclusion and effective work in future society and more specific – labour market. If all these and many other aims related to education can be combined, pupils normally gain the highest possible result. Good practice example of aim based education system is, for instance, Norway (Education – from..., 2007).

**The Content** is the fourth component of this model. Undoubtedly, textbooks and other resources pupils use while learning are extra important (Cunška, 2013; France, 2010; Niss, 2011). Content is one of the ways how to provoke and maintain the interest about learning.

## Conclusions

Mathematical competence is undoubtedly one of the crucial competences for persons' fulfilment throughout the life. Despite this, adolescents' mathematical competence is a concept explored by few researchers. Exploring existing definitions of mathematical competence, the model of formation of mathematical competence has been created. Description of the model includes analysis of currently accented components of mathematical competence. Based on researches in pedagogy and other fields, the missing components of this model are identified in context of ongoing secondary school curriculum reform towards competence based education. Summarizing this theoretical research adolescents' mathematical competence has been defined.

## Bibliography

1. Balčiūnas S., Macaitienė R., Gerulaitienė E., Vintere A., Zeidmane A., Pailiņš N. (2013) *Matemātikas kompetenču attīstība augstākās izglītības iestādēs sociāli ekonomiskajā kontekstā (MatNet) (Development of Mathematical Competencies in Higher Education Institutions within Socio-economical Context: Methodical Recommendations for Lectures (MatNet))*. (CD) Jelgava: Latvijas Lauksaimniecības Universitāte. Šauļi: Šauļu Universitāte. (in Latvian)
2. Casserly M. (2012). *The 10 Skills That Will Get You Hired In 2013*. Forbes. [online] [08.02.2017]. Available at <https://www.forbes.com/sites/meghancasserly/2012/12/10/the-10-skills-that-will-get-you-a-job-in-2013/#50cadcaf633d>
3. Cunška A. (2013). *IKT lietojuma iespējas matemātikas mācīšanā skolā (Possibilities of ICT Uses for the Teaching of Mathematics at School)*. Doctoral Thesis in Mathematics. Rīga: University of Latvia. (in Latvian)
4. Dieudonné J. (1975). *L'abstraction et l'intuition mathématique (Abstraction and Mathematical Intuition)*. Bienne: Dialectica, Vol. 29, pp. 39 – 54. (in French)
5. *Education – from Kindergarten to Adult Education*. (2007). Oslo: Norwegian Ministry of Education and Research. [online] [08.02.2017]. Available at [https://www.udir.no/Upload/Brosjyrer/5/Education\\_in\\_Norway.pdf?epslanguage=no](https://www.udir.no/Upload/Brosjyrer/5/Education_in_Norway.pdf?epslanguage=no)
6. Eurostat (2016). *Europe 2020 indicators – education*. [online] [08.02.2017]. Available at [http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe\\_2020\\_indicators\\_-\\_education](http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-_education)
7. Eurydice (2011). *Mathematics Education in Europe: Common Challenges and National Policies*. Brussels: Education, Audiovisual and Culture Executive Agency. [online] [08.02.2017]. Available at [http://eacea.ec.europa.eu/education/eurydice/documents/thematic\\_reports/132en.pdf](http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/132en.pdf)
8. Fernāte A. (2011) *Pamatskolu beidzēju analītiskā kompetence (Analytical Competence of Primary School Graduates)*. Rīga: University of Latvia, Aarhus University, Danish School of Education. [online] [08.02.2017]. Available at [http://www.eduinf.lv/pzi/files0/ANALITISKA\\_KOMP\\_20\\_5\\_2011\\_LU\\_PPMF\\_PZI.pdf](http://www.eduinf.lv/pzi/files0/ANALITISKA_KOMP_20_5_2011_LU_PPMF_PZI.pdf) (in Latvian)
9. France I. (2010). *Matemātika 1. – 9.klasei. Mācību priekšmeta programmas paraugs (Curriculum of Mathematics for Grade 1 to 9)*. Rīga: ISEC. [online] [08.02.2017]. Available at [http://www.visc.gov.lv/vispizglitiba/saturs/dokumenti/programmas/pamskolai/mat1\\_9.html](http://www.visc.gov.lv/vispizglitiba/saturs/dokumenti/programmas/pamskolai/mat1_9.html) (in Latvian)
10. Geske A., Grīnfelds A., Kangro A., Kiseļova R. (2016). *Latvija OECD Starptautiskajā skolēnu novērtēšanas programmā 2015 – pirmie rezultāti un secinājumi (Latvia in OECD International*



- Pupil Assessment Program 2015 – Preliminary Results and Conclusions*). Rīga: University of Latvia. [online] [08.02.2017]. Available at <http://www.ipi.lu.lv/publikacijas/> (in Latvian)
11. Hattie J. (2012). *Visible Learning for Teachers: Maximizing Impact on Learning*. New York: Routledge.
  12. Kahneman D. (2011). *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.
  13. Koķe T. (2003). *Nepārtrauktā izglītība: galvenie uzdevumi un to īstenošana. Nepārtrauktās izglītības sociāli pedagoģiskie aspekti (The Main Tasks of Continuous Education and their Implementation. Socio-Pedagogical Aspects of Continuous Education)*. Rīga: SIA Izglītības solī. (in Latvian)
  14. Laursen K. B. (2010). *Competence Driven Teaching of Mathematics*. Copenhagen: Institute of Mathematical Sciences, Centre for Science Education, University of Copenhagen.
  15. Lāce G. (2010). *Latvijas pamatskolas matemātikas skolotāju kompetence matemātikas didaktikā (Latvian elementary school mathematics teacher competence in mathematics didactics)*. Doctoral Thesis. Rīga: University of Latvia. (in Latvian)
  16. Ļubkina V. (2007). *Kompetenču paaugstināšana skolotājiem jaunā pamatzglītības standarta realizēšanai vispārīgizglītojošā skolā (Enhancing the competence of teachers in the new basic education standard for implementation in a comprehensive school)*. Rēzekne: Rēzekne Higher Education Institution. (in Latvian)
  17. Mencis J. (2010). *Matemātika kā vērtība un matemātika kā līdzeklis (Mathematics as a value and as a means of mathematics)*. Rīga, University of Latvia. (in Latvian)
  18. Namsone D. (2015). *Kāds ir ceļš uz kompetences attīstošu mācīšanos? (What is the path to the competences evolutionary learning?)*. Rīga: University of Latvia. (in Latvian)
  19. Niss M. (2011). Curriculum, Assessment, Teacher Training, Skills. The Danish KOM Project and Possible Consequences for Teacher Education. Costa Rica: *Journal of Research and Training in Mathematics Education*, Vol. 9, pp 13 – 24.
  20. Oliņa Z. (2015). *Vispārējās izglītības obligātā satura apraksts (General Overview of the Content of Compulsory Education)*. Rīga: VISC. (in Latvian)
  21. OECD (2016). *PISA 2015 Results (Volume I): Excellence And Equity In Education*. Paris: PISA, OECD Publishing [online] [08.02.2017]. Available at <http://dx.doi.org/10.1787/9789264266490-en>
  22. Tough P. (2012). *How Children Succeed – Grit, Curiosity and The Hidden Power of Character*. New York: Houghton Mifflin Harcourt.
  23. Turner R. (2011). Exploring Mathematical Competencies. *Research Developments*, Vol. 24.
  24. *Strategic Framework for European Cooperation in Education and Training ‘ET 2020’*. (2009). Council Conclusions on May, 12, 2009, OJC 119. [online] [08.02.2017]. Available at [http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52009XG0528\(01\)](http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52009XG0528(01))
  25. Upīte J. (2013). *Skolotāju izglītības programmas ietekme uz skolēnu attieksmi pret pedagoga profesiju (Teacher Education Program's Impact on Pupils' Attitudes Towards Teacher Profession)*. Rīga: University of Latvia. (in Latvian)
  26. Vilciņš J. (2015). *Diagnosticējošais darbs matemātikā 8. klasei: skolēnu rezultātu un snieguma analīze (Diagnostic Work in Mathematics for 8th Grade: Pupils' Results and Performance Analysis)*. Rīga: VISC. [online] [08.02.2017]. Available at [http://visc.gov.lv/vispizglitiba/eksameni/dokumenti/metmat/2014\\_2015\\_ddarbs\\_matem\\_8kl\\_analize.pdf](http://visc.gov.lv/vispizglitiba/eksameni/dokumenti/metmat/2014_2015_ddarbs_matem_8kl_analize.pdf) (in Latvian)
  27. Wood D. (1998). *How Children Think and Learn*. (2nd ed.). Oxford: Wiley-Blackwell Publishers Ltd.
  28. Колмогоров А. (1988). *Математика – наука и профессия (Mathematics – Science and Profession)*. Москва: Наука. (in Russian)
  29. Пуанкаре А. (1990). *О науке (About Science)*. (2-е изд.). Москва: Наука. (in Russian)

## Use of Videos to Support Teaching and Learning in the Study Process

Natalia Vronska Dr. paed.  
Latvia University of Agriculture, Latvia  
[natalja.vronska@llu.lv](mailto:natalja.vronska@llu.lv)

**Abstract:** Teachers use various modern educational tools such as an Internet, smartboard, multimedia and videos along with traditional lectures to ensure an optimum student-learning environment. The global adoption of new technologies into education provides an opportunity for modernising of studies. Learning videos make it possible for students to see and revisit complex activities from multiple perspectives. *The aim of this article* was to explore the use of videos to support teaching and learning in education in Latvia University of Agriculture. The study was conducted at the Latvia University of Agriculture (LUA) during October 2016. All of the students in this study were between 18 and 24 years old. A validated questionnaire containing 10 questions was distributed to 220 respondents from the Latvia University of Agriculture. A questionnaire was developed to obtain respondents' opinions about the usefulness of videos in teaching and learning in the educational process. The first eight questions, related to the usefulness of learning videos during lectures, required dichotomized (agree/disagree) responses. The last two questions about Internet use were provided with multiple response options. The data were analysed statistically by using SPSS computer program – *chi-squared test, contingency table or crosstab, Wilcoxon signed-rank test*. The overall conclusion after data analysis is that all respondents use the Internet, the respondents from the Faculty of Veterinary Medicine (61.9 %) use it most of all. It could be explained that the students have a lot to learn and the most recent literature on Veterinary Medicine can be found in the Internet global databases. Students consider (p-value is 0.001) the supplement of learning video in the lecture is helpful and lectures with video are clearer than without them. Learning video helps to remember the content of lecture better; it helps to maintain the interest in the lecture. The acquired knowledge from the learning video can be used to reproduce and study learning content easy; and it is stored for a longer time compared with lectures without the video.

**Keywords:** videos, university education, Internet, information and communications technology.

### Introduction

The rapid changes of life require a support for continuous learning and ongoing creation of new ideas and skills. The lifelong education becomes a necessity in tomorrow's world. Thanks to Internet, the education process changed significantly in last two decades. Internet and information and communication technologies have greatly expanded into the field of education in last two decades. The global adoption of new technologies into education provides an opportunity for modernising of study process (Virtič, 2012).

Information and communications technologies are increasingly influencing the delivery of education in tertiary institutions (Arguel, Jamet, 2009; Johnson, List-Ivankovic, 2010) and they are attractive to contemporary students who have been exposed to technology use from an early age (Duncan, Yarwood-Ross, 2013; Kelly, Lyng, 2009).

The Internet helps students develop their computer skills. In some forms the Internet can help students with critical thinking skills. Students are faced with more information than they could ever use or need. This requires them to sort through the information and decide what is most important and relevant (Deore, 2012).

Video technology has several advantages, including the capability to be forwarded, reversed and watched repetitively at the user's convenience (Ramlogan, Raman, 2014).

Learning videos make it possible for students to see and revisit complex activities from multiple perspectives (Brophy, 2003; Wetzel, Radtke, 1994).

Interactive teaching methods allow one to accelerate the process of understanding, mastering and creative application of knowledge to solve real-world problems. Efficiency is achieved through more active involvement of students in the process of not only acquisition, but also the direct use of knowledge. Interactive learning increases motivation and involvement of participants in solving the issues discussed,

giving an emotional boost to the subsequent search activity of participants, encourages them to action; the learning process becomes more meaningful (Панина, Вавилова, 2008).

It is possible to carry out both practical classes (seminar) and lectures in the interactive learning form. For example, the following can be distinguished:

- *problem lecture* – the lecturer creates problematic situations on the beginning of lecture and during the presentation of educational material involves students in analysis;
- *provocation lecture* - lecture with pre-determined errors – at the beginning of lecture the lecturer announces that there will be deliberately included mistakes; students should find and list them on the end of lecture;
- *"press conference" lecture* – the lecturer asks students to ask him a question of interest on the announced topic of the lecture; during the lecture the lecturer incorporates the answers to the questions;
- *dialogue lecture* – the learning content is taught through a series of questions that students must answer directly during the lecture;
- *visualization lecture* – the transfer of information from the lecturer to students is accompanied with presentation of various graphics, video information using IT technologies (Аронова, 2012).

Visualization lecture emerged as a result of the search for new opportunities to implement the principle of visualization. Visualization contributes to the successful perception and memorization of training material; it happens due to the work of both cerebral hemispheres. The left brain hemisphere is responsible of logical thinking, usually it is employed during acquiring of the exact sciences. The right hemisphere is responsible for the figurative and emotional perception of the presented information and it begins to work actively with its visualization.

This type of lectures also implements a didactic principle of accessibility: an ability to combine visual and verbal information perception. The difficulty of the perception of the study material is caused by presentation of theoretical concepts, abstract processes and phenomena. Visualization makes it possible to vastly overcome this difficulty and to turn abstract concepts in a clear, understandable way.

S. Kolkov (Колков, 2012) has developed a classification of learning videos (Figure 1). S. Kolkov (Колков, 2012) recognizes that recorded lecture and video lecture are different training video materials.

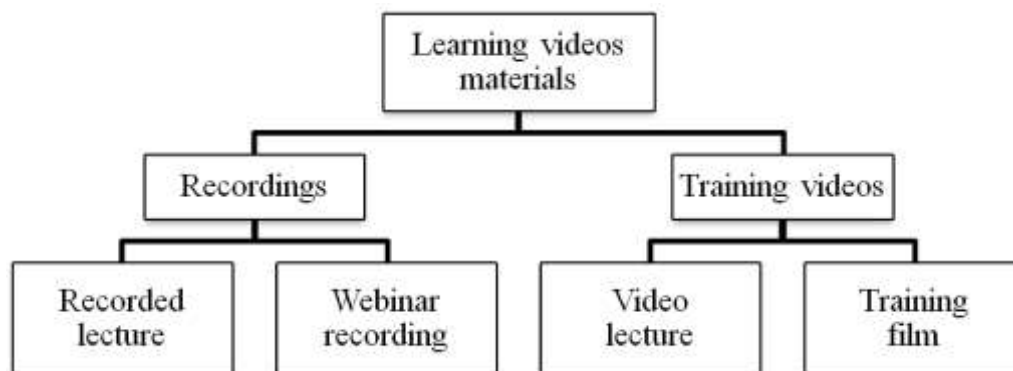


Figure 1. Classification of learning videos materials (Колков, 2012).

Recordings - Yesterday there was a class, but I was not able to participate. Classmates visited the class, filmed everything and posted on the Internet, and now I can watch it.

Training videos are specifically prepared for viewing on a big size screen (or not a big one) in full-time, part-time or distance learning, both in groups and individually.

The difference between the video lecture and training film is in the foreground. In the video lecture the lecturer should be in the foreground! And he/she should occupy most of the screen. Materials illustrating the performance can be a background.

The training film demonstrates a process and/or events and/or unit in the foreground. Conversely, the background can be the voice of the announcer (Колков, 2012).

The aim of the article was to explore the use of videos to support teaching and learning in education in Latvia University of Agriculture.

### Methodology

The study was conducted at the Latvia University of Agriculture during October 2016. All of the students in this study were between 18 and 24 years old. A validated questionnaire containing 10 questions was distributed to 220 respondents from the Faculty of Information Technologies, the Faculty of Food Technology, the Faculty of Economics and Social Development, the Faculty of Environment and Civil Engineering, the Forest Faculty, the Faculty of Agriculture, the Faculty of Veterinary Medicine, and the Faculty of Engineering. The questionnaire was given to first-year students by selecting them randomly.

A questionnaire was developed to obtain respondent opinions about the usefulness of videos in teaching and learning in the educational process. The first eight questions, related to the usefulness of learning videos during lectures, required dichotomized (agree/disagree) responses. The last two questions (Internet use) were provided with multiple response options.

The data were analysed statistically by using SPSS computer program – *chi-squared test* (test where in the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true), *contingency table or crosstab* (table in a matrix format that displays the (multivariate) frequency distribution of the variables; *crosstab* provide a basic picture of the interrelation between two variables and help find interactions between them), *Wilcoxon signed-rank test* (used when comparing two related samples to assess whether their population mean ranks differ).

### Results and discussion

Teachers used various modern educational tools such as an Internet, smartboard, multimedia and videos along with traditional lectures to ensure an optimum student learning environment.

An overview of the questionnaire (with answers of respondents from Latvia University of Agriculture (LUA)) about Internet use in the educational process is given in Figure 2, where can see a clustered bar chart, where was compared respondents' assessment depending on the faculty.

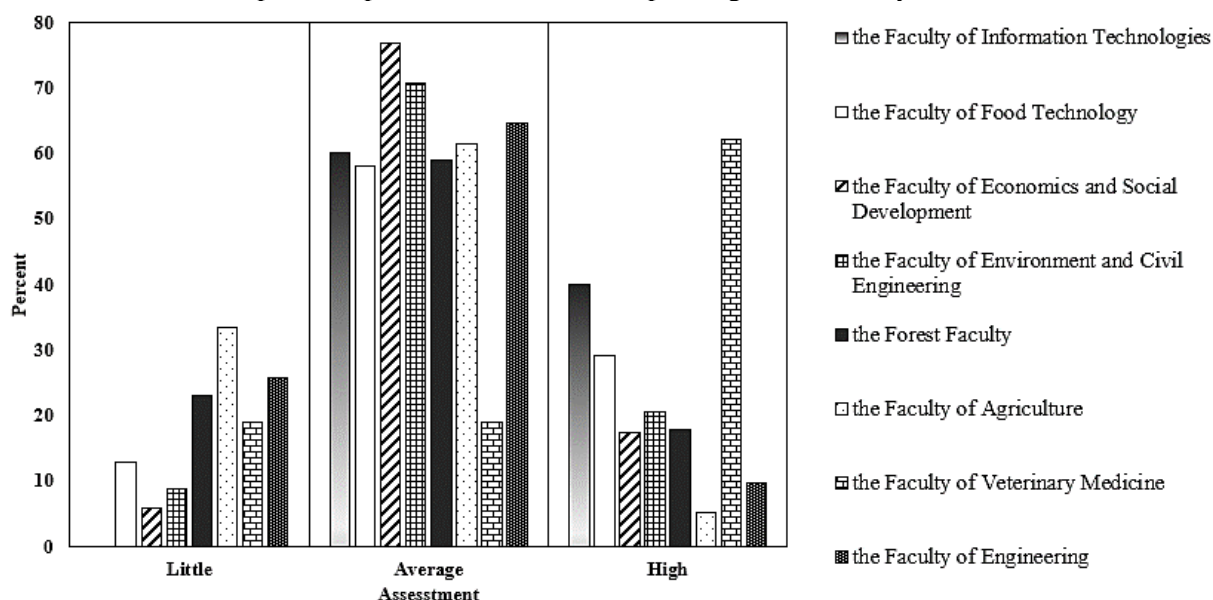


Figure 2. Respondents' assessment on using the Internet depending on the faculty.

High assessment or much use the Internet 40.0 % of respondents from the Faculty of Information Technologies, 29.0 % of respondents from the Faculty of Food Technology, 17.3 % of respondents from the Faculty of Economics and Social Development, 20.6 % of respondents from the Faculty of Environment and Civil Engineering, 17.9 % of respondents from the Forest Faculty, 5.1 % of

respondents from the Faculty of Agriculture, 61.9 % of respondents from the Faculty of Veterinary Medicine, 9.7 % of respondents from the Faculty of Engineering.

Average are using the Internet 60.0 % of respondents from the Faculty of Information Technologies, 58.1 % of respondents from the Faculty of Food Technology, 76.9 % of respondents from the Faculty of Economics and Social Development, 70.6 % of respondents from the Faculty of Environment and civil Engineering, 59.0 % of respondents from the Forest Faculty, 61.5 % of respondents from the Faculty of Agriculture, 19.0 % of respondents from the Faculty of Veterinary Medicine, 64.5 % of respondents from the Faculty of Engineering.

Low assessment or little use the Internet 0.0 % of respondents from the Faculty of Information Technologies, 12.9 % of respondents from the Faculty of Food Technology, 5.8 % of respondents from the Faculty of Economics and Social Development, 8.8 % of respondents from the Faculty of Environment and Civil Engineering, 23.1 % of respondents from the Forest Faculty, 33.3 % of respondents from the Faculty of Agriculture, 19.0 % of respondents from the Faculty of Veterinary Medicine, 25.8 % of respondents from the Faculty of Engineering.

To summarize the relationship between two categorical variables *Faculty* and *Assessment*, the most accurate answer is given in Table 1, where contingency table was used for data analysis.

Table 1

**The relationship between two categorical variables *Faculty* and *Assessment* (%)**

Faculty	Assessment		
	Low	Average	High
the Faculty of Information Technologies	0.0	3.8	7.4
the Faculty of Food Technology	9.1	11.3	16.7
the Faculty of Economics and Social Development	6.8	25.2	16.7
the Faculty of Environment and Civil Engineering	6.8	15.0	13.0
the Forest Faculty	20.5	14.5	13.0
the Faculty of Agriculture	29.5	15.1	3.7
the Faculty of Veterinary Medicine	9.1	2.5	24.0
the Faculty of Engineering	18.2	12.6	5.5
<b>Total</b>	100.0	100.0	100.0

As the percentage distribution is different, it can conclude that there is a relationship between two categorical variables *Faculty* and *Assessment*.

To test whether the relationship is significant was use contingency table *Pearson Chi-square* analyzes. The fact that the *Pearson chi-square* value is 0.001 and less than 0.05 indicates that the rows and columns of the contingency are dependent.

In this particular case, it means that the variable *Faculty* is not distributed similarly across the different respondents' assessment.

The overall conclusion after data analysis is that all respondents use the Internet, the respondents from the Faculty of Veterinary Medicine (61.9 %) use it most of all. It could be explained that the students have a lot to learn and the most recent literature on Veterinary Medicine can be found in the Internet global databases.

B. A. Al-Jandan, I. Farooq and S. Q. Khan conducted a questionnaire on related to the usefulness of videos during lectures. In general, a very high percentage of both male and female students perceived the inclusion of videos in the lectures to be useful (Al-Jandan, Farooq, 2015).

An overview of the questionnaire (with answers of respondents from University of Dammam and for comparison from Latvia University of Agriculture (LUA)) about the usefulness of videos in teaching and learning in the educational process is given in Table 2.

Table 2

**Percentage of respondents showing significance of addition of videos in the lectures**

Question	University of Dammam students (Al-Jandan, Farooq, 2015)		LUA students	
	Agree	Disagree	Agree	Disagree
Is addition of a video useful in the lecture?	95.2	4.8	93.5	6.5
Are lectures having videos more comprehensible than the ones without them?	92.0	8.0	96.8	3.2
Are videos clarifying the facts?	95.2	4.8	90.4	9.6
Are videos helpful to remember the lecture better?	88.7	11.3	90.4	9.6
Are videos helpful to maintain the interest in the lecture?	85.6	14.4	96.8	3.2
Are video mediums significant educational tools?	91.0	9.0	83.9	16.1
Can knowledge gained from the video be applied/ reproduced easily?	92.6	7.4	90.4	9.6
Are knowledge gained from the video will be retained for a longer period of time compared to lectures without videos?	68.5	31.5	80.7	19.3

Author used Wilcoxon signed-rank test to understand whether there was a difference in respondents' answers (i.e., dependent variable would be "answers of students", and two related groups would be answers values "agree" and "disagree").

The Wilcoxon signed-rank test result shows that  $p\text{-value} = 0.001 < 0.05$ . It means that the observed difference between both measurements is significant. Thus, can reject the null hypothesis that both samples are from the same population, and can assume that the respondents' answers "agree" and "disagree" are significantly different.

Analyzing the research data, it can be concluded that LUA students like video lectures at the classes. Also, when comparing LUA students' opinions about video lectures with students from the University of Dammam, it can be seen that the students think mostly the same.

It means that students consider the supplement of learning video in the lecture is helpful and lectures with video are clearer than without them. Video helps to remember the lecture better; it helps to maintain interest in the lecture. The acquired knowledge from the video can be used to reproduce and easy; and it is stored for a longer time compared to lectures without the video.

The scientists T. Seidel, G. Blomberg and A. Renkl underline the importance of choosing an appropriate instructional approach when designing video-based learning environments. The use of video in teacher education should be adapted to the specific learning goals (Seidel, Blomberg, Renkl, 2013).

I. Burov (Буров, 2009) recognizes that the experience of using visualization lectures in the learning process leads to the following conclusions:

- such a lecture creates a kind of support for the thinking, develops skills of visual modeling, which is a way to increase not only intelligent, but also the professional capacity of the trainees;
- this kind of lectures is best used at the stage of introducing the students to the new topic;
- in the presentation of complex for perception and understanding themes it is advisable to use a combination of figurative and symbolic visibility.



Videos, shown in the lectures, are obtained from various sources, namely, YouTube and Google videos or are created using video making programs.

### Conclusions

- The overall conclusion after data analysis is that all respondents use the Internet, the respondents from the Faculty of Veterinary Medicine (61.9 %) use it most of all. It could be explained that the students have a lot to learn and the most recent literature on Veterinary Medicine can be found in the Internet global databases.
- It means that students consider (p-value is 0.001) the supplement of learning video in the lecture is helpful and lectures with video are clearer than without them. Video helps to remember the lecture better; it helps to maintain interest in the lecture. The acquired knowledge from the learning video can be used to reproduce easier; and training content is stored for a longer time compared with the lectures without the video.
- Videos, shown in the lectures, are obtained from various sources, namely, YouTube and Google videos, or are created using video making programs.

### Bibliography

1. Al-Jandan B. A., Farooq I., Khan S.Q. (2015). Students' Perspectives on the Relevance of Internet-based Educational Videos in Dental Education. *Journal of Taibah University Medical Sciences*, Vol. 10 (3), pp. 288 – 292. [online] [19.11.2016]. Available at <http://www.sciencedirect.com/science/article/pii/S1658361215000724>
2. Arguel A., Jamet E. (2009). Using Video and Static Pictures to Improve Learning of Procedural Contents. *Computers in Human Behaviour*, Vol. 25, pp. 354 – 359. [online] [19.11.2016]. Available at <https://pdfs.semanticscholar.org/db1c/fc3f32baab36f3705d94656fb9e3882a6d12.pdf>
3. Brophy J. (Eds.). (2003). Using Video in Teacher Education. *Advances in Research on Teaching*, Vol. 10, pp. 287 – 304. [online] [19.11.2016]. Available at <http://www.emeraldinsight.com/doi/pdfplus/10.1016/S1479-3687%2803%2910011-9>
4. Deore K.V. (2012). The Educational Advantages of Using Internet. *International Educational E-Journal*, Vol. 1 (2), pp. 111 – 112. [online] [19.11.2016]. Available at <http://www.oijrj.org/ejournal/Jan-Feb-Mar2012IEEJ/20.pdf>
5. Duncan I., Yarwood-Ross L., Haigh C. (2013). Youtube as a Source of Clinical Skills Education. *Nurse Education Today*, Vol. 33 (12), pp. 1576 – 1580. [online] [19.11.2016]. Available at [http://www.nurseeducationtoday.com/article/S0260-6917\(12\)00410-8/abstract](http://www.nurseeducationtoday.com/article/S0260-6917(12)00410-8/abstract)
6. Johnson N., List-Ivankovic J., Eboh W.O., Ireland J., Adams D., Mowatt E., Martindale S. (2010). Research and Evidence Based Practice: Using a Blended Approach to Teaching and Learning in Undergraduate Nurse Education. *Nurse Education in Practice*, Vol. 10 (1), pp. 43 – 47. [online] [19.11.2016]. Available at [http://www.nurseeducationinpractice.com/article/S1471-5953\(09\)00059-6/abstract](http://www.nurseeducationinpractice.com/article/S1471-5953(09)00059-6/abstract)
7. Kelly M., Lyng C., McGrath M., Cannon G. (2009). A Multi-Method Study to Determine the Effectiveness of, and Student Attitudes to, Online Instructional Videos for Teaching Clinical Nursing Skills. *Nurse Education Today*, Vol. 29 (3), pp. 292 – 300. [online] [19.11.2016]. Available at <https://www.ncbi.nlm.nih.gov/pubmed/19121875>
8. Ramlogan S., Raman V., Sweet J. (2014). A Comparison of Two Forms of Teaching Instruction: Video vs. Live Lecture for Education in Clinical Periodontology. *European Journal of Dental Education*, Vol. 18(1), pp. 31 – 38. [online] [19.11.2016]. Available at <https://www.ncbi.nlm.nih.gov/pubmed/24423173>
9. Seidel T., Blomberg G., Renkl A. (2013). Instructional strategies for using video in teacher education. *Teaching and Teacher Education*, Vol. 34, pp. 56 – 65. [online] [19.11.2016]. Available at <http://www.sciencedirect.com/science/article/pii/S0742051X13000565>
10. Vrtič M. P. (2012). The Role of Internet in Education. In *Proceedings of the International Scientific Conference Distance Learning in Applied Informatics*. Slovakia, pp. 243 – 249. [online] [19.11.2016]. Available at <http://conferences.ukf.sk/index.php/divai/divai2012/paper/download/883/215>
11. Wetzel C., Radtke P., Stern H. (1994). *Instructional effectiveness of video media*. Hillsdale: Lawrence Erlbaum Associates.

12. Аронова Г. А. (2012). *Методика обучения взрослых: особенности лекционной формы подачи материала по гуманитарным дисциплинам (Methods of Adult Education: Features of the Lectures in the Study of the Material in the Humanities)*. [online] [19.11.2016]. Available at <http://festival.1september.ru/articles/513950/> (in Russian)
13. Буров И. П. (2009). *Методика проведения лекции-визуализации по информатике (The Methodology of the Video Lecture in Informatics)*. [online] [19.11.2016]. Available at <http://ito.edu.ru/2009/MariyEl/II/II-0-5.html> (In Russian)
14. Колков С. (2012). *Видео лекции. Технологии e-learning (Video Lecture. E-learning Technology)*. [online] [19.11.2016]. Available at <http://websoft-elearning.blogspot.com/2012/09/vs.html> (in Russian)
15. Панина Т. С., Вавилова Л.Н. (2008). *Современные способы активизации обучения (Modern Methods of Activation of Training)*, (4-е изд.). Москва: Издательский центр «Академия». (in Russian)





**Life Quality in the Context of Home  
Environment, Home Economics,  
Household, Consumer Science,  
Visual Art**



## The Basic Plastic Elements and Material Knowledge in Sculpture Art Education

Olcay Ataseven<sup>1</sup> Dr. art.; Hatice Nevin Guven<sup>2</sup> Dr. art.

Suleyman Demirel University, Turkey<sup>1,2</sup>

[olcayataseven@sdu.edu.tr](mailto:olcayataseven@sdu.edu.tr)<sup>1</sup>; [nevinguven@sdu.edu.tr](mailto:nevinguven@sdu.edu.tr)<sup>2</sup>

**Abstract:** As in each art work's formation process, it would not be wrong to state that the sculpture is a product emerging from human's imagination and ideas as well. If approached from a classical point of view, the product may be qualified as an object art, which is three dimensional, tangible, occupying the space, enclosing the space or spreading into it, formed from the materials selected expediently by the artist. Knowledge of the form, which is one of the first steps of sculpture education, is possible through the formation of the material in a general sense. Each material, which has its own specific features, offers various formation possibilities. Therefore, recognizing the material with its diversity that can create a wealth of ideas and different aspects while the imagination is being materialized and transformed into a form constitutes an important determinant factor for the development of creativity during the art education process. The aim of this paper is to examine the effect of material knowledge and variety on plastic shaping elements in terms of its support in acquiring creativity and sensitivity in the process of sculpture and art education. This theoretical study will put forward the importance and necessity of the material knowledge when it is analysed from the perspective of the different effects of various basic plastic elements on sculpture. The study will also consider the subject in line with the new suggestions offered by the contemporary art.

**Keywords:** art education, sculpture, material, basic-designing elements.

### Introduction

Sculpture, when approached through a classical point of view, is evaluated as a form art which is three-dimensional, touchable, occupant in space, space-inclusive or space-reaching where figure and content have been unified. Sculpture, which is also identified as shaping space or indented creation art in space, necessitates a figural organization compatible with material which is constructed.

Any work of art exists in company and effect of a determined substance or material. Considering art of sculpture in special terms, it is seen that the case material has been the most significant element which determines the effect being aimed. Out of which material a sculpture is going to be made is of vital importance for the sculptor in reflecting the power of thinking and expression being desired to be transformed completely because an artist transforms own thinking or imagination into a figure in real environment via real material in "sculpture"

In the book named "The Elements of Sculpture" George (2014,12) says that material is first because everything is made from something and each material contains unique characteristics. Also he adds that the sculptor must be aware of the numerous possibilities within a particular material and have knowledge of the tools and techniques needed to work with it. "Nothing the sculptor does to the material is neutral; every act contains meaning. Creating a sculpture is a three-way conversation between sculptor, material and viewer. Material is by necessity at the centre of that conversation and it is as much alive as the other two. However, the ultimate aesthetic challenge for the sculptor is to create form that transcends the material from which it is made. As the twentieth century progressed, the range of artistic materials increased exponentially and the exploration of these new materials greatly expanded the expressive potential of modern and contemporary sculpture. That being so, when we see a contemporary work for the first time, one logical question might be: Why did the sculptor choose this particular material?" (George, 2014, 12).

Sculpture and painting is mentioned as plastic arts as they have been constituted through plastic material. Here, when intending to say "plastic material", it has been tried to mean shapable material or substance such as clay, plaster, metal, wooden, stone, polyester. All these materials that can be shaped as desired through certain techniques are called plastic materials. However, in three-dimensional works in particular, when the expansion of the scope and limits of art is taken into account anymore, it is not wrong to accept any kind of material as plastic material in accordance with the will of the artist. When associated with material, despite the untouchableness of painting art, it is seen that sculpture is in a form which is three-dimensional in the space and arousing the desire of touch (Yılmaz, 2006, 15).

So, the real material in sculpture is face to face with spectator in real environment. Existing platform of every art and possibilities entails different conditions. While the painting is realized on surface, the sculpture is seen to be in a three-dimensional form which has gained some volume. Artist M. Yılmaz (Yılmaz, 2006, 15-16) is making the comparison between the painting and sculpture: “we see depths on a flat canvas without real depth, objects put away from each other, colours in painting and we believe in the lie told by the artist. As for the sculpture, he says that volume is not an illusion but reality.” Depth in painting art is an illusion. Nevertheless, the depth and volume of sculpture is real and it takes place with spectator in the same atmosphere at the same time. For that reason, sculpture is identified as a “volume art” as well. However, while sculpture is constituted, the usage possibilities of many various materials bring along infinite variations in terms of figure as well.

The aim of the paper is to discuss the effect of material knowledge and variety on plastic shaping elements in terms of its support in acquiring creativity and sensitivity in the process of sculpture and art education.

### **Methodology**

It is analysed the important processes of art education, the importance of figure knowledge and form knowledge, material knowledge - stone, bronze, clay, plaster (emptiness-fullness, mass-volume and horizontal-vertical components) which are significant steps in sculpturing education process. The scientific theoretical discussion is based on the works of popular and well-known artists Ilhan Koman (1961), Jacques Lipchitz (1915), Anish Kapoor (2004; 2005; 2006), Alexander Archipenko (1915), Henry Moore (1939), Henrique Oliveira (2009), Patrick Dougherty (2004), Constantin Brancusi (1923; 1928). The theory and practice of an art fundamentals are analysed of the works of O.G. Ocirk, R.E. Stinson, P.R. Wigg, R.O. Bone, D.L. Cayton (2015) and the diversity of elements of sculpturing of H. George (2014) works. Methods of the research: theoretical study, analysis of scientific literature and reflection of author's personal experience are used.

### **Results and discussion**

#### **The Effect of Material in Basic Plastic Elements**

The formation of figure knowledge, which is one of the first steps of sculpture in educational process, passes through grasping basic plastic elements and shaping of material in general sense. Any kind of material bearing special features presents many various and different figural possibilities. So, knowing material along with its multitude during educational process provides support to the embodiment of imagination. This situation, at the same time, constitutes an important effect in the development of creation process as it is going to present the richness of ideas in transformation of imagination into figure.

The constitution of form knowledge thought to have been first step in sculpture education calls for the shaping of material. In this case, it's possible to talk about a pattern between material knowledge and basic plastic elements. Every material creates different visual results on basic plastic elements constituting sculpture stemming from its special construction and character.

In this process, the usage of basic plastic elements shape respectively according to the nature of every material. A vital tie exists between plastic shaping possibilities and creativity through abundance/richness of material knowledge.

To know material is one of the most significant experiences of a person who wants to know the art of sculpture. So, the planning of material knowledge in a system has been one of the most crucial necessities.

It should be taken into consideration that different materials generate different effects and shaping or plastic elements of sculpture which can be identified through emptiness-fullness, mass-volume and horizontal-vertical components will provide different possibilities and effects in any material.

“Technique and method depend on the material being used. In other words, any material (stone, bronze, clay, plaster) necessitates its own technique and method. A sculptor has to know the nature of the material he/she uses. We cannot create any figure that flashes into our mind so randomly. How far are the possibilities of stone, or bronze or plaster? Besides these, there are some other points as well. Some sculptures, let's say, can be made both from bronze, stone and wooden; these have some samples, too.

However, even though the composition is the same, the effect in all is different from each other. Its reason stems from the own nature of material” (Yılmaz, 2006, 51).

Besides it should be considered what İlhan Koman (Koman, 1961) who is one of the most important Turkish sculptors said on the matter of the material: “From 1956 to 1965 I used principally iron in making sculpture. Why iron? It was simply because I had ways and means to work in this medium. ... For me the 1950's were what I call "my Iron Age". My objective in sculpture was then beauty, although in the process I struck the iron with violence to shape it and forge it into forms to exalt its hardness and malleability. The outcome was to me aesthetically satisfying” (Haydaroglu, Torre, 2005, 64) (Figure 1).



Figure 1. İlhan Koman, *Ogre*, 1961, iron (Koman, 1961).

### Components of Sculpture and Material Shaping

Components of sculpture can be lined up such as mass-volume, emptiness- fullness, texture, surface, ambience, movement, section, passes. These components gain special character according to their structure / feature. For example, the effect created by metal and mass- emptiness and texture relation of stone as material exhibit different expressions from each other.

Mass out of components in question is solid physical substance or material that creates the weight and density of sculpture. Materials such as clay, metal, stone that are going constitute the form of sculpture compose the massic structure. Out of these material, stone, which is shaped by dressing and carving in classical sense, is the heaviest one amongst and demands a craftsmanship that entails strength. As for the material such as clay, ceramic or wax, they are flexible and in a form which is easily shapable. But volume is the figure- gained case out of these materials and its three-dimensional area determined with the limits of the object.

“Mass and volume exist with each other in relation. A brick has some mass in its own volume. In general, while positive areas create larger massic effect, the effect of empty spaces is less. Both mass and volume state three-dimensional presence or figure of sculpture” (Ocvirk, Stinson, 2015, 35).

An artist striving for sculpture forms his work with a figural richness at volumetric dimension and infinite usage possibilities of material. Due to its physical dimension unifying with material, sculpture as a form is the totality of volume and mass existing among contours where indentations and protrusions are included. This work occupant in space is composed of the connection of partially or entirely closed negative areas depicting flat or curled movement according to the character of material. As in surface arts, we confront texture, light and colour as elements determining and shaping contrasts characterized as plastic value in sculpture as well. On the whole, contrasts increasing with light-shadow effect even correspondingly are important factors in creating a more effective form.

“When limits are identified clearly, shapes are understood more easily whereas badly- identified edges lead to a complex and monotonic process at large. Form edges are the guides of eye going round on

three-dimensional surface and they create the desire of experiencing the whole work. Yet, the appearing shape depends on the position of spectator. A small change in the line of vision may change the perception of shape and contours as well. The main contour or silhouette of a three-dimensional work is the outer edges seen from single position. Minor contours are shape edges or surfaces passing through or over main contours. Some three-dimensional contours are built by neglecting secondary contour. Contours might have been targeted, so they can imply a connection with the edges of other shapes existing in another place of composition (Figure 2, 3). This in particular is valid for the arrangement of a few different elements in a tectonic works. By this way, eye movements are encouraged toward a definite direction by connecting similar contours of far shapes. When other shapes are close enough to this focus point, the eye tries to connect or perceive these in a group relation by going forward and backward” (Ocvirk, Stinson, 2015, 146).



Figure 2. Jacques Lipchitz, *Man with a Guitar*, 1915, limestone (Lipchitz, 1915).



Figure 3. Anish Kapoor, *Cloud Gate*, 2006, stainless steel (Kapoor, 2006).

Form, which is the most significant element of sculpture, turns into a data with its visibility existing in three dimensions. It forms a border with its surfaces in the environment it exists. The first one of designing elements, the most crucial one and outer view of everything is composed of form. In spite of this, figure is more mobile according to form. According to educator and artist Paul Klee (1879 -1940) figure is equal to animate entity but form is inanimate. Form is an existence limiting space with its surfaces for a certain function and covering a volume in this space. As for figure, it is an instantaneous pose or the position it has. While individual perception is effective in figure, form is a reality organized with its own laws in space. So, the form richness and variety of nature is a strong source of inspiration for the artist (Kaptan, 2004, 81-88).

The usage of aforementioned forms during designing of three-dimensional art works reveals a situation that should be thought together with the character of material as well. For instance, texture and forms composed by stone in nature is different from the ones formed by wooden. The shaping possibilities and techniques to be presented by these show differences as well. So, these are considered in designing sculpture.

Emptiness and fullness or mass and volume are from other shaping elements. For instance, emptiness out of these is a structure composing contrast despite massic structure of form. Emptiness at the same time is an element serving to reveal movement where weight decreases in the perception of mass. Thus, the figure emerging covers togetherness of negative and positive structures.

Negative area or space being shaped penetrates into solid material, so a three-dimensional area is formed that looks like being kept inside or expanding outward. These open shapes may surround solid masses and may extend amongst separately. Prominent innovative sculptors of the twentieth century Alexander Archipenko (Archipenko, 1915) and Henry Moore (Moore, 1939) have pioneered in the use of empty sculptures (Figure 4, 5). Emptiness has presented new spatial extensions for these artists and their followers. Using emptiness has brought inner surfaces into the open, opened a route toward backside of

sculpture and decreased overweight. Empty shapes should be thought as the inner pieces of form. Enclosed empty shapes are very important in linear sculptures and they become dominant in width, thickness and weight of material describing these for the most part. Three-dimensional shapes as well as two-dimensional equivalents play an important role so as to create pressure and stress within the parts of work as well. Relative superiority of shapes forming main structure can be changed with dimension, colour, value, visual detail or contrasts in textural stress. A shape can be dominant by differentiating other shapes surrounding it as the dominance degree is determined by contrast degree. Having less variety makes them harmonic more easily (Ocvirk, Stinson, 2015, 147).



Figure 4. Alexander Archipenko, *Woman Combing Her Hair*, 1915, bronze (Archipenko, 1915).



Figure 5. Henry Moore, *Reclining Figure*, 1939, wood work (Moore, 1939).

Artists want to reproduce the effects of light moving over objects, figures and forms related to the topic they choose. This situation brings along the problem of value use in the process of constructing the work. Light and shadow patterns vary according to the shape of object and how it is illuminated. While spherical surface exhibits the transition from light to dark as equally graded, intersecting surfaces will demonstrate more sharp contrast values. Every basic form has its own light and shadow patterns. These light and dark areas working for the perception of depth and volume are called as plastic value (Ocvirk, Stinson, 2015, 155).

While making three dimensional shaping, it is possible to catch rich dark colours, shiny white colours and greys in various tones in any material. However, some materials provide more natural possibilities when compared with others in terms of developing value variety.

“Despite the fact that artists working with three-dimensional figures do not have to create a massic illusion through light and dark surfaces, they are certainly aware of the relation between lighting and dimensionality. While the artist moulds three-dimensional shapes physically, their contrast lights and shadows are produced on figures. The presence of light occurs when the surface area is exposed to a light source. In contrast to that, when a surface removes its face away from light source, dark or shadowy areas appear. Every basic form gives different response to light. Lightly inclined surfaces reveal a laminar flowing value gradation. On the other hand, a sudden value change occurs on sharp edge. Any light angular change on two adjacent surfaces results in a light contrast value. More sharp angular change means more contrast. That a three-dimensional work prevents light transition of any block ends in shadow. This includes intense textured areas as well. However, the shadow area composed by the texture itself may create a more dark-looking texture when compared with soft transition. Light-shadow patterns change together with the position of spectator, work or source of light. If a work has a shape change to a large extent or concentric transitions, shadow patterns will identify this work independently from the position of light source with a great possibility. For many three-dimensional works, light source is fixed relatively and light shadows alter only while spectator is moving. However, owing to the change of light source with the movement of object, kinetic sculpture creates continual changes in light and shadow relation. Many sculptors are busy with forming these kinds of relations. ... Value changes in three-dimensional work can be obtained through paint as well. To see shadow patterns falling onto an object painted with light values instead of dark colour values is easier. Light values give best results on pieces dependent on secondary contours; darker values are more successful in stressing big contours or



silhouettes. Strong contrasts between image and background creates a silhouette describing thin linear three-dimensional structure in addition. ... For an artist who works three-dimensionally, a good source of light and value interval formed by the artist are significant tools of composition. Light and shadow helps to identify dimensionality and spatial arrangement of a work, increases the effect of designing pattern and supports to sentimental, psychological and dramatic expression of the artist" (Ocvirk, Stinson, 2015, 165).

Texture, one of the most significant plastic effect creating components in sculpture, is not an illusion on platform in painting or by drawing but a real surface experienced with sense of touch. The real texture in three-dimensional arts is a natural piece of work. It is seen that natural and autogenous textures of materials such as wooden, stone, clay or metal are consciously included in work. Textures concurrently give visual stress to surfaces limiting volume and extent and provide some certain figures come to the forefront by creating sharp and strong contrasts.

"While working on three-dimensional materials, textures enrich a surface, identify the material and strengthen the content and expression. Texture surfaces show variety from rough surface of rusty metal or bark to smoothness of glass or polished marble. Some certain surfaces exist in the nature of certain materials and these inner textures are respected traditionally. In general, artists use some certain textures so as to characterize special qualities of topic. For example, while elegant softness of a fish calls for a polished shiny surface, it is necessary to use harsh and rough textures for violence or an event like disaster. Yet, artists try to astonish spectators through different acts from time to time as well. ... In contrast to visual illusion, real textures experienced by sense of touch are from basic elements taken into consideration by artists who work three-dimensionally. The works of these artists are created through special natural tactile qualities of the material being used. Henrique Oliveira (Oliveira, 2009) uses worn-out wooden by forming wavy, cave-similar and almost an extraordinary texture (Figure 6). Other artists like Patrick Doudherty (Doudherty, 2004) get clues from nature and builds sticks, branches and trashes in the form of ecological giant sculptures (Figure 7). ... The use of real texture plays a role in a newly technique called as assemblage and in blurring the limits between two-dimensional and three-dimensional work. Assemblage developing out of previous experiences along with collage is constituted by connecting foundling or special made various two-dimensional or three-dimensional objects. Although assemblage looks like collage, the difference between the two is that assemblage brings greater and bulky elements together. In addition, assemblage works are presented differently. In common, these works are exhibited on the ground while standing on its own area. However, assemblage objects are out of the ordinary on a large scale even when hung. Assembled objects naturally have real textures single-handedly. Even if we think about imitated texture only as a graphic device, sculptors often will recreate congenital textures of the agent. For instance, they can imitate outer qualities of other textures such as hair, fabric, leather similarly by changing the surface of the chosen material through certain techniques and methods. Processing material in this way may deceive our senses as if we are experiencing another material between whiles. Through careful processing of surface and a suitable retouch, other natural and artificial materials such as clay, wooden, metal may seem quite natural and may falsify our eyes in the strictest sense of the word. Abstract texture and invented texture are suitable for plastic artists as well. Both types of textures may enrich a certain area and may change the value of an area by tricks of light and shadow on textural surface. Careful observation and skill is certainly necessary for obtaining composition unity and a realistic texture. However, more subjective or unnatural texture adding into a composition entails creativity evenly. Whether it includes two-dimensional or three-dimensional material or a composition out of these ones, texture is a natural part of every surface and it is as crucial as other elements on composition and expression" (Ocvirk, Stinson, 2015, 178-180).

Special feature of any material creates characteristic effects on the figural and visual structure of sculpture. Artists resort to forming same figure through different materials in order to search for these effects. It is possible to observe the best samples of this in Constantin Brancusi's (Brancusi, 1923; 1928) works. "Bird in Space" series reflect different effects both on marble and bronze of a sculpture (Figure 8, 9). Here, it is easily seen how massic weight of marble will become lighter via the effect of form and gain dynamism with the effect of bronze.



Figure 6. Henrique Oliveira, *Tapumes* (fencing/boarding/enclosure), 2009, wood (Oliveira, 2009).



Figure 7. Patrick Dougherty, *Putting Two and Two Together*, 2004, maple and willow saplings (Dougherty, 2004).



Figure 8. Constantin Brancusi, *Bird in Space*, 1923, marble (Brancusi, 1923).



Figure 9. Constantin Brancusi, *Bird in Space*, 1928, polished bronze (Brancusi, 1928).

## Conclusions

In the light of the art works examples given, it is emerged that the different materials offer very rich creative possibilities/resources to the artists. In this case, the importance of the material knowledge and variety on plastic shaping process in terms of its support in acquiring creativity and sensitivity in sculpture and art education becomes apparent.

Grasping techniques through shaping possibilities of clay, wooden, stone and metal that can be identified as classical basic material related to sculpture in educational process will constitute a ground in personal creativity process of student and will support to form his/her personal style. Creating new plastic languages from the materials out of these ones and gaining the skill of self-learning-searching process by the student should be the result targeted in the next step.

## Bibliography

1. Archipenko A. (1915). *Woman Combing Her Hair*. [Photo of the sculpture, bronze] [online] [06.01.2017]. Available at <https://tr.pinterest.com/pin/423408802440767024/>; <https://www.artsy.net/artwork/alexander-archipenko-woman-combing-her-hair>
2. Brancusi C. (1923). *Bird in Space* [Photo of the sculpture, marble, Metropolitan Museum of Art] [online] [06.11.2016]. Available at <https://aestheticfraktur.wordpress.com/2013/11/11/brancusi-in-new-york/>

3. Brancusi C. (1928). *Bird in Space* [Photo of the sculpture, polished bronze, Museum of Modern Art, New York] [online] [06.11.2016]. Available at <https://aestheticfraktur.wordpress.com/2013/11/11/brancusi-in-new-york/>
4. Doudherty P. (2004). *Putting Two and Two Together* [Photo of the environmental object, maple and willow saplings] [online] [06.11.2016]. Available at <http://www.sculpture.org/documents/parksdir/p&g/leigh/leigh3.shtml>
5. George H. (2014). *The Elements of Sculpture*. London: Phoidon Press.
6. Haydaroglu M., Torre F. (Eds.). (2005). *Ilhan Koman's Retrospective*. Istanbul: Yapı Kredi Yayınları.
7. Ocvirk O.G., Stinson R.E., Wigg P.R., Bone R.O., Cayton D.L. (2015). *Sanatın Temelleri. (Art Fundamentals: Theory and Practice)*. İzmir: Karakalem Kitabevi Yayınları. (in Turkish)
8. Kapoor A. (2006). *Cloud Gate*. [Photo of the environmental object in Millennium Park Chicago, stainless steel] [online] [06.11.2016]. Available at <http://artlog.art50.net/tag/anish-kapoor/#.WDdX9LKLTX4>; [https://en.wikipedia.org/wiki/Cloud\\_Gate](https://en.wikipedia.org/wiki/Cloud_Gate)
9. Kaptan B.B. (2004). Temel Tasarımda Form ve Form Biçimlendirilmesine Bir Yaklaşım. (Form in Basic Design and an Approach to the Form Shaping). *Journal of Anadolu Sanat*. Vol. 15, pp. 81 – 88. (in Turkish)
10. Koman I. (1961). *Ogre* [Photo of the sculpture, iron] [online] [06.11.2016]. Available at <https://tr.pinterest.com/artuncvolkan/ilhan-koman-works/>; [http://www.koman.org/work/work\\_1961umaci.html](http://www.koman.org/work/work_1961umaci.html)
11. Lipchitz J. (1915). *Man with a Guitar*. [Photo of the sculpture, style: Cubism, limestone] [online] [06.11.2016]. Available at <https://www.wikiart.org/en/jacques-lipchitz/man-with-a-guitar-1915>
12. Moore H. (1939). *Reclining Figure*. [Photo of the sculpture, wood work] [online] [06.11.2016]. Available at <http://www.tate.org.uk/whats-on/tate-britain/exhibition/henry-moore-0/henry-moore-room-guide/henry-moore-room-7>
13. Oliveira H. (2009). *Tapumes* (It means in English fencing/boarding/enclosure). [Photo of a wood work in Rice Gallery, Houston] [online] [06.11.2016]. Available at <http://www.ricegallery.org/henrique-oliveira/>
14. Yılmaz M. (2006). *Heykel Sanatı. (Sculpture Art)*. Ankara: Imge Kitabevi Yayınları. (in Turkish)

## The Change of Propaganda in Art Dependent on Communication Instruments

Mavi Çakmakçı Mg. art.

Süleyman Demirel University, Isparta, Turkey

[mavicakmakci@sdu.edu.tr](mailto:mavicakmakci@sdu.edu.tr)

**Abstract:** Intellectual structure created by World Wars has been reflected into art as the questionings of material world and has manifested itself in authentic and free responses. Art, moving toward stylistic tryouts for the sake of depicting that it got out of pressure of some certain hegemonies and moved away from traditional process, has included the datum of technology into art. Creation process which gives place to this datum in art through a political posture and propagative manner has paved the way for internalizing special datum of different fields in general view that it exhibits while entering into the twenty-first century and removing the borders between many disciplines and itself. Crises becoming semiotic, wars and wording of communication instruments reorganized on fear merge into wordings of art. Transformation of media marks into a source for art so as to present by reproducing the topics involving society on behalf of sovereign secures the position of propaganda in art. In this sense, art that includes sovereignty relations in its historical process shows one more time that it has become instrumentalized in its changing plastic process.

**Key Words:** propaganda, communication instruments, interdisciplinary art, art education.

### Introduction

Today, the tie of communication instruments with art having the potential of being able to transform things into dates back to the midst of the 19<sup>th</sup> century where photography began to take part in the process of art. This process, which needs to be perceived in the context of togetherness of different art genres, gets stronger when television, video and internet start to be a tool for art. So, art wraps itself up in a polyphonic and polymorphic structure characterized as ‘contemporary’ by digressing traditional borders. This new figural comprehension expanding by the beginning of Cubism becomes an indicator of exceedance of traditional holy nobilities. Practices recognized by the understanding of Interdisciplinary Art which is formed as a result of the combination of different disciplines have all been considered as a subsidiary means in narration of previously produced forms as well as their heterogeneous existence stylistically (Özakın, 2001). Those who bring this current art practice with their ideological discourses together are Dadaists.

Therefore, the aim of this study is to examine the art works how the sovereign propaganda changes the marks of art and how art uses these marks.

### Methodology

New ways of expressions opening by means of media technology have caused it to continue with a multi-disciplinary mentality by replying new search of form and the use of new materials. Therefore, the transformation of art after the technological developments is examined in this research and then in the area of mutual interaction, the reflection of propaganda tongue of media is handled. In this context, starting with literature review the research ends up with resolutions and determinations. Expanding media for propaganda is thought to be helpful for art, which is developing around technology, to be evaluated within this new existence and expression area.

Broadening the media for propaganda purposes, the expression area of the art which continues its development on technology-based. In this research, the scientific theoretical discussion is based on the works of popular and well-known artists Marcel Duchamp (1919), John Heartfield (1932), Andy Warhol (1964), Roy Lichtenstein (1963), Joseph Beuys (1974), Peter Sorge (1982), Nome Edonna (2007), Bedri Baykam (1999), Tammam Azzam (2015).

The theory and practice of an art fundamentals are analysed of the works of T. Clark (2004), K. Aktulum (2011), S. Boynik (2003), N. Postman (1994), P. Bürger (2014). Methods of the research: theoretical study, analysis of scientific literature and reflection of author’ personal experience are used.

## Result and Discussion

Beginning from the 19<sup>th</sup> century, life has been classified through media-metaphors, drawn a frame for, enlarged or being downsized, not by experience as in the past. This process designed as impeccable has brought mental transformation in its wake. The greatest reason for this is that people have been affected by tempting and convincing thoughts taking place in indirect expressions and discourses, not by thoughts and words that are imposed to them. As Ernst Cassierer (1874 -1945), who puts forward ideas related to the course of events in the world, states that these instruments have had powers that restrict the individual from the very beginning. According to E. Cassierer, human being cannot see or know anything without being the mediation of an artificial tool anymore (Postman, 1994, 19). It is seen that communication instruments have taken art into their spheres of influence. The artist, by moving from the position of being pioneer to consumer, he takes part in this wheel by reproducing thousands of ideological images being reproduced. As in the chosen samples, it is not wrong to say that art has come to the threshold that it has not been perceived the way it used to be. Art is far beyond to put metaphors into our eyes. Art has been fictionalized on shock and new effect anymore.

## Dadaist Transformation

Dadaists reproducing the current language of the visuality for their own purposes succeed to form an intellectual and aesthetical platform (Boynic, 2003, 57). In particular, the production of Marcel Duchamp's (1887 –1968) work called "L.H.O.O.Q." (Figure 1) through parody method "(...) the topic of which is based on the procedure of reducing a noble work of art into an ordinary one" becomes first in this sense (Aktulum, 2011, 480).



Figure 1. Marcel Duchamp, *L.H.O.O.Q.*, 1919, photo of the reproduction of Leonardo da Vinci's *Mona Lisa* with added moustache and beard, parody method (Duchamp, 1919).



Figure 2. John Heartfield, *Adolf The Superman: Swallows Gold and Spouts Junk*, 1932, photomontage on poster (Heartfield, 1932).

M. Duchamp, drawing moustache and beard for reproduction of Mona Lisa's famous work of art, has strengthened his propagative discourses via this method. Besides, L.H.O.O.Q is the first letters of "She has a hot ass, there is a fire down below" proposition. M. Duchamp's obscene interpretation has the characteristics of a revolution and is an exemplary of coup made against bourgeoisie. It devastates status quo in a sense; not only criticizes but attacks known high culture and works of art directly. While M. Duchamp realizes this, he shows that he defends a new understanding based on thinking instead of traditional techniques like painting and sculpture. That M. Duchamp's reproducing a painting as a new painting in a form which is going to have an ideological discourse becomes a starting point to new narration possibilities moving forward with his postmodern description with this reproduction in a sense.



John Heartfield (1891 -1968), one of the Dadaist artists proceeding in the light of M. Duchamp, is seen to be reproducing the current language of the visuality with its own reality. Dadaists, declaring war against information spread by media like all institutions, have used intersemiotic transaction method so that proletariat could reach propaganda with an understandable language and cheap way and have conveyed it to a political goal (Figure 2). J. Heartfield, revealing this via his photomontages, says in one of his conversation: "I started making photomontage in the First World War. There are many reasons that led me to work with photographs. The main reason is that I have seen untold ones as much as told in newspapers as well" (İmgelerin Ajitasyonu..., 2008).

It is seen that artists have realized polymorphic arrangements with interrupted scenes in their collages and montages that they developed via a propagative understanding. In these works, multipartiteness or disconnection, which is the main aesthetic feature of postmodern art, has begun to depict itself. Pipelining stratified images, mixing different genres and techniques have been increasing the appearance of partiteness further. Kurt Schwitters's (1887-1948) art work named "Merzbau" or M. Duchamp's "Ready Made" works developed Dadaist thinking-based will open out on interdisciplinary formations such as latter installation and performance. All these works changing by datum of technology show that propaganda in works of art will not be read the way it used to be any more.

### Popular Culture Incidental to Communication Instruments

In addition to artists who show their protests against wars created by technology and all traditional values by utilizing the images of communication instruments, the numbers of artists who are attracted to splendour of culture spread via mass communication instruments are quite a few as well. For instance, Pop art is the result of encouraging society to develop a life style dependent upon industrial products over mass communication instruments when the USA flourished after the Second World War, increased national income and focused its attention on industry (Lynton, 2015, 289). Pop art artists have used the images communication instruments with an effort to prove that daily life still has some inspirations to give the artist. However, in this case, the thing being propagated is the system itself. Description of numerous materials and instruments discussed in Pop art in a frame by Richard Hamilton's work called 'What makes modern-day houses so different and charming?' is a real inventory depicting how consumerist society gains knowledge (Kinay, 1993, 324). The sentence summarizing, as Andy Warhol states Pop art is that "Art is meta and indicates it to be so" (Bürger, 2014, 25-26). As A. Warhol (1928-1987) knows that an artist can accompany this system only as a machine, he reproduces the reproduced images (Figure 3).



Figure 3. Andy Warhol, *Race Riot*, 1964, an acrylic and silkscreen painting on four linen panels (Warhol, 1964).



Figure 4. Roy Lichtenstein, *Whaam!*, 1963, acrylic and oil paint on the canvas (Lichtenstein, 1963).

So, consumption material or anything that turns into semiotics can be counted as art. In such an ambience, it will grow difficult to mention that art has a political power of sanction. In modern-day

characterized as visual and image age, it is seen that even the contents of political discourse and ideology have been emptied (Postman, 1994, 149). Thus, it can be noted that policy has become pop in general and images have come to the fore as a result of trivializing of political ideologies as visualized in pop art and latter art.

Roy Lichtenstein (1923 – 1997) in fact shows what policy and wars mean in modern-day directly (Figure 4). That R. Lichtenstein's reflect images on canvas through plain colour and image understanding by rendering them attractive with lively, enthusiastic colours as in all pop art artists is the expression of a culture transforming through communication instruments. The language of Lichtenstein which can be read as 'hieroglyphics and ideograms' is quite graphical and it evokes known comic strips or photograms. In these works, it is clearly seen that war has turned into an event forgotten via an intervening advertisement and watched on TV's any more.

### Actual Arts

Joseph Beuys (1921 – 1986) is the artist who took this dependency on communication instruments one step further. Even art has turned into an event realized to be broadcasted live in front of cameras. A boxing match performance by J. Beuys "For direct democracy through referendum" proves this situation (Figure 5). Unlimited democracy and collective action has constituted the basis of J. Beuys's political point of view (Clark, 2004, 177-178).

Sex discrimination and anti-racist propagative discourses of the Art Movement called Guerrilla Girls which we face in 80's has the characteristics of this kind of art movements as well. It has been viewed that art has shown alteration in a form to take place in centre of information channels. In this case, it can be said one more time that art has shaped media. These years have become where cultural identities were presented ready to be consumed in the form of meta, any issue put forward whatever ideological tendency it has was politicized in a style oriented toward consumption and political differences and conflicts were transformed into a reason for consumption as well (Odabaş, 2012, 429). For that reason, propagative manner of art is tried to be shown as a meta that cannot be bought and sold in system. However, even artistic actions extending toward demolishing the walls of gallery may transform into system's propaganda.



Figure 5. Joseph Beuys, *For Direct Demonstration Through Referendum*, 1974, the photographe of performance (Beuys, 1974).



Figure 6. Nome Edonna, *Caged Brain in a TV Art*, 2007, the artistic installation with TV monitor (Edonna, 2007).

### Political Communication Images in Art

J. Baudrillard (2010), in "Art Conspiracy", mentions that ideology is not in its current relation between material production and semiotic productions any more. He stresses that those two structures are not apart from each other and neither right nor left-wing policy can be mentioned. Today, it is understood that the process forming ideology in capitalist societies is the pieces of same abstraction process of meta logic and semiotic logic. In such a structure, it cannot be expected another structuring different from art which is a visuality. For that reason, Postmodernist art has been reorganized in a mild discourse depicting that all established institutions can be redefined arbitrarily. As for policy undergoing structural deterioration, it provides voluntariness basis through communication instruments for the sake of proving its legitimacy. This situation brings to mind Nome Edonna's (born 1973) work called "Cage Brain in

TV's Art" (Figure 6). While we cannot own or defend our only power domain of bodies and identities, N. Edonna sends an open reference to our world shaped through communication instruments stating that there is no meaning in arguing political matters (Kelly, 2010).

Peter Sorge (1937-2000) wants to unfold that how reality was distorted by utilizing communication instruments again (Figure 7). In P. Sorge's painting series he made in 1982, it has been viewed that he unified different hybrid elements with collage logic in a context insinuating war, violence and rape (Berksoy, 1996, 50).



Figure 7. Peter Sorge, *Variationen I*, 1982, the ink and graphite pen (round and rectangular objects) (Sorge, 1982).



Figure 8. Bedri Baykam, *Che's South America*, 1999, photopenture (Baykam, 1999).

Bedri Baykam (born 1957), one of the representatives of Trans- Avant Garde or New Expressionists, follows the same, he process in his politic critical "photopentures" he made at the end of 1980's (Figure 8). He applies free painting technique of tendency he represents by printing on materials such as canvas and wallboard he took from media. That the photographs and documents being taken out of the news in the newspapers of the period used by B. Baykam known for his postmodernist criticism and documents show that he adopted intersemiotic operation mode.

Neil Postman (1931 - 2003) asserted that this approach penetrated into popular media in sixties initially (Fineberg, 2014, 136). For instance; just like the use of telegraph in conveying news on TV, indiscriminate transmitting of connected sound and imagery views devastate the assumptions related to consistency. In this case, it vanishes away the knowledge context or it has been forgotten so quickly. Its reflection in art seems like works tried to be settled into a net formed out of visualities and meanings instead of an autonomous or original form. Yet, the goal here is to find the intersection way of production through innumerable flows and come up to the origin of knowledge.

Thus, the question is not to introduce an artistic new thing but to be able to produce meaning out of chaotic objects, names, references, media outputs and any kind of piles thought to be meaningless and forming daily life. The works that refer to this polyphonic structure manifest itself some more as we approach the modern-day. This structure can be viewed in Tammam Azzam's (born 1980) works. For example; over the media images showing the ruins of civil war in Syria, he fixed Goya's 'The third of May, 1808' narrating civil war in Spain (Figure 9). That an artist bases his work on a story and uses its visuality intensifies the narration while manifestating the basis of work as well.





Figure 9. Tammam Azzam, *The 3rd of May, 1808 Goya*, 2015, photomontage (Azzam, 2015).

That a pile of images which have already been seen become revisible in these works produced through intersemiotic exchange method might make you think that the artist does not have a propagative discourse or not defend a new remark. Furthermore, by supporting reproduction of all media images, the artist can be criticized as being a forwarder. Postmodern art will only be able to show its propagative quest in a structure questioning all concepts and existence and type of production.

### Conclusions

In this study is examined that the permanent feature of art is “changing” and the orientation displaying with today’s cultural transformation and technological developments. As a result, it is understood that on the one hand the contemporary art continues its development as a part of the new technologies and it is as a part of technological instruments; on the other hand, it carries its ontological problems to the future as an intermediary of science and technology.

### Bibliography

1. Aktulum K. (2011). *Metinlerarasılık/Göstergelerarasılık (Intertextuality/Intersemiotic)*. Ankara: Kanguru Yayınevi. (in Turkish)
2. Azzam T. (2015). *The 3rd of May, 1808 Goya*. [Photomontage] [online] [06.01.2017]. Available at [http://resizeme.club/openphoto.php?img=http://assets.loeiladelphographie.com/uploads/article\\_photo/image/23026/7\\_Azzam-Tamma\\_s-Goya-5.jpg](http://resizeme.club/openphoto.php?img=http://assets.loeiladelphographie.com/uploads/article_photo/image/23026/7_Azzam-Tamma_s-Goya-5.jpg)
3. Baudrillard J. (2010). *Sanat Komplosu-Yeni Sanat Düzeni ve Çağdaş Estetik 1 (Art Conspiracy-New Art Order and Contemporary Aesthetics 1)*, E. Gen (Translator). Istanbul: İletişim Yayınları. Sanat Hayat Dizisi. [online] [06.01.2017]. Available at <http://www.idefix.com/Kitap/Sanat-Komplosu-Yeni-Sanat-Duzeni-ve-Cagdas-Estetik-1/Jean-Baudrillard/Sanat-Tasarim/Sanat-Tarihi-ve-Kurami/urunno=0000000343446> (in Turkish)
4. Baykam B. (1999). *Che'nin Güney Amerikas (Che's South America)*. [Photopenture] [online] [06.01.2017]. Available at <http://www.ekolsanatgalerisi.com/?p=543> (in Turkish)
5. Berksoy F. (1998). *20. Yüzyılda Batı ve Türk Toplumunda Toplumsal Gerçeklik (Social Realism in Western and Turkish Picture Society in 20th Century)*. Istanbul: Matbaacılık San. Tic. LTD. ŞTİ. (in Turkish)
6. Beuys J. (1974). *For Direct Demonstration Through Referendum*. [The photo of performance] [online] [06.01.2017]. Available at <https://github.com/tchoi8/PerformingParticipation/blob/master/class4.md>
7. Boynik S. (2003). *Situationist Hareket ve Modern Topluluklara Etkisi (Situationist Movement and its Impact on Modern Communities)*. Master Thesis. Istanbul: SGSU, Institute of Social Sciences.
8. Bürger P. (2014). *Avangard Kuramı (Avangard Theory)*. E. Özbek (Translator). Istanbul: İletişim Yayınları. [online] [06.01.2017]. Available at <http://www.iletisim.com.tr/kitap/avangard-kurami/7762#.WKQDoNKLS1s> in Turkish)
9. Clark T. (2004). *Art and Propaganda*. E. Hoşsucu (Translator). Istanbul: Ayrıntı Publications.

10. Duchamp M. (1919). *L.H.O.O.Q.* [The photo of the reproduction of Leonardo da Vinci's *Mona Lisa* with added moustache and beard, parody method] [online] [06.01.2017]. Available at <https://www.artsy.net/artwork/marcel-duchamp-lhooq-mona-lisa>
11. Edonna N. (2007). *Caged Brain in a TV Art* [The photo of the artistic installation with TV monitor] [online] [06.01.2017]. Available at <http://www.artbusiness.com/1open/012607.html>
12. Heartfield J. (1932). *Adolf The Superman: Swallows Gold and Spouts Junk*. [photomontage on poster, Political Art] [online] [06.01.2017]. Available at <https://www.gallery.ca/en/see/collections/artwork.php?mkey=22573>
13. *İmgelerin Ajitasyonu: John Heartfield ve Alman Fotomontaj Tekniği (Agitated Images: of John Heartfield and German Photomontage Technique)* (2008). Boyut Pedia. V. Atmaca (Translator). [online] [14.02.2017] Available at <http://www.boyutpedia.com/1624/69736/imgelerin-ajitasyonu-john-heartfield-ve-alman-fotomontaj-teknigi> (in Turkish)
14. Fineberg J. (2014). *1940'lardan Bugüne Sanat (Art Since the 1940s)*. G.E. Yılmaz, S.A. Eskier (Translators). Istanbul: Karakalem Yayinlari. (in Turkish)
15. Kelly B. (2010). *Fifty Nifty Sculptors* [online] [14.02.2017]. Available at <http://fiftysculptors.blogspot.com.tr/>
16. Kınay C. (1993). *Sanat Tarihi (History of Art)*. Ankara: Kültür Bakanlığı Yayınları. (in Turkish)
17. Lichtenstein R. (1963). *Whaam!* [Acrylic paint and oil paint on the canvas] [online] [06.01.2017]. Available at <http://www.tate.org.uk/art/artworks/lichtenstein-whaam-t00897>
18. Lynton N. (2015). *Modern Sanatın Öyküsü (The Story of Modern Art)*. S. Öziş, C. Çapan (Translators). Istanbul: Remzi Kitabevi. (in Turkish)
19. Odabaş O. (2012). 1990'lı yıllarda Türkiye'de Toplumsal Kimlik ve Cinsiyet Politikalarının Çağdaş Sanattak Yansımaları (Contemporary Reflections of Social Identity and Gender Politics in Turkey in the 1990s). *İdil*, Vol. 1(5). Istanbul: İdil Publications. [online] [06.01.2017]. Available at <http://www.idildergisi.com/makale/pdf/1353003297.pdf> (in Turkish)
20. Postman N. (1994). *The Television, Killing Entertainment*. O. Akinhay (Translator). Istanbul: Ayrinti Yayinlari.
21. Sorge P. (1982). *Variationen I. (Variations-I)*. [The ink and graphite pen, round and rectangular objects] [online] [06.01.2017]. Available at [https://de.wikipedia.org/wiki/Peter\\_Sorge#/media/File:1982Variationen1.jpg](https://de.wikipedia.org/wiki/Peter_Sorge#/media/File:1982Variationen1.jpg) (in German)
22. Warhol A. (1964). *Race Riot*. [The photo of painting, an acrylic and silkscreen painting on four linen panels] [online] [06.01.2017]. Available at <http://warholeessays.tumblr.com/post/113779798725/race-riot-196>

## The Response Given by Art Against Consumption

Hatice Köklü Mg. art.

Suleyman Demirel University, Turkey

[haticekoklu@sdu.edu.tr](mailto:haticekoklu@sdu.edu.tr)

**Abstract:** The effort of man to rule nature along with industrialization has revealed environmental issues. The escalation in the number of these issues have necessitated producing ecological solutions. Numerous studies have been started so as to protect the environment and provide a healthy ambience.

The reason for that is that man and nature is not in harmony as a result of the boost in production and consumption. Despite the fact that industrial developments facilitate life, its nature-corrosive and contaminating aspect is pretty much. Life becoming dependent on industry, it detracts and alienates people from nature. For that reason, it is a significant element that man and nature live together and become in harmony. In order to protect ecological environment, it is necessary to live without harming nature. Art in the face of this situation recycles the wastes appearing in consequence of production and consumption and transforms it into an art object by pulling attention to the destruction of consumption abundance, environment and natural structure.

In this study, it has been examined how destruction of ecological structure in an art works was made visible as a result of production and consumption and mentioned about trends such as Environmental Art and Arte Povera ("Poor Art") that change the spectator's point of view toward nature and work of art. In addition, the studies made by R. Smithson dealing with transformation of energy and criticizing consumption society have been examined and personal applications produced in the line of this issue have had coverage.

**Keywords:** consumption, environmental art, arte povera, waste materials, entropy, art education.

### Introduction

Along with the development of technology and industry and changes in habits and life styles of society/human being, the ordinary appearance of environment in which we live has changed as well.

These alterations have had negative affect in addition to positive ones. Via its negative aspects, our world has become in a sense. For that reason, it requires to be questioning of conception understanding. Art makes this questioning by producing works that are going to pull attention to the destruction of environment and natural structure and abundance of consumption. While performing this, it is in the effort of transforming waste objects into an art object by recycling as well. The authentication of reality that a vital relation exists between nature and human being through scientific findings has provided an increase in environmental sensitivity. However, gradually increasing alienation feeling of human being in industrial society and reasons such as being in the need of going towards nature again have paved the way for art/artists to produce environment- focused works of art. So, artists have reshaped the status of art object by producing alternative techniques and materials against painting art and sculpture. While executing this, "contrary to the anxiety of creating beautiful shape, they have revealed projects creating ambiances, including environmental energies, facts and constructions into work of art, aiming to create awareness by pointing out environmental problems" (Ataseven, 2016, 263).

One of these projects is recycling. According to K. Aktulum (2016, 145); recycling object is the totality of cultural one. In modern-day where excessive consumption and extravagancy have become an inseparable piece of our lives, recycling the origin of which extends to cubist artists have been adopted by many artists. Via the form defined by Claude Lévi Strauss (2000, 42) it is in accord with a procedure of "biricolage" (an object made through different materials) based on utilizing the old material collected in due course. This manner of expressing are scenes from our daily lives exactly. The artist aims to move from the existing one to another creation by tending towards life and nature directly and while fulfilling this, he has developed methods by using many various materials and waste objects.

While the variety of these objects that constitute the work of art causes to break off from real meanings and contexts of those objects, he in fact stresses the inhomogeneity of our own reality/world, miscellaneousness and dynamism. "To make art" looks possible over these figural games any more. The cycle of thinking, depth and infinite motion of emergency is rendered possible through such kind of figural games. The use of non-artistic spaces, elements and tools is the most effective procedure for

augmenting exchange possibilities among same elements. In this sense this method is one of the ways including the feature of polyvalence into current art and contemporary artistic figures. Multiplying the former heterogeneous material by piercing first and bringing it together in a new combination order is an active option in order to make a connection between present and past and memory and time (Aktulum, 2016, 132-133).

According to Ö. Kabaş (1976) art is nothing apart from natural formations such as call paper exchange, communication and anti-entropic tendencies of human being. For that reason, creating a situation unifying with real object, real ambience and living environment in art has been discussed. Arte Povera "Poor Art" or "Impoverished art"- was the most significant and influential avant-garde movement to emerge in Europe in the 1960s (Arte Povera, 2017). Environmental Art and trends exemplifying this situation ideally have produced works of art creating awareness and reacting the problems of nature, ecology and environment.

*The aim of this paper is* While human being is making his own life easier and regular, he causes nature to be more irregular virtually. In other words, while performing this, he makes an effect oriented toward the deterioration of its own order and balance as a result of technologies developed on behalf of forming its own order.

So, man supports his this situation explained through entropy concept which moves toward disorder existing in nature itself already. A struggle for generating order against this disorder situation of art as well can be mentioned. From this point of view, plastic researches have been tried to be done in personal performances as well. The use of waste material in applications have been desired to be evaluated as an image symbolizing the determination of natural sources by human being in the most general sense or the production of energy with reference to the consumption of nature's energy.

### **Methodology**

While researching, Environmental Art and Arte Povera movements that take attention to the abundance of consumption, attention to the destruction of nature and the natural landscape examined by analysing them. In relation to the subject, R. Smithson's studies that criticizes consumption society and addresses the transformation of energy are examined. Reason of causing the said case that becomes increasingly chaotic requires to discuss the entropy subject. In relation to this situation, disposable objects, structures, studies symbolizing transformation into another energy given as examples.

Methods of the research: theoretical study, analysis of well known important artist's works related to the subject and reflection of personal experience/artworks are used.

### **Result and discussion**

Technological inventions and innovations that facilitate human life beginning with industrial revolution have had led to consumption culture. The increase in consumption more than being produced has revealed the question of waste naturally. Today wastes transforming into piles in a sense have created a visual pollution as well while deteriorating the structure of nature. In this process where human being is an active entity as well, it has been seen that anything decays or perishes has become a source of life for another being. Materials being consumed have become waste. Waste materials losing its function have taken place as an art object producing a new energy. As in entropy law, these materials are never as its former one but have been transformed into another energy.

Providing the formation of a new energy has been desired by way of transforming waste materials into an art work in applications as well.

### **Environmental Art and Arte Povera**

Environmental artistic applications have gained a distinct place in the 20<sup>th</sup> century art. The basis of this situation extends to a long past from Futurism to Dada, Duchamp to Neorealists. During the process, facts such as environments, outer space, society, human being, public sphere have been discussed to be included into the centre of art and the ground of formation.

Later on, nature, ecology and environmental problems have been varied under the main title of "environmental art" (Ataseven, 2016, 263).

At the same time, Environmental Art, according to S. Germaner (1996, 44); is related to rediscovery of regional ecological consciousness and archaic cultures depicting tendencies toward demanding to enlarge the application field of art, opposing art market and displaying activity out of galleries and museums. Besides, it has been seen that a point of view has developed defending the necessity to make a reference to life experience, reality itself and the objects that belong to it (Ataseven, 2016, 266)

In this case, the borders between art and life have disappeared and have entered into daily life. While accomplishing this, works oriented toward creating new environment or creating differences in the current environment aimed at environment directly and forming works intended for attention-grabbing events and arrangements have been realized.

These efforts by the artist for environment means to make new relations with spectator and include it into art event as it also means to stress its own existence in natural environment or city surrounding.

Viewpoint, protest, the consciousness of ephemerality, utilization from technology, ownage of the moment being experienced, poeticalness of daily life are the main topics discussed by the artists adopting this understanding of art. These issues are the ones from nature and our lives but it has been stressed the temporariness of human being in nature and all creatures and desire to symbolize the change in nature instead of aiming a permanent support toward nature (Ögel, 1977, 2). Everything in our lives has become the material of art. From now on, it has become difficult to talk about such a painting or sculpture. Because what is in question is not the description of world but the world itself. According to the C. Çoker (1982, 24-25); artists have chosen the material of their works of art via their own resources. Such kind of poverty of material can be attached to Arte Povera trend. What is important is neither the richness of material nor competence for application or masterful imaging. It is to reach the most intense expression through the least material. So, material for Arte Povera artists should have a feature that not necessitating an extra energy. For that reason, they utilize waste objects.

This understanding emerged by Italian critic Germano Celant (Arte Povera, 2017) in 1967 in the meaning of poor art. These artists aim to reach the basics of nature, life and behaviours by avoiding intellectual and schematic (Atakan, 2008, 40-42). According to N. Lynton (1982, 335), they set forth a reaction against the insolence of human being in front of nature and time and immediately known feature of the city of 20<sup>th</sup> century which is to build and to devastate. In Arte Povera, which is a similar approach to Environmental Art, emerged as a reaction to a society which is possessed with the attractiveness of consumption and technology and has yielded to its possibilities. Instead of an art uplifting industrial development, they have carried life into art by preferring to adhere to nature. In works of art, an imagery aesthetic and general style is not in question.

Land Art samples examined under the title of Environmental Art defends that art should move to natural space not in gallery rooms any more. It has a temporary characteristic. They are the works of art formed in the way nature affords and being figured dependant on it needingly. While the artist wants to leave a mark in nature, he is not against nature, but in harmony. As a sample, considering R. Smithson's works, the artist attributes new meanings to art by producing works of art in deserts, tracts, deserted mines, inaccessible hills of the mountains and exceeding the limits of application as well. While aiming to move out of galleries and museums on one hand, he begins to utilize the world itself as material and chooses natural spaces as an environment.

In R. Smithson's trying dated 1966, while discussing Entropy which is the second law of thermodynamic, he was telling that dissected monuments were the most valid genres of art (Atakan, 2008, 62-65). While searching for the supremacy of nature, he elaborated his thinking that energy disperses toward the decomposed homogeneity of substance by discussing Entropy law. According to R. Smithson, Entropy has rendered the concept of process ineffective at the level of geological time. For that reason, he regarded his "Decomposition works of art" as the most valid figure of art and he has shaken the anthropocentric thinking of art. By going to deserted industrial estates and quarries, he made the emphasis of irreversible devastation realized in nature. R. Smithson brought big masses of earth together and performed works by piling and adding them up. Lands that were devastated pulled his attention in particular. These lands are the places devastated or deformed as a whole owing to industrial-aimed utilization or natural disasters. All these have no negative effect for R. Smithson.



He does not distinguish these lands from ancient cultures in terms of the values they have and regard them as modern sculptures. According to R. Smithson, world has been transformed into an object that might be used for artists from now on.

Artist's work called "Spiral Jetty" can be shown as an example for the works which can be perceived only when looked from the air or traces left by him (Figure 1). Artist, in a sense, has accepted the inevitable tendency towards entropic disorder and tended himself towards the tendency of organizing world. This work of art by the artist is a Spiral Jetty. He made the lake accept a spiral archaic figurative shape and organic growth image in nature (Ögel, 1977, 5).

Scientific inventions and quick technological advancements have affected art and scientific facts such as Entropy by the increase of mass communication have begun to be the issue of art. While the issue of realism has been discussed in art, a tie with science has been established. As in Entropy law, disorder and variety have increased in our lives, world has become snarled up gradually and cultural divisions and fractures have emerged. In this sense; artists, as in Entropy law, have wanted to pull attention to this gradually increasing turmoil.

This term was initially used by German physicist Rudolf Clausius in 1868 (Rifkin, Howard, 2003, 39). Entropy states that substance and energy can be changed only in one direction from utilizable to non-utilizable, valid to invalid or regular to irregular. For that reason, Entropy is the measurement of energy amount that cannot be transformed anymore (Rifkin, Howard, 2003, 11-12).

"Entropy" concept remaining within the field of physics and thermodynamic, emerging after war along with fibernetic and information aesthetic, finds itself arguable in avant-garde art concept. Entropy has emerged as a measurement of possibility increase in the second law of thermodynamic. Entropy can be explained as the possibility of to be able to be in a situation of a thing. According to scientists, entropy has been increasing constantly in universe which is a closed system. When this issues have been examined in the context of art, it was said whether human being wants to oppose the entropy increase in universe by making art.

Any kind of being in life is in process of motion in space and time. Universe has been moving toward disorder consistently. While moving toward exhaustion in this disorder, everything distinguishes in a transformation process at the same time and creates order by forming an energy again. This issue can be supported by Erzen's (2000, 9) these words.

"Balance in nature, waste of any living being can be the cleaner or nutrition of the other; the death of a thing can animate the other. In this order, nothing vanishes but only changes figure or place".



Figure 1. Robert C. Smithson, *Spiral Jetty*, 1970, (Smithson, 1970).

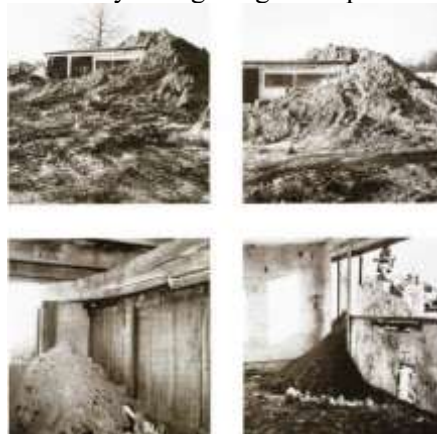


Figure 2. Robert C. Smithson, *Partially Buried Woodshed*, 1970, (Smithson 1970).

Art has produced works of art by pulling attention to abundance of consumption, destruction of environment and natural structure. While performing this, he went into the effort of transforming into an art object by recycling waste materials as well. What is desired in personal performances is to put into effect new trying's oriented toward this question and to present new propositions on behalf of being able to be put into reutilization and circulation of waste materials by way of artistic applications (Figure 1, 2).



Figure 3. Hatice Köklü, "Untitled-1", Mix Type (wood, linocut, waste materials), 2016.



Figure 4. Hatice Köklü, "Untitled-2", Mix Type (linocut, metal, waste materials), 2016.

The production of energy, the consumption of nature's energy at the same time, consumption of natural resources by human being in the most general sense, even devastation of them in the next step all constitute the basis of personal performances. In this sense, a tie can be made with entropy concept. That gradually increasing disorder in universe leads to chaos renders the concept of entropy indispensable. At this point, transformation of energy-exhausted, used objects or structures into another kind of energy has been aimed and the value of nature for man is asked for questioning (Figure 3, 4). In these works of art, seeking solutions in the quality of a response given by art oriented toward destruction of nature has been aimed.



Figure 5. Hatice Köklü, "Untitled-3", Mix Type (wood, metal, waste materials), 2016.



Figure 6. Hatice Köklü "Untitled-4", Mix Type (etching, metal, waste materials), 2016.



Figure 7. Hatice Köklü, "Untitled-5, 6, 7", Mix Type (metal, wood, waste materials), 2016.

Inhomogeneity formed in applications by utilizing waste materials can be evaluated as a distinct feature. So, as distinct from classical applications of collage, it has been worked with an application style where

assemblage logic stepped in. In the meantime, while wooden and metal pieces are brought together, it has been tried to depict the transformation of energy from one state to another as a symbol (Figure 5, 6, 7).

## Conclusions

Today, rapidly increasing population, advancement of technology, dependence on technology thus on energy have all rendered the quest for new energy resources. In planning, building and operation processes of these resources, it is necessary to show the required sensitivity for the protection of living spaces, to minimize the harms that might be given to environment and to take the precautions that are going to protect the ecological balance.

Technological inventions, innovations beginning with industrial revolution and facilitating human life have brought consumption culture along. Increase in consumption more than being produced has revealed the question of waste naturally. Waste transforming into piles in modern-day so to speak, they have created a visual pollution while ruining the structure of nature as well. In this process where human being is an effective being, it has been viewed that anything which decays and perishes has been a source of life for another being. Consumed objects have reached a position of waste. An artist who gets bored from the environment in which he lives and feels alienated toward his environment has gained a reaction against excessive waste on behalf of protecting the past. Waste objects losing their functions have taken place as a new energy-producing art object. As in Entropy law, these objects are never as they were in the past but have been transformed into another energy.

## Bibliography

1. Arte Povera (2017). *The Art Story Modern Art Insight*. [online] [16.01.2017]. Available at <http://www.theartstory.org/movement-arte-povera.htm>
2. Atakan N. (2008). *Sanatta Alternatif Arayışlar (Alternative Searches in Art)*. (1<sup>st</sup> ed.), İzmir: Karakalem Basımevi. (in Turkish)
3. Ataseven O. (2016). *Heykelin Çevresel Serüveni (Landscape Environmental Adventure)*. Isparta: Süleyman Demirel Üniversitesi Güzel Sanatlar Fakültesi, *Art-e Sanat Dergisi*, Vol. 9 (17). (in Turkish)
4. Aktulum K. (2016). *Resimsel Alıntı (Illustrative quotations)*. (1<sup>st</sup> ed.). Turkey: Çizgi Kitabevi Yayınları. (in Turkish)
5. Çoker C. (1982). *Fusun Onur ve Çevresel Sanat (Fusun Onur and Environmental Art)*. *Sanat Çevresi*, Vol. 42. (in Turkish)
6. Erzen J. N. (2000). *Sanat ve Çevre (Art and Environment)*. Ankara: Sanart.
7. Germaner S. (1996). *1960 Sonrasında Sanat, Akımlar, Eğilimler, Gruplar, Sanatçılar (Art after 60ies, Current Trends, Groups of Artists)*. (1st ed.). İstanbul: Kabalcı Yayınevi. (in Turkish)
8. Kabaş Ö. (1976). *Tüm Çevresel Gerçeklik (Reality of All Environment)*, *Devlet Güzel Sanatlar Akademisi Yayınları*, Vol. 69, İstanbul. (in Turkish)
9. Lévi-Strauss C. (2000). *Yaban Düşünce (The Savage Mind)*. T. Yücel (Translator). İstanbul: YKY Publishing Firm. (in Turkish).
10. Lynton N. (1982). *Modern Sanatın Öyküsü (Story of Modern Art)*. (1st ed.). C. Çapan, S. Özış (Translators). İstanbul: Remzi Kitabevi. (in Turkish)
11. Ögel S. (1977). *Çevresel Sanat, Çağımızda Çevre Yaratma, Etkileme ve Yorumlama (Environmental Art, Creation of Environment in Nowadays, Influence and Interpretation)*. İstanbul: İstanbul Teknik Üniversitesi. (in Turkish)
12. Rifkin J., Howard T. (2003). *Entropi, Dünyaya Yeni Bir Bakış (Entropy, a New Look at the World)*. (3<sup>rd</sup> ed.), H. Okay (Translator). İstanbul: İz Yayıncılık. (in Turkish)
13. Smithson R. (1970a). *Partially Buried Woodshed*. [Earthworks] [online] [16.01.2017]. Available <https://www.robertsmithson.com/earthworks/partially.htm>
14. Smithson R. (1970b). *Spiral Jetty*. [Earthworks] [online] [16.01.2017]. Available at [https://www.robertsmithson.com/earthworks/spiral\\_jetty.htm](https://www.robertsmithson.com/earthworks/spiral_jetty.htm)



## Work Education in the Family: Similarities and Differences between the City and Rural Areas

Ene Lind<sup>1</sup> PhD; Lea Pärilin<sup>2</sup> MA

Tallinn University, Estonia<sup>1,2</sup>

[enelind@tlu.ee](mailto:enelind@tlu.ee)<sup>1</sup>; [leaparin@gmail.com](mailto:leaparin@gmail.com)<sup>2</sup>

**Abstract:** The technological advancement has changed the way of working and with more advanced tools the share of physical work has declined. This has changed the attitudes towards work and new technical solutions in housework cause many previously important skills being questioned. Historically, people in rural areas have had more domestic work, because next to housework they have had different agricultural tasks. The popular opinion is that persons from rural areas are more willing to contribute to work, and accordingly, it could be assumed that children from rural families have more working skills and experiences. The aim of this study was to describe the current situation of work education in Estonian families and compare cities with rural areas. The study examines the impact of family relations on the development of work habits and inquires the attitudes in the family that create a positive attitude towards home work. In collecting data interview and open ended questionnaires were used. The analysis of the results showed that there are no notable differences between urban and rural families regarding work education. Work education consists of including children in family activities from early childhood on, where they learn work skills at first through play and then through imitation. When the child is older and more independent, working becomes more intentional and also mandatory. Work education is based on the values and habits of the family. If the family values time spent together and common activities, work still remains a part of the normal daily life in the family.

**Key words:** work education, family, joint activity, family values.

### Introduction

Work education has undergone many big changes over time. When in former times it was natural that children fulfilled various tasks in the family along with their mother and father and acquired necessary skills and work habits, nowadays people lack time to act together as a family. A popular attitude seems to be that the child does not have to work, because his or her main responsibility is to do schoolwork (Morrow, 2011). Attitude towards work and willingness to work have changed notably during most recent decades. The values survey conducted by the Estonian Ministry of Social Affairs highlights that not so far back, a hundred years ago, children had a major role in contributing to domestic work in a traditional agricultural society. There were tasks that were considered children's responsibilities, such as carrying firewood and water into the house, looking after smaller children and herding. Social norms dictated that children had to work and be obedient. A popular attitude in Estonia today is that involving children in household chores is a child raising method. The question is what is and what is not considered the child's work and where to draw the line between work education as a child raising method and actual working, i.e. how should working for a family business or on a family farm be classified (Lapsed ja Eesti..., 2006).

The same survey revealed that 51 % of Estonian population believes tasks fulfilled by children and/or children's involvement in domestic work to be an obvious responsibility. This sentiment is popular among people aged 65 and older, also in rural regions, among people that have other ethnic origin than Estonian and in large families. People with higher education and higher income support the idea of smaller amount of household chores for children. 16 % of Estonian population, where the major share is young people aged 15-24, clearly disapproves children's work or their involvement in household chores. Hence, generations have different attitudes towards work education (Lapsed ja Eesti..., 2006).

According to Brühlmeier (2009, 120), changes in work habits can be associated with the era of technology that has greatly freed people from physical activity and shortened the time spent on working. Along with the advancement of technology, the nature of work has changed and the tools have become more sophisticated, leading to a reduced need for physical work. The continued trend of technical solutions that simplify housework has made us question many skills that have formerly been considered important – they are often replaced by knowledge of technology, skills to operate a piece of equipment and, if necessary, maintain it (Morrow, 2011). It is possible to buy various services from car wash to

cleaning and repairing your apartment. Abundant selection in stores of ready-to-eat and convenience food means that the practice of cooking from raw materials has changed within families.

Throughout history, people that live in rural regions have traditionally had more to do in their household than people in the city because in addition to daily work they have the responsibility to grow crops or take care of domestic animals. An understanding has been developed that people in rural regions are more inclined to contribute to domestic work. Consequently, it could be concluded that children in rural families have more work experience and skills. However, this might not be true today, where the number of active rural people has decreased and urban and rural households do not differ much, may be in that people that live in the country have to travel a longer distance to go to a shopping centre or a cultural centre (Eesti regionaalarengu..., 2012).

Duties in the family are divided into different areas: providing education for children, developing them emotionally, socialisation to become a member of society, but also sharing knowledge with children and teaching those skills to manage in a household, including cooking, cleaning, raising children and taking care of children (Korvela, 1999, 81). The aim of this study was to describe the current situation of work education in Estonian families and compare cities with rural areas. The study questions were following: how relations within the family help develop work skills; which attitudes prevalent in the family create a better ground for valuing work and work skills; how are tasks divided between family members; how much household work is different in cities compared to rural areas.

### Methodology

A combined design was used in this study. Data were collected using interviews and a questionnaire with open-ended questions. Gillham (2000) suggests an interview in case a small number of people are being studied; people are accessible; everyone is a key person; most of the questions are open-ended and require more in depth answers; some questions are sensitive and require trust. The chosen interviewees were three families from a rural region and three families from a city. When preparing the sample, the idea was to create a basis for comparison between families that live in the city and in the country and that live in a detached house and in an apartment building. When choosing families, one of the criteria was to have many different family types in the sample. The sample included one family where three generations live together, which means that grandparents contribute to daily housework. The decisive factor for choosing one family was the fact that one parent works abroad. The sample also included a family where the mother raises two daughters (Table 1). Mainly individual and group interviews were used in the study. In some cases, all the members of the family wished to give answers together and their wish was respected. In order to avoid a bias in answers (for example, a child is afraid to express his or her opinion in the presence of his or her parents), a short individual interview followed the family interview. The interviews were recorded with a voice recorder, the text was audio typed and systematised based on the questions.

Table 1

Interviewed families

Family code	Place of residence of the family	Age of family members	Additional information
F1	City, detached house.	Mother 40, father 42, daughters 7 and 11, grandmother 70, grandfather 76.	Small garden. Father works as a private entrepreneur in addition to his paid job. Grandmother and grandfather are domestic.
F2	City, detached house.	Mother 39, father 45, daughters 5 and 19.	Garden. The family helps also relatives.
F3	City, apartment building.	Mother 46, father 53, daughter 23.	The family helps relatives in two households (in cities). The daughter lives and studies in another city, but visits her parents' home often.
F4	Country, apartment building.	Mother 39, daughters 13 and 17.	No garden. The family has 6 pets.

Family code	Place of residence of the family	Age of family members	Additional information
F5	Country, apartment building.	Mother 32, step-father 33, daughter 11 and son 2.	No garden. The family helps in relatives' households.
F6	Country, detached house.	Mother 40, father 54, daughters 12 and 19.	Garden. The father has been working in Finland for 10 years.

To collect additional information, it was decided to prepare and distribute a questionnaire. The idea of the questionnaire was to collect as much information as possible that could be used as a basis for theoretical conclusions (Hirsjärvi, Remes, 2010). The sample of the questionnaire comprised 9th grade students aged 15–16. This age group was chosen to ensure representation of young people that live in the country and in the city and may have some experience in household work. The students were distributed the questionnaire in a class and all filled out questionnaires were returned. In the rural school, 13 students (8 girls and 5 boys) answered the questionnaire and in the city school 14 students (8 girls and 6 boys) answered the questionnaire, altogether 27 young people. Four rural school students had previously lived in the city, one both in the city and in the country, the rest of the students (8) had lived in the country. 3 of the city school students had previously lived in the country, 1 both in the city and in the country and 10 had lived in the city. In total, 11 of the respondents had lived in the country, 2 both in the city and in the country and 14 in the city. The background information concerning the students that responded to the questions is presented in Table 2.

Table 2

Students that answered the questionnaire

School	Girls	Boys	Have lived in the city	Have lived in the country	Have lived both in the city and in the country
City school	8	6	10	3	1
Rural school	8	5	4	8	1
Total	16	11	14	11	2

The questionnaire included open-ended questions similar to the interview questions. Use of open-ended questions in questionnaires is justified because it gives the respondents an opportunity to express their own opinions, while multiple-choice answers restrict them. (Hirsjärvi, Remes, 2010). In the questionnaire designed for the students, they were asked to assess the level of their work skills, i.e. whether they can manage in future with the work skills they have acquired.

## Results and discussion

**Nature of household chores.** Work skills are acquired within the family when doing household chores. Household chores are tasks that the family members have to do every day. There are tasks that need to be done once a week or less frequently. The amount and division of labour depends on the number of household members, more precisely how many of them are adults able to work and how many children there are in the family and how old they are (Soolise võrdõiguslikkuse..., 2011).

During the interview, the first step was to identify what the family considers a household chore or what it means to do household work. The families listed various household chores, but the interviewees also said that these are simple tasks that need to be done at home. Helping parents, cleaning the house are examples of tasks that children gave as examples of household work. Many answers included an idea that it is good to be in a clean home; however, it requires participation of the entire family. According to the interviewees, there are domestic tasks that have to be done daily and those that need to be done once a week or even less frequently.

F2 father: *“Household work means tasks that are done in a household. Tasks are different depending on whether you live in an apartment building or a detached house. The amount of housework is*

*significantly smaller if you lived in an apartment compared to your own house. There is a set of tasks that have to be done once a week and not every day. Cooking and washing dishes is a daily chore. Doing laundry, cleaning the rooms are tasks undertaken once a week. Buying food is also an everyday task."*

Children think that homework is also schoolwork that they have to do at home. A daughter of one family notes that besides schoolwork she does not do very often other household tasks, because mother does them.

F4 daughter 17: *"Homework is two things: schoolwork or household chores that I do not too that much, because mother does most of them."*

The answers to the questionnaire provided by students reveal that they see household work as helping family members and relatives, fulfilling tasks that are necessary for home, but also schoolwork. One boy that studies in a rural school mentioned also taking care of domestic animals: "I have to help parents to cook, take care of domestic animals, clean." Another boy that lives in the country adds: "... help parents, chop wood or shovel snow. You have to do household chores sometimes."

**Division of labour in the family.** Division of labour between family members depends on whether they live together or some of them are away for some time, e.g. a family member that works far away from home or abroad. Division of labour changes also when the parents are divorced. There are many different factors that influence division of labour in a family additionally: prevalent cultural norms in society, home culture, traditions, understanding of female and male gender roles, attitudes towards these roles, the media (Soolise..., 2011). Usually family members help each other to do household work within the interviewed families and, if necessary, all family members fulfil the required tasks.

F3 daughter: *"We all do everything. Father may be has not cooked that much, but he helps to cook and wash dishes. He also cleans the house. Ironing and doing laundry are jobs that mother does more. We go shopping together, it has been so from childhood."*

However, this division of labour cannot be considered a rule. In one family (F4) household chores are mainly the responsibility of the mother that has taken them on her shoulders at some time. Grandmother also visits often and helps.

F4 daughter 17: *"Setting a table? We do not gather around the table to eat together. Everyone eats wherever he or she likes. Sometimes when I am behind my computer, I put my meal on the computer table, or I lay on the bed and eat or whatever. We do not have a dedicated place where we eat. Grandmother sews and repairs clothes. I sew small things, if I want; however, I do not sew clothes, because I do not know how. Everybody cleans his or her room, but mother vacuums everywhere. We do not use an iron; we have clothes that do not need ironing. I take dishes to be washed and mother usually washes dishes (she is used to it), because I have bacteria phobia and I do not want to touch these things much. Grandmother is usually the one that washes windows outside because she is the only one of us that is not afraid to do it. Mother changes the litter box, because she wanted to have the cats. Mother loads up the washing machine and then puts them out to dry, she knows how, I just leave my clothes in the bathroom."*

The younger daughter (F4 daughter 13) says: *"My sister does not do almost anything. Mother cleans the house, I usually help her."* Mother adds (F4 mother): *"Basically I do everything."* The words used by the older daughter show her attitude - the child does not value her part in household chores and, therefore, does not value the work done by her parent. In this family, though, the younger daughter helps to clean and take care of pets. The family (F4) is an example of a situation where the mother has done everything for her children to give them a good life and the children now think that this situation is normal because "mother is used to it and she knows how things are done." Arendi (2011) is convinced that if a child has acquired work habits, he or she gladly fulfils different tasks and it does not require a special effort from his or her part. Today young people live a lot in the virtual world and in the opinion of Leppik (2010) this deepens laziness and indolence in young people.

**Women`s and men`s work.** Division of labour in the family may be studied also from the following aspects: whether the tasks are divided into women`s and men`s work in the family and is it possible to highlight the difference in the division of labour when comparing families that live in an apartment building with families that live in a detached house in the country or in the city.

The tasks that are most often said to be women`s work is washing windows and ironing (in four families out of six – city families F1, F2, F3; rural family F4).

F3 mother: *“May be washing windows is that others have not done. I do laundry, iron.”*

Men`s work include tasks that require physical strength, such as shovelling snow and maintaining the car (F2); nevertheless, a female member of the family may also help to do repair work (F3).

F2 mother: *“I and my husband both cook, he also likes to cook. My husband takes care of the cars, he also builds and does repair work. I can help, may be hold something and paint and do such things, but my husband does most of this work.”*

F3 father: *“We wash dishes, which is not a special task. Preparing an omelette in the morning is my job, I also brew coffee. In the evening, we buy food together. Cleaning and washing cars is my job. We repair our home together, we put up wallpaper together, I do stonework or plumbing, or I call a handyman. When we tiled the bathroom, she grouted tiles. Lawn mowing at the mother-in-law`s place is my job.”*

In one family (F1), it is clear that the husband does not wash dishes or cook; however, in this particular family the father has a heavy workload: in addition to paid work he is also involved in forest processing and selling firewood. There are several females in this family – in addition to the wife and mother two daughters (7 years and 11 years) that help gladly to do housework. The wife believes that her husband can wash dishes, if necessary. F1 mother: *“Husband does not wash dishes voluntarily, but if it is really necessary he can do it, I believe.”*

Of 27 students that filled out the questionnaire, 17 said that in their family work is not divided into women`s and men`s work, 10 thought that in principle, men do work that requires physical strength and women do work that is physically not that strenuous, such as cleaning and cooking. A girl that studies in the city: *“Men do usually repair and harder work, women usually cook, walk the dog. Everyone works in the garden and also cleans the house.”*

In the Gender Equality Monitoring, a specific indicator characteristic to Estonia has been highlighted – a large gap in the average wages of women and men that is considered one of the reason why in families with two parents the male of the family is usually considered the breadwinner, which is why women often opt for a heavier load of household work. The initial socialisation of children occurs at home inside their family, which means that today`s traditional division of roles within the family may cement the situation where the stereotypical role attitudes and acceptance of gender inequality are regenerated (Hansson, 2014). When the division of work in the families that have participated in this study were compared with the above statements, it is good to note that in four out of six interviewed families (F2, F3, F5, F6), the division of labour based on gender has become more fair and in these families children are involved in work regardless of their gender.

**Definition of work education.** When asked the definition of work education, the reply was that it means working together with parents and acquiring knowledge unconsciously. The interviewees also said that it is a natural part of life where parents are so smart at directing their children that the latter do not realise that they work. It was added that parents should pay more attention to and be involved intentionally in work education and direct their children.

F2 father: *“Parents should pay more attention to it so that children learn to work themselves and the parents should not do everything for them, even if it seems easier at times.”*

The study shows that some parents direct their children intentionally to develop their work skills and find that at certain age children should already have some responsibilities.

F2 mother: *“You have to begin educating at early age. I try to involve children. Parents should explain what they do so as to spark an interest in children to do certain activities. When children are older, they should be given certain tasks. I believe that children that spend more time with parents are exposed to work education every day.”* The students that responded to the questionnaire see work education as a process during which a child is primarily taught how to work correctly. This means obligations, habits and independence. In a family where work and the feeling of well-being from it are valued, children are prepared at early age to acquire work habits effortlessly. Involving children in domestic work at home improves their sense of responsibility that can be developed from early childhood.

F3 father: "A two year old child has to collect his or her things. If you do not explain it to a two-year-old, then may be when he or she is five, it is already too late." Right habits are very important for children and they are formed in certain conditions. Bad habits are hard to give up or change later on. (Tuulik, 2001; Kera, 2005)

**How work skills are obtained.** The answer to the question how skills of doing household work are acquired was mainly that they come from the parents. F1 grandmother: *"This has been so all along, always together with parents, following them and you do not even notice that you do something."*

The children of the family 6 mention that both parents are teaching the same task, which means that many things are done collectively in this family.

F6 daughter 12: "I have learned how to cook from my father, but when I cook now, then I ask also my mother."

F6 daughter 19: *"I learned how to cook from my mother. Father showed me specially how to clean car battery terminals."*

In addition, skills acquired in school and from colleagues were mentioned. The study also revealed that nowadays various tips on how to do some jobs could be found in the Internet.

F2 father: *"Mother taught how to cook, my uncle was one of my examples and then my step-father when I was a teenager. Also colleagues – you have to go around eyes open. I am very grateful that the Internet is there. A lot of building-related advice can be found there."* It was mentioned that in the relations of the family members, a healthy climate (F6 father) and quality time spent together (F3 daughter) are important.

F3 daughter 23: "Common activities must be valued. We spend time together, we sport together. We have always had breakfast and dinner together. When all family members are at home, we eat supper together. We spend a lot of time with relatives and it is nice."

One of the families (F4) is an example of a situation that when time together and common activities are not valued, children do not acquire habits and have no wish to participate in housework.

When the students aged 15-16 were asked to assess the work skills acquired at home from the perspective of managing in life, they mostly believed that they can manage quite well but there is room for development. One boy that lives in the city was self-critical and said that he *"is a bit lazy but things get done. Not immediately, later"*. He gave a score of 3 to his skills. It was also mentioned that when faced with problems, you could find help searching the Internet. Consequently, the young people are used to find solutions using the Internet.

**Difference of household work in the country and in the city.** This study did not find great differences between the amount of household work done in urban and rural families. The values that a person holds direct his or her choices in life and preferred activities. If a family that lives in the city or in the country values work and creating with your own hands and doing things together, opportunities can be found even if the family lives in an apartment. The family can help acquaintances or relatives (families F3 and F5 that live in an apartment building).

F3 father: *"Usually Estonians have some close relatives that have a house in the country. If there were not my mother-in-law's house, we surely would have a house and even a house in the country."* The interviews revealed that the nature and amount of work depends more on whether the family lives in an apartment building or a detached house. Only one girl among the students that filled out the questionnaire mentioned that her part in household work is extensive because they live in the country, there is a lot of work to do and she has to help. It is important to note that there may be more work to do when living in a rural region but work education is part of the family life both in the country and in the city.

## Conclusions

The analysis of the results of this study confirmed the results of previous studies according to which nowadays there are no significant differences in household work that urban and rural families do. Also, work is not that much divided based on gender. As in households that live in the city, men in the country do also work that in earlier times were called women's work – they wash dishes and do laundry, cook. Differences mainly depend on whether the family lives in an apartment or a detached house.

Work education is involving a child in the family's common activities from an early age. The child learns how to work, initially through play, then through imitation. When the child grows older and becomes more independent, working becomes intentional and mandatory. Work education is based on the family's values and attitudes. If the family values the time spent together and joint activities, then working is a natural part of the family's life and the members of the family do not sense it as being hard; on the contrary, they think of this work as something nice. Parents can do a lot: they can direct their child at right time allowing him or her learn necessary skills for future life. The keyword here is good relations. If family members spend much time together, they contribute jointly and children are exposed to work education almost daily. However, educating children cannot be separated from teaching values, so work education is based on sharing values and attitudes, which begins in early childhood.

### Bibliography

1. Arendi P. (2011). *Töökasvatus koolieelses eas (Work Education in Pre-School Age)*. Tallinn: TEA Kirjastus. (in Estonian)
2. Brühlmeier A. (2009). *Kujundada inimest: 27 mosaiigikildu (To Shape a Person: 27 Pieces of Mosaic)*. Tartu: Väike Vanker. (in Estonian)
3. *Eesti regionaalarengu strateegia 2020 lähteolukorra analüüs. Tööversioon (Analysis of Baseline of Estonian Regional Development Strategy 2020. Working Version)*. (2012). [online] [09.11.2016]. Available at [http://www.koda.ee/public/ERAS2020\\_lahteolukorra\\_analuus\\_uus.pdf](http://www.koda.ee/public/ERAS2020_lahteolukorra_analuus_uus.pdf) (in Estonian)
4. Gillham B. (2000). *The research interview*. London, New York: Continuum.
5. Hansson L. (2014). Tööjaotus ja võimusuhted perekonnas (Division of Labour and Power Relations in the Family). In Roosalu T.T. (Eds.). *Soolise võrdõiguslikkuse monitooring 2013 (Gender Equality Monitoring 2013)*. Tallinn: Sotsiaalministeeriumi toimetised, pp. 36 – 46. [online] [01.09.2016]. Available at [http://www.sm.ee/sites/default/files/content-editors/Ministeerium\\_kontaktid/Uuringu\\_ja\\_analuusid/Sotsiaalvaldkond/sooline\\_vo\\_monitooring\\_2013\\_veeb.pdf](http://www.sm.ee/sites/default/files/content-editors/Ministeerium_kontaktid/Uuringu_ja_analuusid/Sotsiaalvaldkond/sooline_vo_monitooring_2013_veeb.pdf) (in Estonian)
6. Hirsjärvi S., Remes P., Sajavaara P. (2010). *Uuri ja kirjuta (Research and Write)*. Tallinn: Kirjastus Medicina. (in Estonian)
7. Kera S. (2005). *Kuidas elab kooliklass (How a class of students live)*. Tallinn: Kirjastus Ilo. (in Estonian)
8. Korvela P. (1999). Constructing “Home” through Everyday Actions in Families – A Methodological Perspective on Analyzing the Home. In Turkki K. (Eds.). *New Approaches to the Study of Everyday Life*. – Part I. Proceedings of the International Household & Family Research Conference, Research Reports 3. Helsinki: University of Helsinki, pp. 80 – 92.
9. *Lapsed ja Eesti ühiskond. Väärtushinnangute uuring RISC. Lisa Eesti maa-aruandele (Children and Estonian Society. Values Study RISC. Annex to Estonia's Country Report)*. (2006). Tallinn: Sotsiaalministeerium, p. 93. [online] [01.09.2016]. Available at [http://www.sm.ee/fileadmin/meedia/Dokumendid/Sotsiaalvaldkond/kogumik/risc\\_lisa\\_2006\\_1.pdf](http://www.sm.ee/fileadmin/meedia/Dokumendid/Sotsiaalvaldkond/kogumik/risc_lisa_2006_1.pdf) (in Estonian)
10. Leppik P. (2010). *Mure Eesti kooli pärast (Concern about the Estonian School)*. Tartu: Tartu Ülikooli Kirjastus. (in Estonian)
11. Morrow V. (2011). Rethinking childhood dependency: Children's contributions to the domestic economy. *The Sociological Review*. Vol. 44 (1). [online] [13.09.2016]. Available at [https://www.researchgate.net/publication/229482369\\_Rethinking\\_childhood\\_dependency\\_Children%27s\\_contributions\\_to\\_the\\_domestic\\_economy](https://www.researchgate.net/publication/229482369_Rethinking_childhood_dependency_Children%27s_contributions_to_the_domestic_economy)
12. *Soolise võrdõiguslikkuse monitooring maapiirkondades 2011 (Gender Equality Monitoring in Rural Regions 2011)*. (2011). Tallinn: EV Põllumajandusministeerium. [online] [06.09.2016]. Available at [http://www.agri.ee/sites/default/files/public/juurkataloog/maaelu/uuringud/2011\\_svm.pdf](http://www.agri.ee/sites/default/files/public/juurkataloog/maaelu/uuringud/2011_svm.pdf) (in Estonian)
13. Tuulik M. (2001). *Kasvatusõpetus (Handbook of the Education)*. Tallinn: Riiklik Eksami- ja Kvalifikatsioonikeskus. (in Estonian)



## The Necessity of Teaching Material and Its Development in Technology Education in Estonia

Aron Lips<sup>1</sup> MA; Andry Kikkull<sup>2</sup> PhD

Tallinn University, Estonia<sup>1,2</sup>

[aronlips@tlu.ee](mailto:aronlips@tlu.ee)<sup>1</sup>; [andryk@tlu.ee](mailto:andryk@tlu.ee)<sup>2</sup>

**Abstract:** In the year 2011 the last curriculum for basic schools in Estonia was accepted. The implementation of the curriculum challenges teaching materials in use. Estonian lifelong learning strategy 2020 foresees the modernization and renewal of teaching materials through increasing their digitalization. To find out the current status of study ware in general education schools, a mapping was carried out in Estonia from February to April 2016. The mapping covered all the subjects including technology education. This study made it possible to get a nationwide overview of the existing teaching materials and its quality that support the curriculum. For the authors of this article, the mapping created interest to find out whether and how the Estonian technology education teaching materials have changed and developed in recent decades to meet the various existing syllabus goals. What type of teaching materials are used by the technology teachers now and what kind of teaching materials they need for technology lessons and meeting the goals in the curriculum? To answer the questions in the research results of the mapping of teaching materials and content analysis of technology education textbooks and syllabuses are used in this article. To find out the needs of teachers the results of a survey from autumn 2016 and its analysis were taken as a base. To analyze the data in the survey a programme SPSS 22 was used. As an overall result there can be said that the change in the theoretical content of teaching materials corresponds the changes in the curriculum. At the same time instructional materials of practical tasks have not changed enough. These are, however, the most required and used by the teachers in the teaching process. Instructional materials for practical tasks created using today's digital possibilities are most needed by teachers.

**Keywords:** craft and technology education, school education, teaching materials.

### Introduction

Just as education policy changes over time and in accordance therewith new school curriculums are adopted, different study materials used for covering the curriculum must also comply with the changes. As teachers we all have a common goal to develop students in such a way that they would become independent learners who are able to identify, understand and analyze ideas and use their knowledge for solving problems (Dobler, 2015). In order to accomplish this goal, learning must be active, attentive, important and self-directed process. In classroom the primary learning tools are study materials which contain plenty of meaningful information, yet some students are challenged by reading study materials because of their hard readability, complex wording and overcrowded content (Allington, 2001). These situations may present cognitive challenges reflected by decline in reading motivation or inexperience of understanding dense text and creating on this basis new meanings (Sheridan-Thomas, 2008). However, digital study materials which can promote active and self-directed learning, offering learners different ways and forms for receiving information, are gaining popularity and offering an alternative (Schunk, Zimmerman, 1998). E-study materials can comprise different opportunities for supporting learners; it may be reflected in font size options, using interactive links, changing text to speech or presenting information through video clips. In this way, learning can be promoted in ways which were not possible before with study materials containing printed texts (Dobler, 2015).

As a changing approach to learning, digitalization of study materials in compulsory schools by year 2020 is also provided for in Estonia as one important education reform (Eesti elukestva..., 2014). The subject of technology education taught in compulsory schools must also go along with the above developments. Digital study materials have several advantages over printed study materials, primarily their interactivity, yet their lower production costs are also not of little importance (Hawkins, 2000). However, the publishers producing study materials are yet hesitant, fearing piracy and trying to develop study materials to be impossible to copy or to print out (Minkel, 2000).

Although modern technology changes our forms of educational information transmission, their content still remains most important. Therefore, also while creating study materials in modern form, we must turn toward curriculum for producing their contents. During Estonian re-independence period the subject

of technology education has had a total of three different curriculums which have evolved from traditional crafts increasingly toward technology education (Kikkull, 2016; Soobik, 2015). The curriculum of technology education has become in time less specific and more general, allowing to achieve the curriculum objectives while addressing learning topics differently and doing practical works (Kikkull, 2012; Soobik, 2011). Therefore, while creating new study materials, it is important to know which study materials technology education teachers use in schools for covering the curriculum. While producing new study materials, in addition to fulfillment of curriculum requirements, didactic questions also arise, namely what types of study materials teachers need today. Should only modern form be considered in the case of new study materials, or should their contents also be renewed? Answers to these questions are searched in this article which objective is to provide an overview of study materials used in Estonian technology education, frequency of their usage and need for new study materials.

## Methodology

Analysis of this article is based on two studies: firstly, a comparative study of Estonian technology education textbooks development trends and current curriculums, and secondly, identification of user habits and needs of technology teachers with respect to study materials were being used. Therefore, the following research questions were formed for addressing this topic:

- what are the development trends of textbooks being used in technology education?
- what are the Estonian technology teachers' user habits and preferences with respect to study materials and what are the needs for new study materials?

Document analysis (Flick, 2014) was used to find the answer to the first research question. In the case of document analysis, context must always be considered while interpreting data. Official documents allow generally less room for different interpretations and their context is more limited; it makes their analysis easier and less ambiguous, making therefore the creation of meanings also easier (Greenwood, Levin, 2000). In current study different textbooks and curriculums were addressed as documents, in which case the developments of structure and content of textbook were compared to the requirements of curriculum content. Technology education textbooks that were published regularly in Estonia since the 1970s were used in the analysis. 5 textbooks or series of textbooks published in different years and corresponding curriculums were selected for analysis.

A web-based questionnaire was used for finding the answer to the second research question. The e-Formular environment was used for conducting the survey and it was conducted in the autumn of 2016. The questionnaire was forwarded to all Estonian schools providing basic education where technology education was taught. In 2016 there were 454 such schools in Estonia (Koolid, 2016). However, at the same time many technology education teachers work in several schools and therefore assessing their overall number is difficult (Tööõpetuse õpetajate..., 2010). The questionnaire included nine free and multiple-choice questions, answering to which took approximately 10 min. The questions were divided into three blocks: background information of the respondent, study materials being used and frequency of their use, and need for new study materials. 66 questionnaires arrived back with answers. Of the teachers who responded, 90 % were men and 10 % women, corresponding to the overall gender breakdown of Estonian technology teachers (Tööõpetuse õpetajate..., 2010). The average age of the teachers was 49 years, expressing the general average age of Estonian teachers which was 47,9 years in 2013 (Eisenschmidt, Ruus, 2015). The survey provided data belonging to different feature types that were analyzed with the program SPSS 22 which enabled to present different necessary statistics.

## Results and discussion

In the first study focusing on identification of study materials development trends, the structure and content of textbooks was analyzed and compared to the curriculums that were in force in that period of time. As stated above, five main textbooks published in different times were used in the analysis. The results of the analysis are summarized in Table 1. The results indicate that first textbooks published (I) were in compliance with the study programs that were in force in the years of publishing the textbooks; these study programs were very detailed and the textbooks were suitable for being instruments of their implementation. The contents of these textbooks were very technical and their text was complex. The part of material processing included different processing technology instructional material. For supporting the study programs, textbooks of electro-technical and bookbinding work were also

published separately; but these textbooks are not included in current analysis. The woodwork and metalworking textbooks (I) that were used in the analysis were several times reprinted during 16 years. Since 1991 after regaining Estonian independence, class-based textbooks (II) began to appear one by one. The curriculum of 1996 reduced considerably the number of topics being taught and simplified and generalized learning content. The published class-based textbooks (II) distributed the topics of previous technology-based textbooks by classes and significantly simplified learning content. The part of woodwork and metalworking integrated different material processing technologies with work instructions for the manufacture of articles (Table 1).

Table 1

### Comparison of textbooks and curriculums

Textbook	Content distribution	Comments on the textbook	Beginning of validity and name of the curriculum	Topics
(I) 1974-1990 - woodwork and metalworking textbooks based on processing technology, a 160 pg.	30 %- materials science, 35 %- manual processing, 35 %- machine processing	The part of material science – specific hard text. The part of processing – material processing techniques.	Estonian Soviet Socialist Republic (ENSV) and first Republic of Estonia (EV) study programs	General technical preparation, woodwork, metalworking, electro-technical work, housework, gardening and agricultural work, bookbinding work.
(II) 1991-2000 – class-based series of crafts textbooks, a 80 pg.	30 %- general technical preparation, 35 %- woodwork, 35 %- metalworking	Simplification of previous textbooks and distribution of topics by classes.		General technical preparation, woodwork, metalworking and works by choice.
(III) 2005 ja 2007 - woodwork and metalworking textbook based on processing technology, 80 pg.	50 %- technical knowledge, 50 %- work instructions	Technical knowledge-manual and machine processing of material and materials science, electric hand tools.		Technological history and literacy, contemplation and technical creation, processing of materials, coat finish and electric hand tools
(IV) 2011 – technology and creativity textbook, 150 pg.	70 %- engineering and technology, 30 %- work instructions	Engineering and technology, design and materials science.	2011- Technology education	Technology in everyday life, design and drafting, processing of materials, homemaking, project work.
(V) 2011-2015 – class-based technology education textbooks, a 100 pg.	100 %- technology theory	Literature translated from French language, theory of technology.		

In 2002 the curriculum „Craft- and technology education” was established which name already indicated the developments toward technology education. The level of detail increased in the curriculum again and new topics were added to traditional ones: electric hand tools, technical literacy. In 2005 a technology-based woodwork and metalworking textbook was published (III) again. The new curriculum’s learning content was generally reflected in the textbook. However, half of the textbook volume was devoted to work instructions for manufacturing different articles and therefore the textbook could not entirely communicate the curriculum’s learning content any more.

In 2011 the last curriculum „Technology education” took effect. Previous general technical and engineering learning content was changed into technology studies. The textbook „Technology and Creativity” (IV) no more included woodwork and metalworking instruction, but focused on general introduction of different technologies and alternative materials such as glass, plastics and leather. One third of the textbook consists of a collection of work instructions for different articles. Therefore, this textbook does not enable teaching of basic skills for material processing and is useful for covering theoretical part of technology education and as an additional study material beside older textbooks.

The last series of textbooks (V) „Technology education” is the only translated literature and includes theoretical material of technology education. The textbook is appropriate only for covering the curriculum’s topic „Technology in everyday life”. It may be concluded that textbooks have generally followed curriculum developments and strived to cover the learning content nationally prescribed for the subject. Strong tendencies toward deepening technology education appear in these developments. However, it can be seen that for covering the whole curriculum the production of different textbooks is required, be they based on classes, material processing technologies or different curriculums. Although in the 21st century new technology themed textbooks have been produced for Estonian technology education subject, the textbooks dealing with different materials processing have remained in content and in form into the previous century.

In case of second survey it was important to get an overview of the importance of study materials in technology education. In the context of this article, study materials are defined as different digital and printed materials enabling to communicate learning content that have been used in technology education so far, like textbooks, work instructions, handbooks and learning objects, that were identified in the course of Estonian study ware mapping (Lips, 2016). In the case of multiple-choice answers in the questionnaire, a list of different types of study materials was specified for teachers.

Teachers were initially questioned about how often on average they use study materials in technology education lesson. Figure 1 gives an overview of the results. The answers indicate that 42 % of the teachers use different study materials in technology education lesson 2-3 times a month (Figure 1). Taking into account that one study group has technology education lesson four times a month, then 60 % of teachers use at least every second lesson or more often some study material for conducting a lesson. This result suggests that study materials are for teachers relatively important tools in teaching.

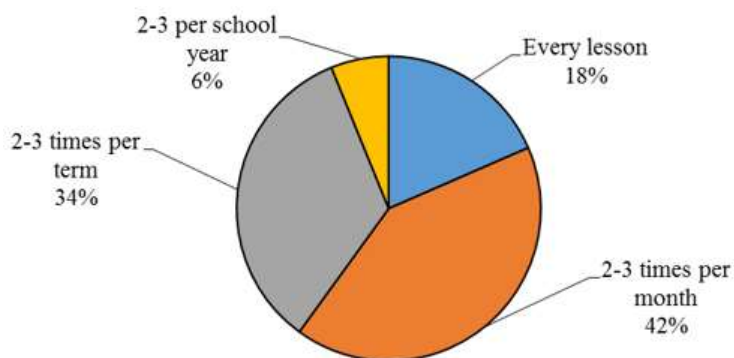


Figure 1. Frequency of study materials usage by technology education teachers.

The main form for achieving technology education learning objectives has been through times practical independent work with materials and tools (Rihvk, Malmstein, 2008). The technology education curriculum that was in force in 2002 also pointed out that practical activity should comprise in technology education lesson approximately two thirds of study time. Such proportion had not to be followed in every lesson. While covering new type of work or topic, most of a lesson was spent on covering theory questions and working practices. Yet in lessons where laborious items were manufactured, the majority of time was dedicated to practical work (Põhikooli ja gümnaasiumi..., 2002). The new technology education curriculum adopted in 2011 did not, however, specify similar volume of practical learning activity, and emphasized the importance of different technological knowledge learning topics instead, pointing out that in technology education the studies are divided into five theme blocks: technology in everyday life; design and drafting; material processing; homemaking; project work. First three parts comprise approximately 65 % of teaching, homemaking 10 % and project work 25 % (Ainevaldkond „Tehnoloogia”, 2011). Therefore, in relation to these developments, it is important to know which type of study materials are most used by technology education teachers and whether it is related to the increase in theory volume of studies or to teaching of practical working practices.

Next it was examined which type of study materials the teachers have used in teaching and what are their user preferences. An overview of the responses is given in Figure 2 which indicates that most of the teachers have used printed textbooks (77 %) and instructional materials written by themselves, followed by videos found on the web (65 %) (Figure 2). It can be understood, because in Estonia

technology education textbooks have been issued mostly compared to different study materials, and a textbook may seem to be the best study material precisely for a newer teacher.

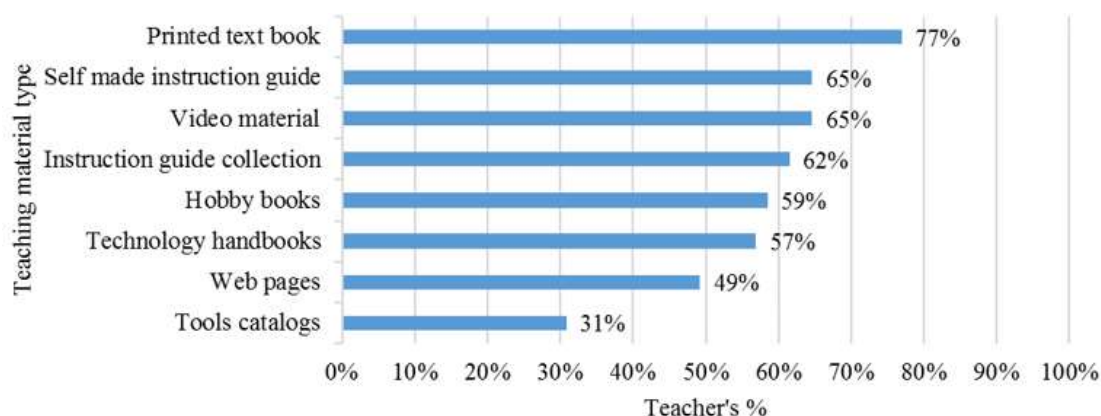


Figure 2. Study materials used by teachers.

Textbooks in the field of technology have been published regularly in Estonia since 1970s. Since then, in Estonia several technology education textbooks, a collection of work instructions and series of textbooks have been published which were offered to the teachers for ranking according to the frequency of their usage. This sample included:

- 1974-1990 – woodwork and metalworking textbook based on processing technology;
- 1992 ja 1990 – work instructions collection;
- 1991-2000 – class-based series of craft textbooks;
- 2005 ja 2007 – woodwork and metalworking textbook based on processing technology;
- 2011 – technology and creativity textbook;
- 2011-2015 – class-based technology education textbooks translated from French language.

The analysis of sequencing results indicated that teachers use mostly the class-based craft textbook that was published during years 1991-2000. This can perhaps be justified by teachers' common understanding of learning process where they trust the division of study themes and their contents provided by the study material's author which must meet the curricular requirements. In Estonia, the newest technology education textbooks published in 2011-2015 that are translated from French language have also been issued as class-based. Teachers, however, have not adopted these and they are least used of textbooks. This situation can be justified with the fact that technology education is strongly linked to local culture and traditions and would not so easily be subject to general educational trends (Schleicher, 1991), and that Estonian technology education has traditionally focused on practical work which is not supported by this textbook. The teachers ranked on second place the collection of work instructions that was issued already in 1992 and includes 93 work instructions for doing practical works. While looking at usage of textbooks based on processing technology, it can be observed that here the newest textbooks are used, namely the study material issued in 2005 which includes also 50 % work instructions collection. However, the teachers prefer woodwork textbook over other technologies, indicating again the material processing traditions that are common in Estonia.

At the same time a question raised whether a textbook is also the most used study material in technology education lesson? For answering this question, the teachers were asked to rank different study materials according to frequency of their usage. Although previous question indicated that teachers had used in teaching mostly textbook, however, it was not any more the case according to the sequence on the basis of frequency of usage. The teachers ranked study materials as follows:

1. self-written work instruction;
2. collection of worksheets or work instructions;
3. textbook;
4. web environments and webpages;
5. web video material;
6. technology handbook;
7. workbooks;
8. web-based learning objects;

9. hobby activities book;
10. tools catalogue.

Thus, according to frequency of usage, teachers use textbook only as third study material, preferring by far both self-written and printed work instructions. Consequently, it can be argued that in Estonian technology education lesson learning through practical work during which different artifacts are manufactured remains central. This result will once again highlight the peculiarity of technology education where teachers while setting study goals follow more their own interests and the school's material technical base than what is provided in the curriculum (Kikkull, 2012; Kikkull, 2016).

The above does not, however, throw light on the question what should be further development of study materials in technology education and whether teachers prefer to use in teaching digital or traditional study materials specially developed for technology education. Therefore, it is important to determine what study materials technology education teachers need. Although study materials on paper were most used by teachers, different digital study materials cannot be excluded either. In spring 2016 in Estonia nationally conducted compulsory school's study materials mapping demonstrated that in technology education the essential study materials for covering the curriculum exist on paper. There is also a small amount of digital study ware which covers all topics in the subject area episodically or partially. Thus correct digital study ware is missing in technology education (Lips, 2016). Usage of digital study materials was clarified with the teacher survey which indicated that teachers rank by far as the most popular the YouTube video environment that was pointed out 28 times. Different types of DIY and 'How to do' video materials being used for educational purposes are probably meant here. There are special technology education learning objects and study subjects' associations websites where study materials can also be found were marked only 1-2 times. The survey demonstrated that although 91 % of teachers have themselves prepared for their students different, mainly printed study materials in the form of manufacturing drawing or work instruction, many (71 %) teachers lack courage or skills for preparing web-based instructional or study materials which would also be available and usable for other teachers. This trend may stem from both teachers' low self-esteem and lack of didactic materials preparing skills.

For determining further development trends of study materials the teachers were finally asked what type and content of study materials technology teachers need more. For determining the study material types, teachers had to assess the need for specified paper and digital study materials on 9-stepped Likert scale where 1 was the most needed and 9 the least needed study material. The study materials sequence based on averages is presented in Figure 3.

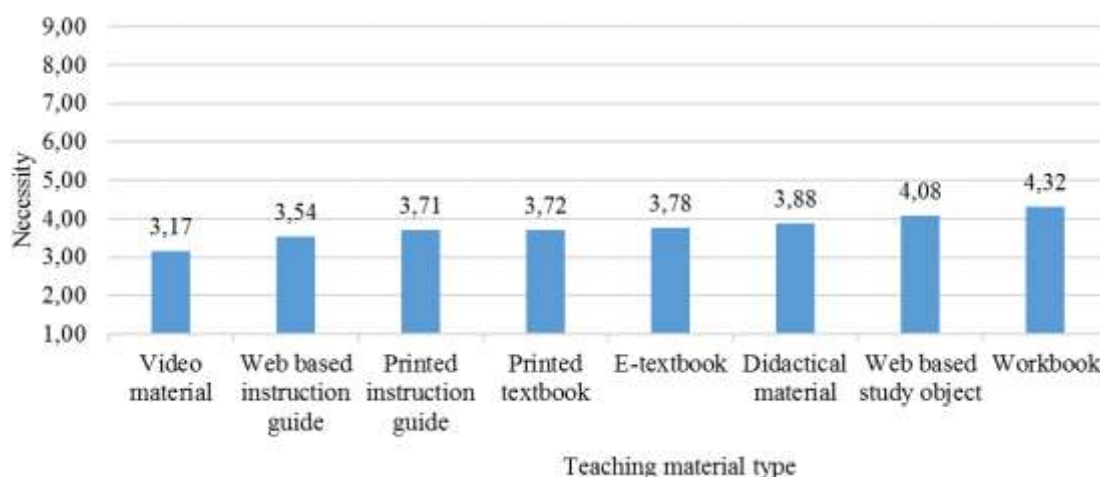


Figure 3. Averages of needs for study material types.

The analysis of study materials sequence and averages indicates that most teachers need different types of study materials (all study materials have mode 1), but video materials are wanted the most ( $M=3,17$ ;  $SD=2,78$ ), which is in accordance with the use of digital materials mentioned above. It is followed by web-based and printed work instructions. Comparative analysis of age groups and study material needs of respondent teachers did not provide significant differences of opinions (Figure 3).



Finally, it was examined what content of study materials teachers need. The question was presented as an open question and the teachers' answers were categorized. It is worth noting of the results that learning content related to *material processing* was brought out at most, namely 11 times. 9 times the teachers wanted *electronics and electrical engineering study materials* and 4 times *robotics* materials. Thus teachers are still interested in study materials related to different materials processing which could be prepared as video material or digital and printed work instructions. However, modern technology fields like electronics and robotics are also gaining popularity.

## Conclusions

In conclusion, it can be brought out that technology education study materials have developed unevenly through different curriculums in Estonia and different theory themes materials have been developed more than has been invested in preparing materials with practical orientation. In the same time, different study materials together cover the curricular topics.

Although textbook is the most widely used study material among teachers, different work instructions that are directly related to manufacturing different artifacts are still a favorite of technology teachers. In the same time students need different basic knowledge and skills before starting practical work. Teachers think that this basic knowledge and skills would be most reliably taught using a class-based textbook in which the learning content has been already divided into topics following the inner logic of the subject. Although teachers can use several printed textbooks with different level and structure, they see great potential also in modern digital solutions which can be implemented in study materials. This is testified by frequency of usage of YouTube video environment by teachers and the need for video materials created especially for technology education that has been pointed out.

The fact that technology education in Estonia is still a subject with practical orientation and teachers miss namely modern material processing study materials may be pointed out as an important one.

## Bibliography

1. *Ainevaldkond „Tehnoloogia” (Subject field "Technology")*. (2011). Põhikooli riiklik õppekava lisa 7. Eesti: Vabariigi Valitsuse 06.01.2011. a määruse nr 1. Tallinn: EV Riigi Teataja. [online] [06.12.2016]. Available at <https://www.riigiteataja.ee/akti/isa/1290/8201/4018/141m%20lisa7.pdf> (in Estonian)
2. Allington R. L. (2001). *What really matters for struggling readers: Designing research-based programs*. Boston, MA: Allyn & Bacon.
3. Dobler E. (2015). e-Textbooks. *Journal of Adolescent & Adult Literacy*, Vol. 58(6), pp.482 – 491. [online] [06.11.2016]. Available at <http://doi.org/10.1002/jaal.391>
4. *Eesti elukestva õppe strateegia 2020 (Estonian Lifelong Learning Strategy 2020)*. (2014). [online] [06.11.2016]. Available at <https://www.hm.ee/sites/default/files/strateegia2020.pdf> (in Estonian)
5. Eisenschmidt E., Ruus V.-R., Poom-Valickis K. (2015). Õpetajahariduse perspektiivid – olukord ja väljakutsed (Teacher Education Perspectives - situation and challenges). *Riigikogu Toimetised* Vol. 31. (in Estonian)
6. Flick U. (2014). *An Introduction to Qualitative Research* (5th ed.). London: SAGE Publications.
7. Greenwood D. J., Levin M. (2000). Reconstructing the relationships between universities and society through action research. In Denzin N.K., Lincoln Y.S. (Eds.). *Handbook of qualitative research*. Thousand Oaks, CA: SAGE Publications, Inc., pp. 85 – 106.
8. Hawkins D. T. (2000). Electronic Books. *Online*, Vol. 24(5), pp.18 – 36.
9. Kikkull A. (2012). Comparing the Nordic countries' and the Estonian Craft syllabuses. Similarities and differences. In Dišlere V. (Ed.). *Proceedings of the 5th International Scientific Conference Rural Environment. Education. Personality (REEP)*. Jelgava: Latvia University of Agriculture, pp. 154 – 160.
10. Kikkull A. (2016). *Didaktilised ja organisatoorsed tingimused õpilaste teadmiste praktikasse rakendamise tõhustamiseks tööõpetuse ja reaainete loimingu kaudu põhikoolis (Didactic and organizational conditions for forming students' applicability of knowledge through integrating craft and sciences in compulsory school)*. Doktoritöö. Tallinn: Tallinna Ülikool. (in Estonian)
11. *Koolid (Schools)*. (2016). EHIS - Eesti Hariduse Infosüsteem. [online] [06.11.2016]. Available at <https://enda.ehis.ee/avalik/avalik/oppeasutus/OppeasutusOtsi.faces> (in Estonian)



12. Lips A. (2016). Tehnoloogia (Technology). In Kõiva M, Müil E., Varend L., Raudsepp I., Mjalitsina N.(Eds.). *Ülevaade üldhariduse õppevara kaardistusest 2016. a.* Tallinn: SA Innove. (in Estonian)
13. Minkel W. (2000). The E-Textbooks are Coming. *School Library Journal*, Vol. 46(9), p. 18.
14. *Põhikooli ja gümnaasiumi riiklik õppekava (The national curriculum for basic schools and upper secondary schools)*. (2002). Eesti: Vabariigi Valitsus. [online] [06.11.2016]. Available at <https://www.riigiteataja.ee/akt/162998> (in Estonian)
15. Rihvk E., Malmstein K. (2008). Motivatsioon tööõpetuses (Motivation in craft education). *Haridus*, Vol. 11-12, pp. 30 – 33. (in Estonian)
16. Schleicher K. (1991). Handicrafts. In A. Lewy (Eds.). *The International Encyclopedia of Curriculum*. Israel: Pergamon Press, pp. 694 – 698.
17. Schunk D. H., Zimmerman B. J. (1998). *Self-regulated learning: From teaching to self-regulated practice*. New York, NY: Guilford.
18. Sheridan-Thomas H. K. (2008). Assisting struggling readers with textbook comprehension. In Hinchman K. A., Sheridan-Thomas H. K. (Eds.). *Best practices in adolescent literacy instruction*. New York: Guilford Press, pp. 164 – 184.
19. Soobik M. (2011). Innovative Approaches to Technology Education in Estonian General Education Schools. *Procedia - Social and Behavioural Sciences* Vol. 29, pp. 57 – 66. [online] [16.11.2016]. Available at <http://www.sciencedirect.com/science/article/pii/S187704281102667X>
20. Soobik M. (2015). *Innovative trends in technology education. Teachers' and students' assessments of technology education in Estonian basic schools*. Doctoral Thesis. Tallinn: Tallinna Ülikool.
21. *Tööõpetuse õpetajate andmed 2010-11. (Craft teachers' data in the 2010-11)*. (2010). Tallinn: Eesti Hariduse Infosüsteem. (in Estonian)

## Thinking of Pupils in the Lessons of Home Economics and Technologies

Gundega Marcenko<sup>1</sup> BSc. paed.; Vija Dislere<sup>2</sup> Dr. paed.  
Jelgava Primary School No 4<sup>1</sup>; Latvia University of Agriculture, Latvia<sup>2</sup>  
[gundega.marcenko@gmail.com](mailto:gundega.marcenko@gmail.com)<sup>1</sup>; [vija.dislere@llu.lv](mailto:vija.dislere@llu.lv)<sup>2</sup>

**Abstract:** The problem is related to developing pupils' thinking skills during the lessons of *Home Economics and Technologies* at primary school for school years 5-6. The present paper theoretically analyses the thinking qualities of primary school pupils. The aim of the research is to determine whether pupils have the qualities of thinking individual and what kinds of thinking are appropriate for pupils during the lessons of *Home Economics and Technologies*. The criteria for assessment of school pupils' thinking skills and abilities were developed. The research study was carried out at the Institute of Education and Home Economics, Latvia University of Agriculture. The survey was carried out at Jelgava Primary School No. 4 with the participation of 54 respondents – pupils of grade 5 and 6. Thinking – both creative, critical and logical – is a fundamental human activity, and it is very important in problem-solving and decision-making. In their self-evaluation, the pupils rated their human thinking skills as high. The pupils had sufficiently developed their creative and critical thinking skills, while their logical thinking ability was lower during the lessons of *Home Economics and Technologies*. The promotion of pupils' thinking is one of the most important tasks of the study process that develops new thinkers; then an idea is followed by action, which is significant for training in *Home Economics*. The paper's target audience is teachers and educational advisers.

**Keywords:** creative, critical and logical thinking, Home Economics, school pedagogy.

### Introduction

In their pedagogical practice, the authors have faced a problem – pupils “get stuck” on some kind of task or problem, or a question and cannot solve it or find an answer. They do not seek for new, innovative and creative solutions to problems in the study process. The reason is the lack of flexibility and diversity in thinking. Every pupil is able to think, nevertheless they cannot apply their thinking in a sufficiently flexible way during their studies and in various life situations. *Home Economics and Technologies* is a study subject that is mainly based on the development of creative thinking, pedagogical practice reveals that pupils still often choose the easiest solution – the imitation of a teacher.

The aim of the research is to determine whether pupils have the qualities of a thinking individual and what kinds of thinking are appropriate for pupils during the lessons of *Home Economics and Technologies*.

### Characteristics of thinking at primary school

Thinking (*denken* in German; *мышление* in Russian) may be explained as a process of the human psyche that allows exploring the reality and linking everything felt and understood earlier. By using their thinking, humans can discover associations and differences that exist among objective phenomena and processes (Žukovskis, 2015). However, I. Veidnis stresses that thinking is a kind of psychic activity, which ensures the stability of productive thinking as well as represents a degree of cognition that shapes the basis for scientific cognition and creativity in any area of human activity (Veidnis, 2011).

By means of thinking, humans comprehend associations and differences existing among phenomena and processes taking place around. The starting point of thinking is a problem situation that emerges when the ways of achieving a goal and solutions to the problem have to be found. In a problem situation, thinking involves a number of phases (Liepiņa, 2003):

- comprehension of questions, identification of the known and the unknown;
- putting forward a hypothesis;
- verifying the hypothesis;
- finding a solution, making a finding or a conclusion.

Thinking has the following essential peculiarities (Liepiņa, 2003):

- an ability to assess all the combinations of variables when seeking for a solution to the problem;
- an ability to predict how a variable influence another one;

- an ability to combine and separate variables in a hypothetic and deductive way.

Human thinking remains unchanged – it develops and progresses together with the individual. The specifics of a personality's thinking forms according to the age, gender, profession and other social and individual factors influencing the individual (Šteinberga, 2013).

Thinking involves both the critical and the creative aspect of the human psyche; these aspects are used in judging and creating ideas. Thinking as an activity is involved in any process of the human psyche, which helps define or tackle a problem, make a decision or seek for comprehension. Thinking is a conscious human activity, but also unknown psychic processes are involved in it (Fišers, 2005).

### Critical thinking

At present at schools, a special focus is placed on critical thinking when designing study plans and programmes, as critical thinking helps build up decision-making and problem-solving skills. Such traits as openness, tendency to seek for the cause of a problem, curiosity, the wish to be well-informed and flexibility may be attributed to individuals thinking critically (Lai, 2011).

The understanding of critical thinking is based on the individual's ability to be aware of his/her opinion, to create new ideas, to analyse developments and to critically assess them. This is nonstandard thinking, which gives an ability to see and assess alternatives, to identify priorities, to establish facts, to determine the truth and the usefulness of phenomena and developments, to make necessary decisions and to correct mistakes made during the thinking (Kritiskās domāšanas..., 2012).

Critical thinking is a complex process that involves acquiring information, processing the information and making a decision (Figure 1) (Projekta „Jelgavas..., 2013).

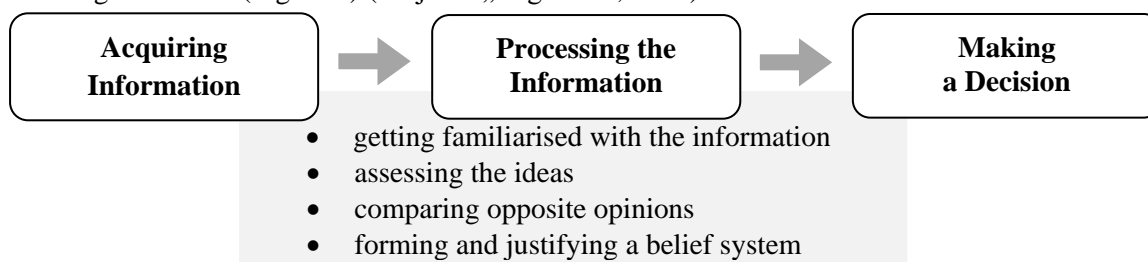


Figure 1. Critical thinking process (Projekta „Jelgavas..., 2013).

R. Paul suggests a set of basic principles of critical thinking, in which he recommends the ways of building up thinking skills in daily study practice. Critical thinking may be classified into three kinds – affective (emotions and will), macro-abilities and micro-skills. These kinds are interdependent. The scientific purpose is to develop critical thinking in a broader sense by employing the methods that encourage pupils to become skilful thinkers who are able to judge and are free of prejudice (Fišers, 2005; Paul, Elder, 2006). In developing critical thinking, it is of great importance to clearly define questions. A problem has to be justified, the sources of information have to be known, the situation has to be analysed comprehensively, alternative solutions have to be searched for and a reasoned opinion or a position has to be chosen (Burceva, Davidova, 2010).

Thinking is important in any life sphere of humans; therefore, particularly critical thinking is stressed as one of the key goals in education, as it helps build up decision-making and problem-solving skills in every process of human life. After learning critical thinking skills, pupils can critically assess their available information and results achieved and justify and defend their thoughts and opinions at any stage of their thinking.

### Creative thinking

At school, the development of creative thinking in pupils is important. Creative thinking mainly involves imagination, the formation of mental associations and the interaction of one's subjective perception, fantasies and dreams. However, imagination in particular is strongly associated with the personality's subjective psychic perception and the development of the personality's thinking on the whole, which is accompanied by the formation of certain emotional attitudes (Svence, 1999).

Creative thinking is a kind of thinking that views a problem or a situation from another perspective; as a result, new and non-traditional solutions to the problem are sought. Creative thinking could be stimulated through an unstructured process (brainstorming) and a structured process (lateral thinking) (Creative thinking, 2016). However, creativity may not be always associated with a problem their disassociation is controversial. A problem emerges if there is a goal – the problem has to be solved, although there is a lack of finance to achieve the goal. To tackle a creative problem, creative solutions to the problem are necessary (Bebre, 2013).

R. Fisher believes that creative thinking is a comprehensive range of human attitudes and abilities that allows developing creative thoughts, ideas and images. A creative process partially employs intuition and incidentally explained coincidences that yield positive results. A teacher, a parent, a peer and a schoolmate could be a promoter of the creative process that helps pupils think creatively (Fišers, 2005).

A defused, defocused attention is typical of creative people, which ensures the perception of diverse information. Individuals with a wide range of attention can perceive and process different information (Bebre, 2013).

Compared with critical thinking, creative thinking is more cheerful, creative and freer as well as open to diverse ideas. Creative thinking skills involve (Coughlan, 2008):

- searching for as many answers as possible, instead of only one;
- making many and diverse, maybe even crazy assumptions;
- not criticising ideas in the beginning of a job – dealing with any idea as if the idea contains a small part of the result to be achieved;
- daring to toy with and dream of diverse ideas and theories or suggestions;
- dealing with as many ideas and suggestions as possible, while being aware that they, potentially, will not be useful;
- making mistakes;
- learning from what was done and from what has not been done yet.

### **Logical thinking**

Logical thinking is a process of thinking in which an individual uses logical concepts and design, which have very convincing judgements and the purpose of which is to get reasoned conclusions from the available space (Логическое мышление..., 2016).

Logical thinking is an important basic skill. It is based on the sequence of thoughts. The process of thinking requires accepting ideas, facts and findings and integrating them in the problem solution chain. Thinking logically means thinking step by step (Milková, Hůlková, 2013).

Logical thinking is a process, by means of which individuals comprehend concepts and judgements and dynamically reflect the objective reality and a rational understanding of the developments, which is also referred to as theoretical thoughts. The structure and performance of such a kind of thinking, if regularly analysing the emergence and development of it, forms understanding. Only through logical thinking individuals can get an understanding of the nature of particular objects and comprehend the objective world. Logical thinking is a component of the cognition process, in which the reality of the process is reflected using concepts, judgements and arguments. Logical thinking is analytical; every element is considered step by step and each step has to be accurate (Loġiskā domāšana, 2015). In order for the process of logical thinking to take place step by step, it is possible to employ the methods of deduction and induction, which helps get a logical and reasoned answer.

Deduction is based on the principle of logic and consistency a logical conclusion is derived from generalised information. Deduction ensures that a finding is credible and knowledge obtained in a such a way is credible and reliable (Ивин, 1998). The deduction method is based on reasoning. It starts with generalised information or a hypothesis and gives an opportunity to achieve the goal by means of particular logical conclusions. It moves from general (theory) to specific (Bradford, 2015). According to W.M.K. Trochim's theory, an examination based on the deduction method is as follows: based on theoretical findings, a hypothesis is put forward, then observations are done and the hypothesis is proved or rejected (Trochim, 2006). Whereas induction is a method being opposite to deduction. It moves from specific observations to generalisations (Bradford, 2015). An examination based on the induction

method according to W.M.K. Trochim's theory is as follows: first of all observations are done, associations are identified based on them, and an initial hypothesis is put forward, which is proved by means of theoretical findings (Trochim, 2006). In learning and teaching, induction may not be separated from deduction, and the study process has to move in both directions. Depending on the task of teaching, the teaching has to move from general to specific or vice versa. Logical thinking develops slowly – in the result of experience, mistakes and trials. Our schools traditionally focus on developing logical thinking, which involves memorising mechanically and learning the operations of thinking: to compare, specify, abstract, analyse and synthesise (Svence, 1999). In addition, pupils develop an ability to concentrate and mathematical thinking, which results in an ability to see similarities (Myers, 2000).

## Methodology

The research study was carried out at the Institute of Education and Home Economics, Latvia University of Agriculture. In the beginning, pedagogical observations were done to study and define the problem. A survey on the thinking skills and abilities of primary school pupils was conducted by the authors. Given the findings obtained in the theoretical research, criteria for assessing pupils' thinking skills and abilities were developed; the criteria were rated on a scale from 1 to 5, where 1 meant "no", while 5 "yes". The purpose of the questionnaire survey was to find out whether pupils have the qualities of a thinking individual and whether they have logical, critical and creative thinking skills, which are important in the lessons of *Home Economics and Technologies*. The criteria for assessment of school pupils' thinking skills and abilities were developed. The survey's methodology was based on a methodology developed by V. Tomsons (Tomsons, 2009). The survey was carried out at Jelgava Primary School No 4 from February to April 2016. The sample population was 54 pupils (23 males and 31 females) in grade 5 and 6; 46 % or 25 respondents were grade-five pupils, while 54 % of the respondents were grade-six pupils. The margin of error was 5 %, as it was preferred to have replies as accurate and correct as possible. The confidence level was 95 %, which ensured a greater probability that the survey's results would be the same if conducting a similar survey. The survey may not be generalised, as it has to give initial insight into a potential or non-existent problem in pupils' thinking. The survey data were processed calculating percentages, the mode, the median and performing a  $\chi^2$  test.

## Results and discussion

A summary of the respondents' replies is presented in Table 1 and Table 2. In the first table below the results are summarized of the survey where was asked the question: "Are you thinking individual? Rate yourself according to the criteria for a thinking individual on a scale from 1 to 5, where 1 means "no" and 5 means "yes" (Table 1).

Table 1

**Pupil self-ratings of the behaviour of a thinking individual according to the criteria developed by the authors (%)**

No	Criteria	Replies				
		1	2	3	4	5
		(no)	(rather no)	(don't know)	(rather yes)	(yes)
1	think comprehensively	4	4	31	50	11
2	assume risk	4	17	26	33	20
3	ask questions	2	13	24	35	26
4	seek for associations (similarities) and differences	9	19	26	26	20
5	solve problems	9	9	20	31	30
6	clearly express one's thoughts	11	13	26	35	15
7	enhance one's thinking	4	11	20	30	35
8	take into account the opinions of others	6	4	20	39	31

For analysis, the authors counted up replies "1 (no)" and "2 (rather no)" and then replies "4 (rather yes)" and "5 (yes)". The analysis of the survey data (Table 1) revealed that 61 % of the respondents admitted

they had a skill to think comprehensively, while 31 % had a neutral opinion (don't know), and only 8 % admitted they had no thinking skills. The average rating derived from the data was 4 (Me=4, Mo=4), which was "rather yes"; this showed the pupils' ability to reflect on an assignment was quite high.

Fifty-three percent of the respondents admitted they could assume risk, while 26 % had a neutral opinion (don't know), and only 21 % admitted that they had no tendency to take any risk. The average rating by the pupils was 4 (Me=4, Mo=4), which was a very good rating meaning the pupils could assume the risk.

Sixty-one percent of the respondents admitted they were used to ask questions, while 24 % had a neutral opinion (don't know), and only 15 % admitted that they were not used to ask questions. The average rating by the pupils was 4 (Me=4, Mo=4), which meant they were used to ask questions about interesting issues.

Forty-six percent of the respondents admitted they sought for similarities and associations, while 26 % had a neutral opinion (don't know), and only 28 % admitted that they were not used to seek for them. The average rating by the pupils was 3 (Me=3, Mo=3.4), which was a neutral rating; this allowed concluding that the respondents were not used to apply their knowledge in acquiring a new knowledge. However, based on  $\chi^2$  calculations ( $\chi^2=2.48 < \chi^2_{0.05;4}=9.49$ ), it can be concluded that the respondents' gender influenced the replies given, whereas the pupils' school year made no influence ( $\chi^2=43.71 < \chi^2_{0.05;4}=9.49$ ).

Eighteen percent of the respondents believed that their problem-solving ability was low; 20 % gave a neutral reply, while 61 % admitted they were able to solve problems. The average rating by the pupils was 4 (Me=4, Mo=4), which was a high rating indicating the respondents could solve their problems.

Twenty-four percent of the respondents admitted they had problems to express their thoughts orally, while 26 % had a neutral opinion (don't know), and 50 % admitted it was not a problem for them to express their thoughts orally. The average rating by the pupils was 3.5 (Me=3.5, Mo=4), which was a neutral rating that indicated that the pupils had to enhance their ability to express their thoughts orally.

Fifteen percent of the respondents admitted they did not enhance their thinking, while 20 % had a neutral opinion (don't know), and 65 % specified they needed to perfect their thinking. The average rating by the pupils was 4 (Me=4, Mo=5), which allowed concluding the pupils were used to enhance their thinking.

Ten percent of the respondents did not take into account the opinions of others, while 20 % had a neutral opinion (don't know), and 70 % admitted they took into consideration the opinions of other people. The average rating by the pupils was 4 (Me=4, Mo=4), which indicated that the surveyed pupils took into consideration the opinions of other people, and it is one of the key features of the behaviour of a thinking individual.

An analysis of the first set of questions revealed that the respondents rated themselves on average at Me=4, which indicated the respondents had the features of a thinking individual. The chi-square ( $\chi^2$ ) calculations showed that assumptions that the pupils' thinking was influenced by their school year or gender had to be refused, as the assumptions were not proven by any question asked.

In the table 2 the results are summarized of the survey where was asked the question: "Do you have the following abilities? Rate your thinking skills on a scale from 1 to 5, where 1 means "no" and 5 means "yes"" (Table 2).

The authors counted up replies "1 (no)" and "2 (rather no)" and then replies "4 (rather yes)" and "5 (yes)". An analysis of the survey data (Table 2) – the first four criteria (No. 1, 2, 3, and 4) – gave insight into the pupils' **ratings of their critical thinking abilities**. Of them, 65 % admitted they could critically assess information and find the most important facts, while 28 % had a neutral opinion (don't know), and only 7 % admitted they had no skill to critically assess information and to find the most important facts in it. The average rating by the pupils was 4 (Me=4, Mo=5), which indicated the pupils were able to assess information and find the most important facts in it.

Sixty-six percent of the respondents admitted they could critically assess their performance, while 19 % had a neutral opinion (don't know), and only 15 % admitted they could not critically assess their

performance. The average rating by the pupils was 4 (Me=4, Mo=5), which was a high overall rating that allowed concluding the pupils were competent to rate themselves.

Sixty-eight percent of the respondents admitted they verified the results after finishing an important job, while 15 % had a neutral opinion (don't know), and 17 % admitted they did not verify their work results when completing an important task. The average rating by the pupils was 4 (Me=5, Mo=4), which indicated the pupils did not check their work results to analyse their mistakes made.

Table 2

**Pupil self-ratings of their thinking skills according to the criteria developed by the authors (%)**

Kind of thinking	No	Criteria	Replies				
			1	2	3	4	5
			(no)	(rather no)	(don't know)	(rather yes)	(yes)
Critical thinking	1	Can you critically assess information –to find the most important facts?	2	5	28	30	35
	2	Can you critically assess your performance?	6	9	19	22	44
	3	After finishing an important job, do you verify the results?	11	6	15	22	46
	4	Can you justify the strengths and weaknesses of your work?	6	7	19	37	31
Logical thinking	5	Is it easy for you to set a goal?	13	12	20	31	24
	6	Is it easy for you to handle complicated situations?	9	11	33	30	17
	7	Is it easy for you to define a problem?	13	20	26	31	9
	8	When acquiring a new knowledge, do you seek for its similarities with the knowledge you have?	13	20	26	31	9
Creative thinking	9	Is it easy for you to create new, original ideas?	11	7	30	19	33
	10	Can you realise and enhance your ideas?	6	13	26	29	26
	11	Do you seek for creative solutions to your problems?	11	9	33	22	24
	12	Is it easy for you to accept the new and the unclear ideas?	7	7	26	30	30

Sixty-eight percent of the respondents could justify the strengths and weaknesses of their job, while 19 % had a neutral opinion (don't know), and 13 % admitted they could not justify the strengths and weaknesses of their work. The pupils rated themselves on average at 4 (Me=4, Mo=4), which allowed concluding the pupils were able to justify the strengths and weaknesses of their work done.

The analysis of the data on the first four criteria revealed that the pupils rated their critical thinking abilities on average at Me=4, which was a high overall rating that proved the pupils had critical thinking abilities. The chi-square ( $\chi^2$ ) calculations revealed that the pupils' school year and gender did not make any influence on the results, but the observations showed that male pupils rated their critical thinking abilities lower than female pupils did.

The next criteria (No. 5, 6, 7 and 8) were designed with the purpose of identifying **whether the pupils had logical thinking abilities**. One could find that 55 % successfully set new goals for themselves, while 20 % had a neutral opinion (don't know); 25 % admitted they could not set a goal for themselves. The average rating by the pupils was 4 (Me=4, Mo=4), which indicated they, in general, had an ability to set new goals for themselves.

Only 47 % of the respondents admitted they were competent to handle complicated situations, while a large proportion, 33 %, had no opinion (don't know) about their ability to cope with complicated



situations; 20 % admitted they had no skill in handling complicated situations. The average rating by the pupils was 3 (Me=3, Mo=3), which was a neutral overall rating; it indicated the lack of abilities regarding handling complicated situations.

Forty percent of the respondents could define various problems, while 26 % had a neutral opinion (don't know), however, 33 % admitted they were not able to define a problem. The average rating by the pupils was 3 (Me=3, Mo=4), which indicated their ability to define problems was low because the difference in the numbers of replies "yes" (40 %) and "no" (33 %) was small.

Thirty-three percent of the respondents believed they did not seek for similarities between a new knowledge and the knowledge they had; 26 % gave neutral replies, while 40 % admitted they sought for similarities in knowledge. The average rating by the pupils was 4 (Me=4, Mo=4), which indicated the respondents sought for similarities between a new knowledge and the knowledge they already possessed.

An analysis of the pupils' self-ratings of the four criteria (No. 5, 6, 7 and 8) revealed that they rated themselves on average at Me=3/4, which could indicate their insufficient logical thinking skills, although logical thinking in particular is the kind of thinking that is classically developed at schools. Memorising mechanically and the development of thinking operations are the basic elements of logical thinking.

The chi-square ( $\chi^2$ ) calculations rejected an assumption that the pupils' gender or school year could influence the validity of results. However, it has to be mentioned that compared with male pupils, female pupils tended to rate themselves higher when giving replies to some of the above-mentioned questions.

The last four criteria (No. 9, 10, 11 and 12) were developed to establish **whether the pupils had creative thinking abilities**. Fifty-two percent of them admitted they could create new and original ideas, 30 % had a neutral opinion (don't know), while 18 % admitted they could not create anything new and original. The average rating by the pupils was 4 (Me=4, Mo=5), which indicated the pupils were quite talented in creativity and innovation.

Fifty-five percent of the respondents admitted they were able to realise and enhance their ideas, 26 % had a neutral opinion (don't know), while 19 % admitted they were not able to realise and enhance their ideas. The average rating by the pupils was 4 (Me=4, Mo=5), which indicated the pupils had quite high abilities to realise and enhance their own ideas.

Forty-six percent of the respondents could solve their problems in various ways, 33 % had a neutral opinion (don't know), while 20 % admitted they were not able to find solutions to their problems. The average rating by the pupils was 3 (Me=3, Mo=3), which indicated the pupils lacked an ability to be aware of how to seek for various solutions to problems or they were not convinced of their abilities.

Sixty percent of the respondents admitted they were open to the new and the unknown, 26 % had a neutral opinion (don't know), while 14 % revealed they had a problem to accept anything new and unclear. The average rating by the pupils was 4 (Me=4, Mo=4.5), which indicated the pupils had a high ability to accept anything new and unclear for themselves. The  $\chi^2$  calculations revealed that the replies given to this question were influenced both by the pupils' school year ( $\chi^2=1.50 < \chi^2_{0.05;4}=9.49$ ) and by their gender ( $\chi^2=0.61 < \chi^2_{0.05;4}=9.49$ ).

The analysis of the respondents' replies regarding the last four criteria (No. 9, 10, 11 and 12) for creative thinking allowed concluding that the pupils had very good creative thinking abilities. The average rating by the pupils was 4 (Me=4), which was a high rating among the pupils. Of all the kinds of thinking examined in the empirical study, creative thinking in the pupils surveyed in the lessons of *Home Economics and Technology* was developed the best. In this case too, if performing a Chi-square ( $\chi^2$ ) test, one can reject an assumption that creative thinking depends on gender or school year.

## Conclusions

- Thinking may be characterised as an individual process taking place in the human mind, which focuses on solving problems and finding associations among objects and phenomena. The key task of thinking involves finding solutions to problems and making decisions. The process of thinking develops and improves in line with the development of an individual; therefore, it is possible to

develop one's thinking persistently throughout the entire lifetime. It is of great importance to develop such kinds of thinking as creative, critical and logical thinking to study the subject of *Home Economics and Technologies*. Creative thinking allows viewing a problem from a new perspective, finding creative solutions to problems and making mistakes. However, critical thinking allows critically assessing a problem and solutions to the problem; it is a kind of thinking that focuses on comprehending the nature of the issues. Logical thinking is a process based on comprehending a problem and solving the problem in a sequential and logical way.

- Pupils of school grade 5 and 6 are in a period of transition towards puberty; at this age, they actively seek for their position in the world and wish to build up various skills and abilities. At this age, the key changes in terms of cognitive development are associated with the formation of stable thinking in them; their thinking becomes flexible and logical, while in general their thinking is based on their memory for what they learnt during the previous age periods.
- The data acquired in the empirical study on the thinking of pupils and its specifics showed that the pupils had well-developed thinking skills and they had a behaviour of a thinking individual. According to the pupils' self-evaluation, critical thinking of the pupils was developed the best, their creative thinking was quite well-developed, while their logical thinking gets the least in the lessons of Home Economics and Technologies. By the authors opinion the creative thinking is most essential for doing practical creative works in lessons of Home Economics and Technologies.
- The authors stress the necessity to develop thinking of pupils in their research because teachers often forget that it is not enough for pupils to learn some concrete theme what is needed; but also the methodology of teaching has to be multifaceted, creative assignments have to be given to the pupils, so that they can develop comprehensively at school. The promotion of pupils' thinking is one of the most important tasks of the study process that develops new thinkers, then the action is followed after the idea, which is significant for training in *Home Economics and Technologies*.

## Bibliography

1. Bebre R. (2013). Kreativitātes kognitīvie aspekti (Cognitive Aspects of Creativity). Grāmatā: R. Bebre (Red.). *Kreativitātes psiholoģija*. Rīga: RPIVA, 146. – 177. lpp. [online] [21.11.2016]. Available at [https://docs.google.com/viewerng/viewer?url=http://pedagogubiblioteka.rpiva.lv/wp-content/uploads/2013/03/R.Bebre-KreativitatesPsihologija-V\\_nodala-146-177lpp.pdf](https://docs.google.com/viewerng/viewer?url=http://pedagogubiblioteka.rpiva.lv/wp-content/uploads/2013/03/R.Bebre-KreativitatesPsihologija-V_nodala-146-177lpp.pdf) (in Latvian)
2. Bradford A. (2015). *Deductive Reasoning vs. Inductive Reasoning*. [online] [21.11.2016]. Available at <http://www.livescience.com/21569-deduction-vs-induction.html>
3. Burceva R., Davidova J., Kalniņa D., Lanka Ē., Mackēviča L. (2010). *Novitātes pedagoģijā profesionālās izglītības skolotājiem (Innovations in teaching vocational teachers)*. Rīga: LU. [online] [21.11.2016]. Available at <http://profizgl.lu.lv/mod/book/tool/print/index.php?id=12113#ch3707> (in Latvian)
4. Coughlan A. (2008). *Creative thinking and critical thinking*. Dublin: Dublin City University, 11 p. [online] [21.11.2016]. Available at <https://www4.dcu.ie/sites/default/files/students/studentlearning/creativeandcritical.pdf>
5. *Creative thinking*. (2016). [online] [21.11.2016]. Available at <http://www.businessdictionary.com/definition/creative-thinking.html>
6. Fišers R. (2005). *Mācīsim bērniem domāt (Let us teach children to think)*. Rīga: RaKa. (in Latvian)
7. Projekta „Jelgavas skolotāju profesionālās kompetences pilnveide tehnoloģiju un zinātņu jomā” aktivitātes (Activities of the Project "Development of Jelgava Teachers' Professional Competences in the field of Technology and Science"). (2013). Jelgava: ZRKAC. [online] [21.11.2016]. Available at <http://www.zrkac.lv/event.php?id=140> (in Latvian)
8. *Kritiskās domāšanas pamati (Foundation for Critical Thinking)*. (2012). Mācību līdzeklis vidusskolēniem un metodiskie komentāri skolotājam. Rīga, 4. – 7. lpp. (in Latvian)
9. Lai E.R. (2011). *Critical thinking: A Literature Review*. Research Report. [online] [21.11.2016]. Available at <http://images.pearsonassessments.com/images/tmrs/CriticalThinkingReviewFINAL.pdf>
10. Liepiņa S. (2003). *Speciālā psiholoģija (Special Psychology)*. Rīga: RaKa, 154. – 177. lpp. (in Latvian)

11. *Loģiskā domāšana (Logical Thinking)*. (2015). [online] [21.11.2016]. Available at [http://lv.swewe.net/word\\_show.htm/?443733\\_1&lo% c4% a3isk% c4% 81\\_dom% c4% 81% c5% a1ana](http://lv.swewe.net/word_show.htm/?443733_1&lo% c4% a3isk% c4% 81_dom% c4% 81% c5% a1ana) (in Latvian)
12. Milková E., Hůlková A. (2013). *Algorithmic and Logical Thinking Development: base of programming skills*. Hradec Králov: University of Hradec Králové. E-ISSN: 2224-2873. [online] [21.11.2016]. Available at <http://www.wseas.org/multimedia/journals/computers/2013/5705-105.pdf>
13. Myers D.G. (2000). *Psychology* (6<sup>th</sup> ed.). NY, Hope Collage Holland Michigan: Worth Publishers, pp. 124 – 130.
14. Paul R., Elder L. (2006). *The Miniature Guide to Critical Thinking. Concepts and Tools* (4<sup>th</sup> ed.). [online] [21.11.2016]. Available at [https://www.criticalthinking.org/files/Concepts\\_Tools.pdf](https://www.criticalthinking.org/files/Concepts_Tools.pdf)
15. Svence G. (1999). *Attīstības psiholoģija (Developmental Psychology)*. Rīga: Zvaigzne ABC, 101 – 135. lpp. (in Latvian)
16. Šteinberga A. (2013). *Pedagoģiskā psiholoģija (Educational Psychology)*. Rīga: RaKa, 103. – 108. lpp. (in Latvian)
17. Tomsons V. (2009). *Pedagoģisko pētījumu metodoloģija. Pētījuma pamatjautājumi (Methodology of Pedagogical Research. Basic Questions of Study)*. Mācību līdzeklis - 1. Jelgava: LLU. (in Latvian)
18. Trochim W.M.K. (2006). *Deduction & Induction*. [online] [21.11.2016]. Available at <http://www.socialresearchmethods.net/kb/dedind.php>
19. Veidnis I. (2011). *Mācīšanās māksla (Learning Art)*. Rīga: Avots, 102. – 111. lpp. (in Latvian)
20. Žukovskis Z. (2015). *Studentu sonorās domāšanas attīstība ģitārspēles studiju procesā. (Development of Student' Sonora thinking in the Guitar Study Process)*. Promocijas darbs (Doctoral Thesis). Rīga: LU, 17. – 19. lpp. (in Latvian)
21. Ивин А.А. (1998). *Логика (Logics)*. Москва: Знание. (in Russian)
22. *Логическое мышление - развитие логики (Logical thinking – Development of Logic)*. (2016). [online] [21.11.2016]. Available at <http://4b.rain.ru/logika/>

## The Study on Competence - Based Curriculum Implementation in the Subject Home Economics and Technologies

Aija Pridāne Dr. paed.

Latvia University of Agriculture, Latvia

[aija\\_pridane@inbox.lv](mailto:aija_pridane@inbox.lv)

**Abstract:** In recent years, reforms which are related to the notions “competences” and “the learning outcome” in curricula are implemented in many countries. Starting with the year 2018, the implementation of Competence-based Curriculum has to be started also in Latvia. The new model of education aims at developing students’ competences which means - knowledge, understanding, skills, abilities and attitudes. This means that the role and tasks of teachers are also changing. Teachers will have to think not only about teaching, but also about the competences their students develop. Aim of the article: to evaluate and analyse which key competences, defined by European Council, can be develop in the curriculum of the subject Home Economics and Technologies. On the base of the acquired knowledge in the theoretical studies the content of the subject Home Economics and Technologies and the methodology used was assessed. Research base was Jelgava Secondary School No 4. 25 students from form 9 were involved in the study. They learned according to the author’s Home Economics and Technologies curriculum. The study was carried out using the Likert scale. The results confirmed then the most developed competences are: technology and digital competences and social, cultural awareness and creativity expression competences. Mathematical and natural science key competences are partially developed.

**Key words:** core skills, competences, subject Home Economics and Technologies, school education.

### Introduction

Nowadays the development of a personality is taking place in unexpected, rapidly changeable situations that are hard to predict (Huitt, 1997). The goal of education is to prepare students for real life and successful carea in future. They need not only to acquire the knowledge and skills but also to develop the ability to use their knowledge efectively and responsibly, to develop the determination to continue their lifelong education. That is why during the recent years, reforms have been carried out in curricula in connection with the notions “key competences” and “the learning outcome”.

Competence is the base of the action carried out by a human being in the world into a specific branch, solving the problems in changeable and real life situations. It is the ability to use the learning outcomes adequately in a certain real life context in a certain action (Pedagoģijas terminu..., 2000, 83). In difference to ability or skill, competence is more complex. It includes knowledge, skills, abilities, and also attitudes. Until this, the above mentioned elements were also included into educational standards, but they missed an appropriate common link.

Within the reform, a complex curriculum structure is being built where the focus on the subject content is being partially replaced with practical skills and cross-curricular approach. However, the practical introduction of the reformed or improved educational curriculum is only at a very early stage.

In 2006, European Council and Parliament defined the core skills of a lifelong learning – competences that are necessary to EU citizens for their personal growth and development, social involmt, public activity and employment (Hozjan, 2009; Eiropas Komisija..., 2012). They are as follows: ability to communicate fluently and without an effort in the native and in a foreign language as well; mathematical ability; key skills in Science and Technologies, cultural intelligence and creative abilities.

In the result of education reform, young people would have been given the opportunity to work in decent jobs, in order to maintain themselves and their families as well as to contribute to the country's development and personal life by developing the key competences (Mūžizglītības galvenās..., 2007).

European countries have already made a significant progress in implementing reforms, developing guidelines and including them in the curricula documents and the syllabus (Eiropas Komisija..., 2012; Pamatkompetenču pilnveide..., 2012).

Also the Latvia Ministry of Education is initiating an ambitious project that is based on implementation of competence-based education this year. The framework of competences is built through the European Union recommendations "Key Competences for Lifelong Learning" (Key Competences..., 2006). The project is also based on Strategy Papers of Latvia (Sustainable Development..., 2010; National Development..., 2012), in which it is recognized that one's own personal competitiveness in the labor market and the country's overall long-term growth can only be provided by investing in his/her own and his/her children's education purposefully and wisely.

Education reforms are aimed at arising students' interest for knowledge and lifelong learning. These reforms should follow in the curriculum - what and how has to be taught, as well as in learning and teaching approach, and in learning and teaching evaluation.

Also the environment has got an important role in which the learner is settled, therefor in the process of learning where the student can realise him- or herself as a personality, to learn key values of life (Амонашвили, 2001), to provide free and creative activity, to learn how to use all the opportunities of the real life flexibly (Geidžs, Berliners, 1999; Krastiņa, Pipere, 2004).

In the center of students' learning there is the development of their competences; exchanges in students - teacher relationship and virtualisation of learning environment; use of the everyday experience in the process of learning; exchanges in overall organisation of school work; cooperative pedagogy; involving, safe and motivating learning environment (Eiropas Pamatprincipu..., 2007).

This means that the teacher's tasks in preparing for lessons are also going to be altered by thinking not only about what has to be taught, but also which competence of students has to be developed.

In the result of these improvements, students have to be able to use their knowledge in different life situations, to adjust to them. The new skills should be acquired by moving from fragmented knowledge in a specific discipline to understanding of things and phenomena in interconnection, from the information to competences (Jauna, kompetencēs..., 2015).

Implementing competence approach, the subject system will remain strengthening cooperation among teachers at the school level while planning teaching and implementation. The curriculum will be divided into six key and six cross-cutting competences. The key competences are already being implemented at the present moment as school subjects: language competence; public relation and citizenship; cultural intelligence and art competence; mathematical and IT competence; science and engineering; health and physical activity competence.

The project is being realised by the State Education Curriculum. For realisation of it, financial grants from EU foundations will be provided. Cooperative partners are taking part in the project: local governments of cities and regions of the Republic. More than 17003 teachers from 80 Latvian educational institutions are going to be involved in the approbation of the curriculum. Now planned education reform affects all school subjects, also Home Economics and Technologies. Simultaneously with the new settings – for determination of goals and objectives in order to implement the educational reform, the current situation should be evaluated critically – the plusses both in the curriculum and in the methodology.

Nowadays Home Economics and Technologies is a complex, intradisciplinary school subject that is tended to the future and multitude of branches of action (economics, public relation and culture) (Piorkowsky, 2003; Richarz, 2003; Von Schweitzer, 2006; Thiele-Witting, 2003). Understanding (knowledge and skills) the meaning and forms of organisation of home economics is the base of human action, quality of life and satisfaction of her/his life (Pridāne, 2009).

In the documents that explain the meaning of the education reform it is stated that the emphasis in the competence based curriculum will be put on students who are using the knowledge, learned in class, in different life situations: both in the learning situation of other subjects and in the real life. The above mentioned claim is not new. It is one of the key rules of the subject Home Economics and Technologies. However, in the real life situations students encounter some difficulty in attributing their knowledge to the contents of other subjects.

In the education of Home Economics, there is a regular necessity to check and use the knowledge and skills acquired at other subjects in real life. It is the only subject in elementary education where at least

75 % of the course time is devoted to learning the necessary skills for students' everyday life. The curriculum is aimed at building the understanding about one's own quality of life, environment, opportunities in providing healthy diet and lifestyle, responsible and effective use of resources and acquiring practical experience in handicraft, cooking and other technologies (Noteikumi par valsts..., 2014; Pridāne, 2009).

Besides that the subject Home Economics and Technologies as a part of the Standard of Elementary Education is included in the branch of "Personality and Society" the goal of which is to arise the student's independence and responsibility to him-/herself, his/her family, other people and his/her nation. The development of a personality and social responsibility, interaction with nature, social and culture environment of an individual is promoted. Also the understanding about the meaning of crafts in a wider social and cultural context is being built through emphasizing the historical and traditional aspects. In the lessons of Home Economics and Technologies students learn to respect everyday life norms and values, to act as responsible consumers (Pridāne, 2009).

Issues of modern curriculum and methodology were actualized also in the project "Further Education of General Education Teachers", realised by Latvia Ministry of Education State Examination Centre. It included also preparation of teachers' further education programme "Improvement of Home Economics and Technologies, House Keeping Teachers' Professional Competences". Handouts to teachers were worked out and aprobated, methodology for providing innovative and creative process of learning by using IT and modern handicraft technologies were offered to the teachers. (Pridāne, 2012).

Exploration of the curriculum in depth was conducted from the year 2000 to 2009 in author's doctoral thesis (Pridāne, 2009).

The existing curriculum was analyzed and suggestions for modern education curriculum and methodology that are appropriate to the needs of students, were prepared. Students should be motivated to recognise and to analyze their needs and the hierarchy of them, to choose subjectively and socially acceptable ways of satisfying their needs. M. Thiele-Witting (2003) observes the needs of satisfying existence and sustaining of a personality.

Criteria and indicators of life quality include the social life and culture aspects of a personality as well as the higher mental values which simultaneously are the promoters of the development of a personality. In the result, the student is able to build a specific strategy of reaching his/her goals of life. It manifested in a student's capacity-adequate, purposeful activities, where students use their full potential and given possibilities (Pridāne, 2009; Mūžizglītības galvenās..., 2007). It is therefore necessary to develop competences.

The aim of the research is to evaluate and analyze which key competences, defined by European Council, can be develop in the curriculum of the subject Home Economics and Technologies.

## Methodology

The study was performed in two directions.

At first in order to implement the principle of the quality of life, thesis was prepared and approved at the author's programme. The implementation of it takes place by using multiple methods and giving the possibility to students to develop several core competences which are defined by European Council.

On the base of the acquired knowledge in the theoretical studies the used content of the subject Home Economics and Technologies and the methodology was assessed.

Key competencies characteristics defined by European Parliament are given in the Table 1. (knowledge, skills, attitudes) (Mūžizglītības galvenās..., 2007) and examples, how they are developed in Home Economics and Technologies lessons.

By author' opinion the most developed key competences are: social competences, IT and other technology competences, but less used are: business, mathematical and science competences in education of Home Economics.

Table 1

**Key Competences to be Developed and Examples of their Implementation in the School Subject  
“Home Economics and Technologies” (Eiropas pamatprincipu..., 2007)**

<b>Key competences</b>	<b>Knowledge</b>	<b>Skills</b>	<b>Attitudes</b>	<b>Examples of development of the competences in Home Economics and Technologies lessons</b>
Communication in foreign languages	Social knowledge, cultural aspects, knowledge about the use of language.	Ability to understand the text, communicate, read, understand, build texts according to the individual's needs. Ability to use the necessary additional materials.	Interest and curiosity in languages and intercultural communication.	Information extraction and selection for working out project works on topics: food, housing, clothing. Handicraft technology acquisition through Internet programs Youtube and other videos.
Mathematical competence	Knowledge of the units of measurement and shape. Understanding of the basic tasks, terms and the concept of their use in Mathematics. Understanding of the questions to which answers can be offered in Mathematics.	Ability to apply mathematical principles and techniques in calculating both in real life and work. The ability to substantiate mathematically, provide evidence.	A positive attitude towards mathematics-based truths. The desire to look for reasons and to assess their validity.	Dress patterns design. Nutritional norms, product costs, housing costs, the quantity of materials and other calculations. Housing plan drawing, scale fixation.
Core competencies in science and technologies	Knowledge of the basic principles of the natural world, technological products and processes, their impact on the world. Risk awareness in society at large (in relation to decision-making, values, moral cultural issues)	The ability to use and manage technology tools and devices that use scientific data to prove or achieve objectives and to draw evidence-based conclusions, to be able to discuss, justify conclusions.	Respect for security and sustainable development in the context of scientific and technological progress. Curiosity, critical attitude towards personal life, family, community and global issues. Respecting and observing of ethical norms.	Impact of household activities on the environment, household waste. Effective and wise use of residential resources.  Use of household chemicals and electrical devices.  Devices in learning handicraft technologies.
Digital competence	The use of the main computer programmes. Knowledge about the information storage and	The ability to search for, to collect, process and to apply the information critically and systematically. To evaluate the role	Respect for security and sustainable development in the context of scientific and	Use of “Excel” for technical patterns, diagrams, mathematical calculations. Use of computer programmes “PowerPoint”, “Prezi”



Key competences	Knowledge	Skills	Attitudes	Examples of development of the competences in Home Economics and Technologies lessons
	<p>management. Understanding of Internet opportunities and potential risks of the information available, the validity and veracity of it, legal and ethical principles.</p> <p>Understanding how IST can support creativity and innovation.</p>	<p>of information, to distinguish the real from the virtual and be aware of the links. Ability to use tools to create, present and understand complex information access, search and apply online services. Ability to use ICT tools for critical thinking, creativity and innovation.</p>	<p>technological progress. Curiosity, critical attitude towards personal life, family, community and global issues. Respecting and observing of ethical norms.</p>	<p>for making presentations. “Smart Draw” and similar programs for drawing housing plans. Use of different programmes for obtaining information.</p>
Social competences	<p>Understanding the social and personal well-being, optimal physical and mental health provision, including own resources and their own family and their direct social environment.</p> <p>Knowledge of a healthy lifestyle and its promotion.</p> <p>Understanding the behavior and generally accepted code of behavior in different societies and environments.</p> <p>Understanding of individuals, groups, work organizations, gender equality.</p>	<p>The ability to communicate constructively in different environments, to be tolerant, express and understand different viewpoints, to feel empathy. Skills to cope with stress and frustration, to distinguish between personal and professional spheres.</p>	<p>Critical, weighed attitude towards the available information. Responsible use of the interactive media. Interest in contributing to communities and networks for cultural, social and / or professional purposes.</p>	<p>Healthy diet and lifestyle. Organization of work and security in the dwelling.</p> <p>Personal image development (clothing and behavior rules).</p> <p>Table cultural issues.</p> <p>Household disposable financial and other resources, the prudent and efficient use.</p> <p>Healthy diet, lifestyle. Organization and security in the dwelling.</p> <p>Personal image development (clothing and behavior rules).</p> <p>Table culture issues.</p> <p>Household financial and other resources, reasonable and efficient use of them.</p>
Sense of initiative and entrepreneurship	<p>Awareness of students' own personal, professional and / or business activity opportunities.</p> <p>Understanding the economy and fair trade principles.</p>	<p>Ability to plan, organize, delegate, analyze, communicate, manage, take up the leadership. The ability to obtain and evaluate information. Ability to work both individually and in a team. The ability to judge and identify students' own strengths and</p>	<p>Initiative, activity, independence and innovation in personal and community life activities. Motivation and determination to achieve goals (personal,</p>	<p>Learning handicraft, cooking technology as a resource for the individual business.</p> <p>Home economics profession to be acquired in the context of diversity (career opportunities).</p> <p>Consumer education issues, shopping.</p>

Key competences	Knowledge	Skills	Attitudes	Examples of development of the competences in Home Economics and Technologies lessons
		weaknesses, assess and take risks when necessary.	collective, work).	
Cultural awareness and expression	<p>Understanding the importance of local, national and European cultural heritage, their place in the world, the necessity to keep it.</p> <p>Understanding the importance of aesthetic factors in daily life.</p> <p>Understanding European public, multi-cultural and socio-economic dimensions of the national cultural identity and interaction.</p>	<p>Individual's innate capacities,</p> <p>Self - expression and evaluation. The ability to relate one's own creative and expressive points of views to the opinions of others, to identify and realize social and economic opportunities in cultural activity. The ability to develop creative skills for application of them in individual and professional context.</p>	<p>Students' own cultural awareness and sense of identity. Respect for the diversity of cultural expressions. Participation in cultural life.</p> <p>Creativity and willingness to cultivate aesthetic capacity. Awareness of the meaning of artistic expression.</p>	<p>Handicraft technology acquisition and use (from the idea to the realization of the object, the manufactured product quality evaluation).</p> <p>Housing interior.</p> <p>Positive personal image creation capabilities and role in society.</p> <p>Latvians and other nations', living in Latvia traditions, national meals - common and different.</p> <p>Positive personal image creation capabilities and role in society.</p> <p>Latvians and other nations' living in Latvia, traditions, national meals - common and different.</p>

In the second part of the study was organized a survey. 25 girls who were the 9th form students at Jelgava Secondary School N 4 and had acquired the content of the Home Economics and Technologies syllabus were involved in the research using the programme elaborated by the author of this article.

As the most appropriate to this study one of the most widely used discrete scales- Likert scale was selected (Kristapsone, 2014, 213). It is easy to be prepared and well understood by students. The level of the above mentioned competence development was tested with the help of questionnaires. It contained 19 questions. The students were supposed to evaluate them on the 5 point scale (1 point -strongly disagree, 2 point- disagree, 3 point- partly agree, 4 point- agree, 5 point - completely agree).

The research data were used for processing the central trend indicators: median (Me) - The average result row of numbers in which all sets of elements arranged in ascending order and mode (Mo) - the most common sets of element value (Raševska, Kristapsone, 2000, 67). In order to obtain as precise information on the set mode it has to be studied simultaneously with the arithmetic mean and the median.

## Results and discussion

Table 2 shows the results of the survey. The results confirmed (Table 2) that in Home Economics education the key competences are the most developed now:

- 1) technology and digital competences: different sources of information have to be used in the learning tasks (Question 4), a variety of handicraft technology competences (Question 9) (Me-4, Mo- 4);

- 2) social and cultural awareness and expression competences: learning content related to real life (Question 1), knowledge and skills acquired in other subjects are used in lessons, schoolgirls know where they will be able to use the acquired knowledge and skills in lessons after graduation, teaching the content of the notion of Latvian folk culture, traditions; different handicraft technology skills are acquired (Question 9) (Me-4, Mo-4).

Table 2

**Indicators of the Central Trend of the Student Girls' Survey Results (Me, Mo)**

N	Question	Me Median Me	Mode Mo
1.	Curriculum is related to my real life.	4	4
2.	I use the acquired knowledge and skills in my everyday life and at home.	3	3
3.	I use the knowledge and skills acquired in other subjects (Computer Science, Foreign Languages, Maths, History, Visual Art) during the lessons.	3	4
4.	For completing the course tasks I have to use different sources of information (online resources, books, magazines).	4	4
5.	For completing the course tasks I have to use foreign languages.	2	1
6.	For completing the course tasks I have to use IT.	3	3
7.	Course tasks make me solve different problems that are related to the real life situations.	3	3
8.	Course curriculum forms my understanding of Latvian culture and traditions.	4	4
9.	In the lessons I can try different techniques of handicraft technologies.	4	5
10.	I use the learned handicraft techniques also at my free time. This gives me the opportunity to express myself creatively.	2	2
11.	The curriculum makes me to cooperate with my classmates in solving learning tasks.	3	2 and 3
12.	Learning tasks make me to search the information independently and do projects.	3	3
13.	The learning tasks seem to be interesting and useful.	3	3
14.	I know where I can use the knowledge and skills acquired after finishing the school.	3	4
15.	Curriculum has aroused my interest to my further profession.	1	1
16.	Curriculum builds my understanding of healthy lifestyle.	3	3
17.	Curriculum makes my understanding of my home environment improvement.	3	3
18.	I share the acquired knowledge and skills in lessons with my family members.	2	2
19.	Curriculum taught me how to save material, financial and other resources.	3	2

Replies with the central trend indicator (Me-3, Mo-3) points, that is partly developed in the basic skills in mathematics and science (2, 3, 6, 7., 12, 13, 16, 17th issue).

Unfortunately, girls do not see that the home economics education knowledge and skills could be used in their professional career (Question 15). They also recognize that foreign languages are not applied in learning tasks-(Question 5). 9. Although it was recognized that different handicraft technologies can be learned in lessons, they are not used at free time activities as a way of creative self-expression outside the classroom.

**Conclusion**

Education reform is aimed at encouraging students' interest in knowledge and lifelong learning. The changes will affect the educational content, the school environment, teaching approach and evaluation. It will also change the teacher's role in the context of competence development.

The key competences are already being implemented as study subjects in Latvia: language competence; socio-civic; cultural awareness, artistic; mathematics and computer science; science and engineering; health and physical activities.

Learning content developed in the competence approach will focus on ensuring that the knowledge learned by students in class, can be used in different situations: both in learning situations and in other subjects, as well as in real life. This setting is one of the main conditions for Home Economics education, where the learning content is aimed at building students' own quality of life awareness, as well as in gaining practical experience in handicraft, cooking and other technologies.

The study analyzed which key competences defined by European Council of are expanding in the context acquisition the content of subject Home Economics and Technologies.

The results confirmed then:

- 1) the most developed competences are:
  - technology and digital competences;
  - social, cultural awareness and creativity expression competences;
- 2) mathematical and natural science key competences are partially developed.

## Bibliography

1. *Eiropas Komisija / EACEA / Eurydice*. (2012). Galveno kompetenču pilnveide Eiropas skolās: rīcībpolitikas uzdevumi un iespējas (Improvement of Core Competencies in the European Schools: Policy Challenges and Opportunities). Eurydice ziņojums. Luksemburga: Eiropas Savienības Publikāciju birojs. [online] [10.11.16]. Available at [http://eacea.ec.europa.eu/education/Eurydice/documents/thematic\\_reports/145LV.pdf](http://eacea.ec.europa.eu/education/Eurydice/documents/thematic_reports/145LV.pdf) (in Latvian)
2. *Eiropas Pamatprincipu Kopums. Pamatprasmes mūžizglītībai (The Framework of European Basic Principles. Key Competences for Lifelong Learning)*. (2007). Luksemburga: Eiropas Kopienų Oficiālo publikāciju birojs (in Latvian)
3. Geidžs L.N., Berliners D.C. (1999). *Pedagoģiskā psiholoģija (Educational Psychology)*. Rīga: Zvaigzne ABC. (in Latvian)
4. Hozjan D. (2009). Key Cmpetences for the Development of Lifelong Learning in the European Union. *European Journal of Vocational Training*, Vol. 46(1), pp. 196 – 207. [online] [11.12.16]. Available at <http://files.eric.ed.gov/fulltext/EJ864796.pdf>
5. Huitt W.G. (1997). The SCANS Report Revisited. Paper Delivered at the Fifth Annual Gulf South Business and Vocational Education Conference. Georgia: Valdosta State University.
6. *Jauna, kompetencēs balstīta vispārējās izglītības satura ieviešanai būs pieejams ES fondu finansējums (A New, Competence-Based General Education Content will be Available for the Implementation of EU Funds Financing)*. (2015). Rīga: IZM. [online] [10.10.16]. Available at <http://www.izm.gov.lv/lv/aktualitates/1445-jauna-kompetences-balstita-visparejas-izglitiba-satura-ieviesanai-bus-pieejams-es-fondu-finansejums> ( in Latvian)
7. Key Competences for Lifelong Learning: A European Reference Framework. (2006). Recommendation of the European Parliament and of the Council of 18 December 2006. *Official Journal of the European Union*, Vol. 394(10). [online] [06.11.2016]. Available at <http://enil.ceris.cnr.it/Basili/EnIL/gateway/europe/EUkeycompetences.htm>
8. Krastiņa E., Pipere A. (2004). *Skolēnu mācību sasniegumu pašizvērtēšana sākumskolā (Pupils' Self-Evaluation in Primary School)*. Rīga: Raka. (in Latvian)
9. Kristapsone S. (2014). *Zinātniskā pētniecība studiju procesā (Scientific Research in the Study Process)*. (2nd ed.). Rīga: Biznesa augstskola Turība. [online] [10.12.16]. Available at <http://www.turiba.lv/f/Izdevnieciba/ZPSP-saturs-ievads-internetam.pdf> (in Latvian)
10. *National Development Plan of Latvia for 2014 - 2020*. (2012). Rīga: Ministry of Environmental Protection and Regional Development. [online] [11.12.16]. Available at [http://www.varam.gov.lv/lat/pol/ppd/ilgtsp\\_att/?doc=13858](http://www.varam.gov.lv/lat/pol/ppd/ilgtsp_att/?doc=13858)
11. *Sustainable Development Strategy of Latvia until 2030* (2010). Rīga: Saeima of the Republic of Latvia. [online] [10.12.16]. Available at <https://biobs.jrc.ec.europa.eu/sites/default/files/generated/files/policy/Latvia%20Agriculture%20-%20Sustainable%20Development%20Strategy%20of.pdf>

12. *Mūžizglītības galvenās pamatprasmes. Eiropas pamatprincipu kopums (Key Competences of Lifelong Learning. The Framework of European Basic Principles)*. (2007). Brussels: European Communities. [online] [10.11.16]. Available at [http://jaunatne.gov.lv/sites/default/files/web/Jaunatne\\_darbiba/Info\\_materiali/Brosuras/2012/kompetences.pdf](http://jaunatne.gov.lv/sites/default/files/web/Jaunatne_darbiba/Info_materiali/Brosuras/2012/kompetences.pdf) (in Latvian)
13. *Noteikumi par valsts pamatizglītības standartu pamatizglītības mācību priekšmetu standartiem un pamatizglītības programmu paraugiem. Mājturība un tehnoloģijas. Mācību priekšmeta standarts 1.- 9.klasei. (Regulations on State Primary Education Standard, Primary Education Study Subject Standards and Samples of Primary Education Programmes Home Economics and Technologies. Study Subject Standard 1 to grade 9)*. (2014). MK noteikumi Nr.468 no 12.08.2014. Rīga: LR MK [online] [11.12.2016]. Available at <https://likumi.lv/doc.php?id=268342> (in Latvian)
14. *Pamatkompetenču pilnveide Eiropas skolās. Rīcībpolitikas izaicinājumi un iespējas (Developing of Key Competences at European Schools: Challenges and Opportunities for Policy)*. (2012). Eurydice. Rīga: Izglītības, audiovizuālās jomas un kultūras izpildaģentūra. [online] [11.12.16]. Available at [http://eacea.ec.europa.eu/education/Eurydice/documents/thematic\\_reports/145LV\\_HI.pdf](http://eacea.ec.europa.eu/education/Eurydice/documents/thematic_reports/145LV_HI.pdf) (in Latvian)
15. *Pedagoģijas terminu skaidrojošā vārdnīca (Glossary of Pedagogical Terms)*. (2000). Rīga: Zvaigzne ABC. (in Latvian)
16. Piorkowsky M.B. (2003). Neue Hauswirtschaft für die postmoderne Gesellschaft. Zum Wandel der Ökonomie des Alltags (New Home Economics for the Postmodern Society. The Change of the Economy of Everyday Life). *Aus Politik und Zeitgeschichte*. Vol. 9, S. 7-1. (in German)
17. Pridāne A. (2009). *Dzīves kvalitātes principa īstenošana mājturības izglītībā pamatskolā (Implementation of the Life Quality Principle in Home Economics Education at Elementary School)*. Promocijas darbs. Jelgava: LLU (in Latvian)
18. Pridāne A. (2012). Innovation in School Subject Home Economics. Proceedings of the International Scientific Conference *Rural Environment. Education. Personality (REEP)*, Vol. 5. Jelgava: Latvia University of Agriculture, pp. 256 – 264. [online] [11.12.16]. Available at <http://alufb.llu.lv/conference/REEP/2012/REEP-2012-proceedings-E-ISSN-2255-808X.pdf>
19. Raščevska M., Kristapsone S. (2000). *Statistika psiholoģijas pētījumos (Statistics in Psychological Studies)*. Rīga: Izglītības soli. (in Latvian)
20. Richarz I. (2003). The Cultural Aspect in Household Education in the Process of European and Globalisation. The International Scientific Conference *Rural Environment. Education. Personality (REEP)*, Vol. 2. Jelgava: Latvia University of Agriculture. pp. 299.
21. Thiele-Witting M. (2003). Kompetent im Alltag Bildung für Haushalt und Familie (Competent in Everyday Life: Education for Household and Family). *Aus Politik und Zeitgeschichte*, Vol. 9. [online] [11.12.16] Available at <http://www.bpb.de/apuz/27769/kompetent-im-alltag-bildung-fuer-haushalt-und-familie?p=all> (in German)
22. Von Schweitzer R. (2006). Home Economics Science and Arts. Managing Sustainable Everyday Life. (1st ed.). Switzerland: Peter Lang AG.
23. Амонашвили Ш. (2001). *Размышление о гуманной педагогике (Reflections on the Humane Pedagogy)*. Москва: Издательский дом Ш. Амонашвили. (in Russian)

## Agent-Based Simulation of the Influence of Customers' Behaviour on the Bank's Failure

Aurimas Cesnulevicius<sup>1</sup> Dr. sc. ing.; Juozas Becelis<sup>2</sup> Mg. sc. ing.; Ojaras Purvinis<sup>3</sup> Dr. math;  
Henrikas Sinickas<sup>4</sup> Mg. sc. comp.

Kaunas University of Technology, Lithuania<sup>1,3</sup>; Panevezys College, Lithuania<sup>2,4</sup>  
[Aurimas.Cesnulevicius@ktu.lt](mailto:Aurimas.Cesnulevicius@ktu.lt)<sup>1</sup>; [Juozas.Becelis@panko.lt](mailto:Juozas.Becelis@panko.lt)<sup>2</sup>; [Ojaras.Purvinis@ktu.lt](mailto:Ojaras.Purvinis@ktu.lt)<sup>3</sup>;  
[Henrikas.Sinickas@panko.lt](mailto:Henrikas.Sinickas@panko.lt)<sup>4</sup>

**Abstract:** In Lithuania like in other states there are different capital credit institutions and banks (from 10 to 20) operating in the country. Even in small towns with the population of nearly 20 000, there are up to five operating banks and credit unions. Nowadays, the success of commercial banks depends upon their image and the opinion of the interested groups of the society about the quality of provided bank services. Being rather high competition among banks, there are cases when there appears rumours about poor economic situation in one or another bank. The key of such canard might be caused by negligence at work, for example, untimely loaded ATMs. The bank has a possibility to observe the amount of money in the ATM, therefore, it can't be empty in normality. However, there are cases, when due to the staff negligence or other reasons, commissions aren't carried out in time, also, crediting official registration takes too long, sometimes, lack of money in the branch of the bank to pay off the money after the term of the deposit expires. Rumour spreads really fast. Disbelieving in canard is the state's rather significant policy in respect of the bank. Unfortunately, people take canard easier. However, in the cases, when it's impossible to get their money back whenever a person wants, it might cause panic and, in spite of the fact, that the bank operates normally, serious problems can appear. The *aim* of the research and the article was to investigate influence of canard on banks customers' behavior and effects of various bank decisions regarding of giving back to depositors their money. The *research methodology* was agent-based modelling of impacts of canard/rumour spreading and bank's decisions. Simulation and its *results* showed that the possibility for bank customers to get back their money suppresses rumours, but limitations intensify the panic. Authors suppose that the *significance* of the model and its results' lies in demonstration of possibility of agent-based models to investigate the banks and its customers' behavior without real-life experiments. The agent-based modeling can be used in university in consumer behavior courses as well.

**Keywords:** agent-based modeling, customer behaviour, banks, failure, university education.

### Introduction

In Lithuania like in other states there are different capital credit institutions and banks (from 10 to 20) operating in the country. Even in small towns with the population of nearly 20 000, there are up to five operating banks and credit unions. In Lithuania or the country where there is a credit institution, usually, there are one or two national banks, others – foreign capital banks, however, stability, trustworthiness and capital sufficiency often depend upon the country's, which owns the credit institution, economic situation. In case of economic recession in the country, the parent bank and also bank branches in other countries fail as well. Risky loans, self-wilfulness and abuse as well as panic of depositors and other factors were the main reasons why the banks in Lithuania collapsed in 1994 – 1996 (Šadžius, 2004). E. Martinaityte, V. Matutis (2012) presented the review about the crisis of banks in different Central European countries.

Nowadays, the success of commercial banks depends upon their image and the opinion of the interested groups of the society about the quality of provided bank services (Druteikiene, Marcinskas, 2000).

Being rather high competition among banks, there are cases when there appears rumours about poor economic situation in one or another bank (Bank customers ..., 2013). The key of such canard might be caused by negligence at work, for example, untimely loaded automated teller machines (ATM). The bank has a possibility to observe the amount of money in the ATM, therefore, it can't be empty in normality. However, there are cases, when due to the staff negligence or other reasons, commissions aren't carried out in time, also, crediting official registration takes too long, sometimes, lack of money in the branch of the bank to pay off the money after the term of the deposit expires. Rumour spreads really fast. Disbelieving in canard is the state's rather significant policy in respect of the bank. Several banks have already gone insolvent in Lithuania but fortunately the depositors got their money back. Therefore, it is natural, that people take canard easier. However, in the cases, when it's impossible to



get their money back whenever a person wants, it might cause panic and, in spite of the fact, that the bank operates normally, it serious problems can appear.

M. Gallegati, G. Gulioni and N. Kichiji (2003) in their article asserted: "The lack of analytical tools able to cope with heterogeneous interacting agents and their aggregate dynamics is one of the goals of future economic research". Z. He and A. Manela (2016) analyzed rumour-based bank run using analytical models.

The agent-based model of canard/rumour spreading using empirical facts has been presented in our article. The application of agent-based model in social research studies is not new. In his paper A. Getchell presented the review of the tools of modern agent-based modelling and, also, their comparison (Getchel, 2008). In their article D. Plikynas and A. Budrionis examined multi agent system application possibilities for social research studies and present the model of hybrid multi agent system, being able to convey dynamic agent interactions in changing environment (Plikynas, Budrionis, 2010). The authors made the conclusion, that the application of computer intelligence and multi agent systems might reduce the cost (price) of social experiments significantly and, also, enable forecasting and optimizing the consequences of social policy decisions. In the article the authors present the heterogenic agent model of a business cycle, where they model the bank performance under the conditions of enterprise bankruptcy.

The aim of the research and of the article is to investigate influence of canard on banks customers' behavior and effects of various bank decisions regarding of giving back to depositors their money.

## Methodology

The research methodology was agent-based modelling of impacts of canard/rumour spreading and bank's decisions. The bank was modelled as single agent. The behavior of the agent was defined with its statechart and transition rules between states. These rules modelled bank decisions about filling frequency of the ATMs'. Similarly, depositors were modelled by another kind of agents. These agents tried to take back their money using ATM. If the bank imposed extra limitations on the money amount or did not increase the initial ATM refill frequency then it saved money for a short time but increased panic of depositors. Depositors exchanged their panic with other people that increased attempts to draw out more money. The main research question was to investigate if the limitations on the amount of money allowed to draw out from ATMs and if not sufficient refill frequency of ATMs can help to reduce the decrease rate of bank's cash.

## Results and discussion

### The agent-based model set-up

Our model is focused on agent-based computer simulation and is devoted to verify the bank's actions when some false information spreads out about the possible bankruptcy. In such a case the depositors' fear might cause the bank irretrievable damage. Therefore, it's essential to choose right actions to dispel the bank clients' panic and return their confidence (He, Manela, 2016). Due to understandable reasons, it's impossible to carry out real-life experiments to choose and verify the action tactics of the bank. Therefore, the agent-based simulation *method* has been chosen. This method enables using the program entities called agents to simulate actions, decisions and interactions of many people, institutions and other kind of objects (Borshchev, 2013).

The key assumptions of the model: in a small town there live 20 thousand people and there are 8 ATMs of the 4 banks there. This is a typical situation in Lithuania. Therefore, one bank with 2 ATMs and 5 thousand depositor activity and crisis-ridden solutions has been modelled under such conditions.

This means, that around 2500 depositors share 1 ATM, that corresponds to the data which are published by the Lithuanian Bank (Bendra banku..., 2016). Usually clients withdraw their money in ATMs. Therefore, it is modelled the money withdrawals only from ATMs.

Supposedly, the quantity of the client's deposit is in the interval from 200 EUR to 9 000 EUR and is modelled by the asymmetric beta distribution, where the maximum point is 1 160 EUR, however, the withdrawal limit is 1 000 EUR per day (Figure1).



The bank cash comprises depositor money and the money of paying off loans, including interest. The initial precondition is, that under normal conditions the ATM is refilled every 30 hours. 12 hours are modelled per day, since people use ATMs more or less half a day, though, ATMs are available the entire twenty-four hours

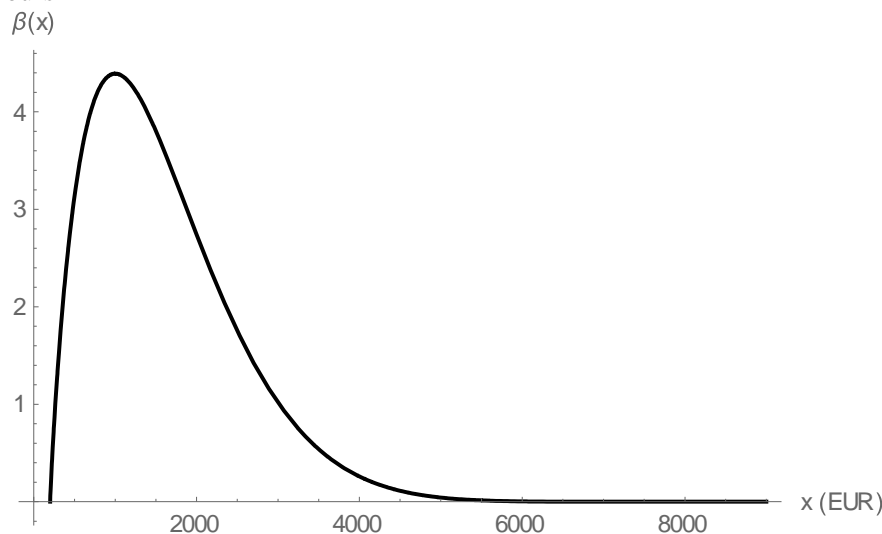


Figure 1. Deposit quantity in EUR, distribution  $\beta(x)$ .

Client trust in the bank is modelled by scores: from 0 (absolute distrust) to 1 (absolute trust), the distribution is shown in Figure 2. Every client has been modelled as an agent.

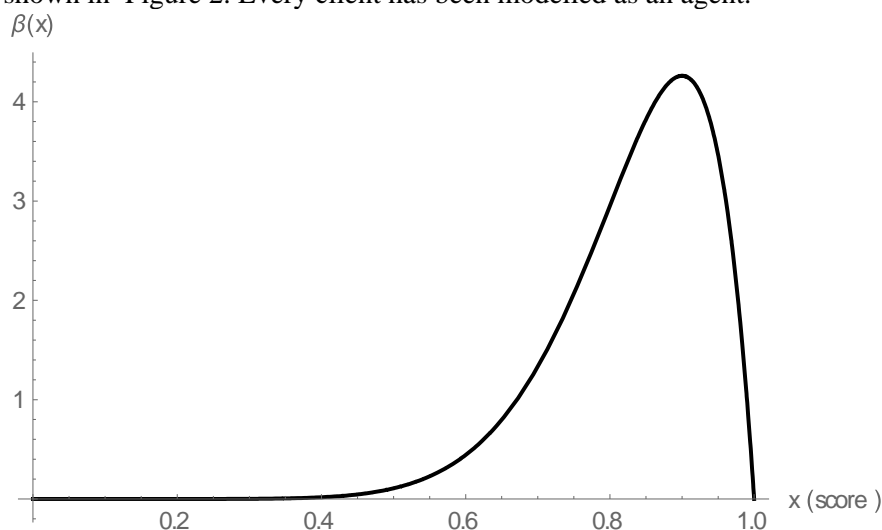


Figure 2. Distribution  $\beta(x)$  of consumer trust in the bank.

The initial customers' trust in the bank is assumed to be distributed by beta distribution. It is assumed, that a person trusts while his trust-score is higher than 0.5. As it is seen from Figure 2, initially, just a very small part of customers have lost their trust in the bank.

The behaviour of each out of total 5000 customer-agent was modelled by the statechart given in Figure 3. The customer that has lost the trust decides to take his money back from the bank and also warns his friends, sending a message about his doubts. The number of friends is a random number from interval [4;8]. Each received message decreases the score of trust. When the score falls below 0.5, the customer takes a decision to withdraw his money from the ATM. If the ATM is already empty and out of service, then the person waits for one hour, continue spreading rumour messages and tries again after one hour. If the person succeeds in being served and gets money within his daily limit of 150 EUR, his trust increases by 0.1 score. If the increased score is still below 0.5, he tries to get another part of his money next day, yet, he recovers the trust above 0.5. If the customer withdraws all his money, he is out of model.

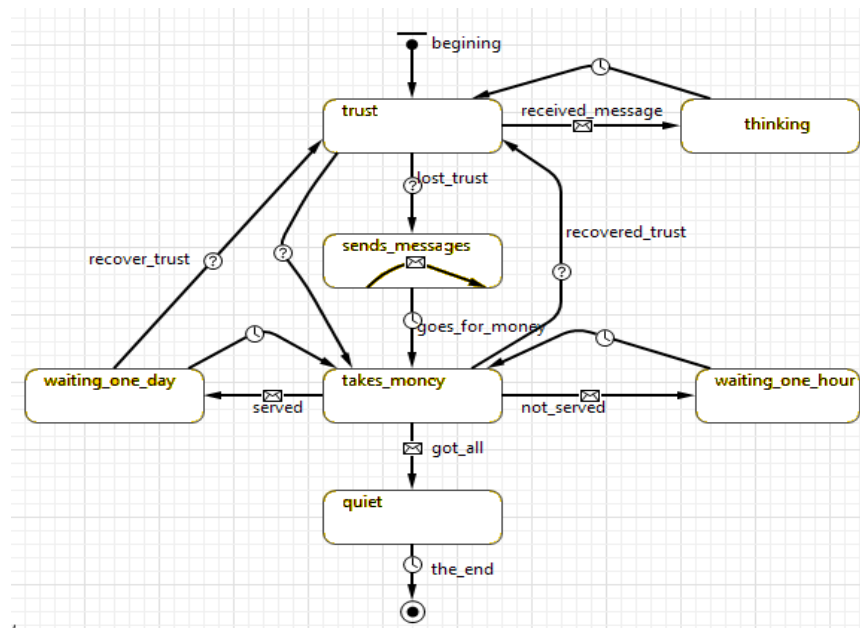


Figure 3. The statechart of the bank customer behaviour.

The bank was modelled as single agent. It collected information about the states of each ATM and took the decision to increase the initial ATM refill frequency with cash, if necessary. The bank's statechart is given in Figure 4.

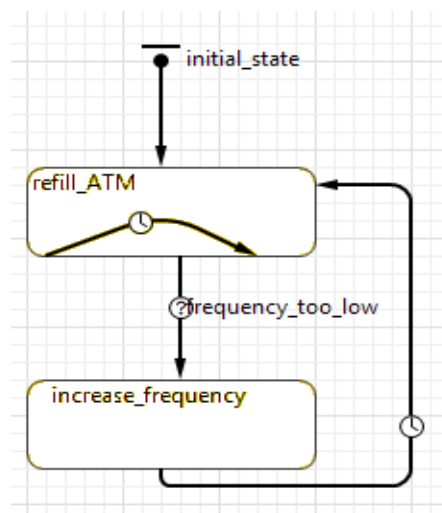


Figure 4. The bank decision statechart.

What is more, the state bank was simulated as one more agent in the model, which, in case of customer panic, publishes statements to weaken spreading canard (rumour). This information of the state bank increases every customer's trust score by 0.1.

### Simulation results

The simulation was carried out with the multimethod simulation software Anylogic. This program is a tool that brings together system dynamics, discrete event, and agent-based methods.

For the first series of simulation experiments the refill amount of ATMs was set at 30 000 EUR and frequency 30 hours. Due to rather large amount of 5000 customers, the results did not differ significantly in different model runs, despite the randomness of agent parameters. The simulation revealed that the cash in ATMs did not run out (Figure 5). During the first 30 hours customers withdrew more cash than later. This indicates that canard did not cause the panic. During the next 30 hour period canard decreased even more, what reflected in the withdrawal of money from ATMs. This could be explained by the fact, that the possibility to take money back didn't encourage to spread canard.

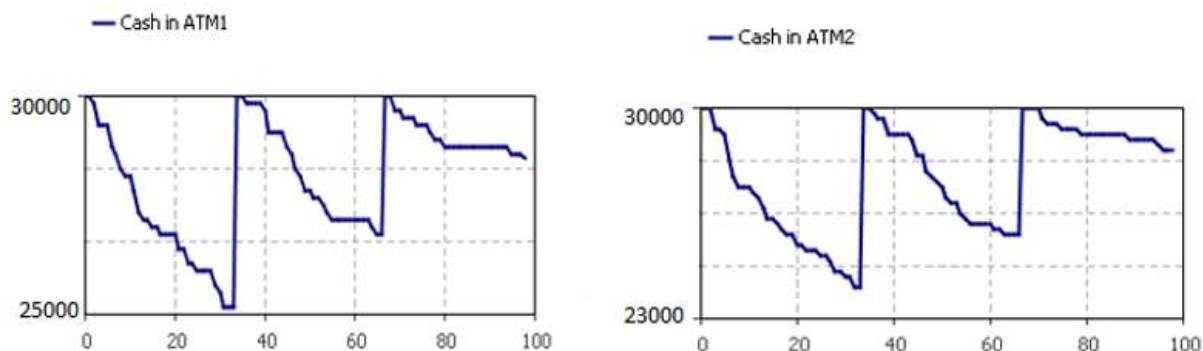


Figure 5. Change of cash in ATMs over 100 hours, when the refill amount is 30 000 EUR. Cash did not run out.

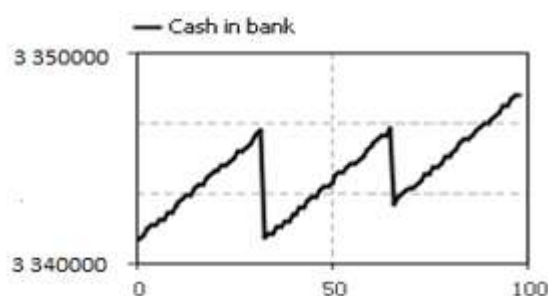


Figure 6. Change of cash in the bank over 100 hours, when the refill amount is 30 000 EUR and the bank has income.

The amount of cash in the bank increased because of coming cash flows as interest from loans (Figure 6). In the graph the leaps down correspond to the moments of cash increases in ATMs as the money in the bank's cash desk is shown here.

However, as ATMs are refilled with a lot smaller amounts of money, there isn't enough money left till next refill (Figure 7). So, it's seen here, that after every refill, which corresponds to the graph peaks, the curves go down much quicker. That means, because of panic, ATMs are emptied a lot faster.

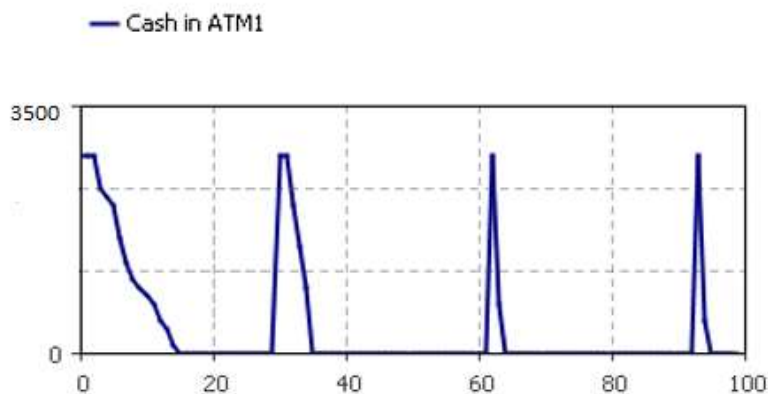


Figure 7. Amount of cash in ATM over 100 h when the refill is 3 500 EUR.

Figure 8 demonstrates, that, when there is a lack of money, trust in the bank decreases very fast (curve *Trust*). Its local maxima correspond to the time moments, that the state bank publishes calming statements.

However, these calming statements are temporary and the number of depositors, having decided to take their money back from the bank, is growing (Figure 8, curve *Go for money*) and the number of distrustful people is also rising (Figure 9). Therefore, after 100 modelling hours, one/fifth of the clients trust the bank and the distrust is increasing. So, the bank prospect can't be taken as positive.

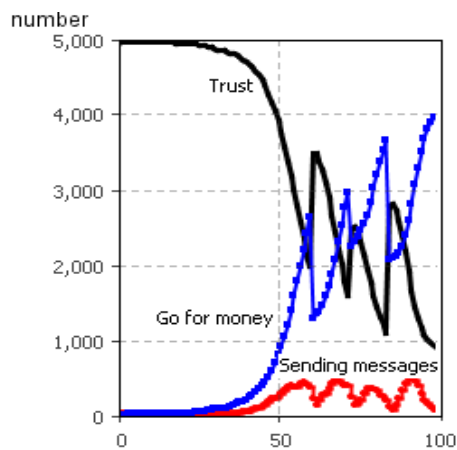


Figure 8. Behaviour of 5 000 customers over 100 h when the refill is 3 500 EUR.

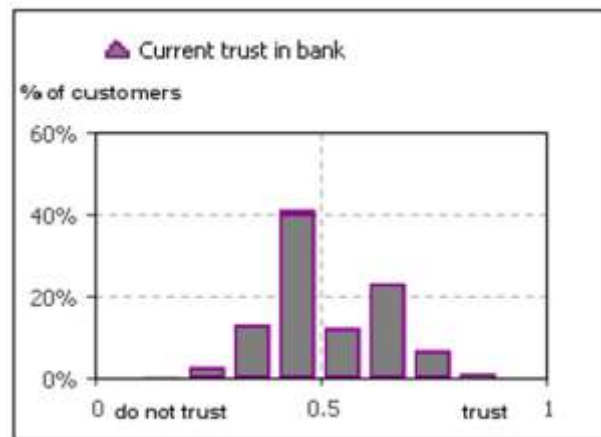


Figure 9. Distribution of 5 000 customers according to their trust after 100 h when the refill is 3 500 EUR.

The simulation experiment when the bank, having noticed that ATMs lack money, doubles the frequency of refilling until it is sufficient amount of money in the ATM has also been carried out (Figure 10).

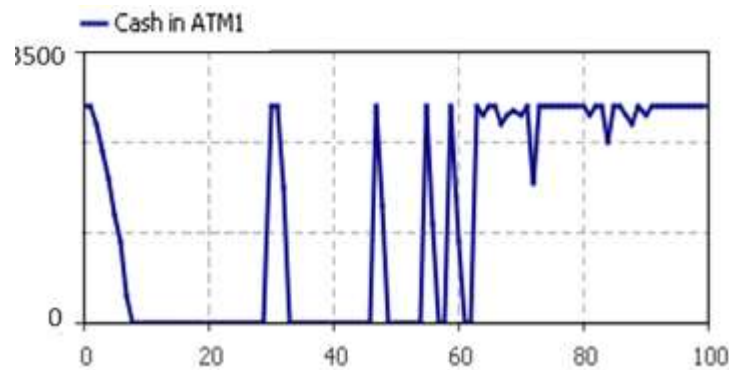


Figure 10. Amount of cash in the ATM over 100 h when the refill is 3 500 EUR, and the refill frequency is doubling.

In this case, around 2000 clients still trust the bank and the number doesn't go down (Figure 11). However, the clients, having decided to take their money back, take it within the daily withdrawal limit and their confidence doesn't recover. The formed balance must be kept stable as more or less after 60 modelling hours canard or rumour disappears.

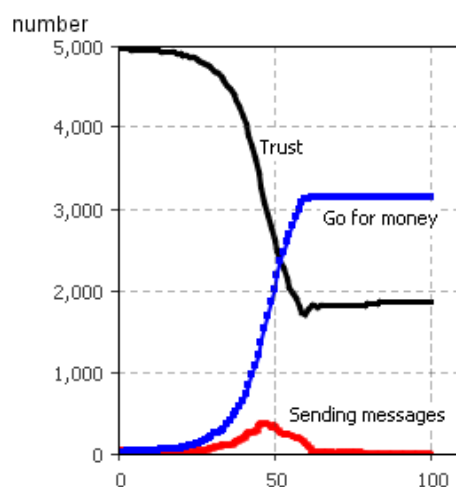


Figure 11. Behaviour of 5 000 customers over 100 h when the refill is 3 500 EUR and the refill frequency is doubling.

## Conclusions

The outcomes of the simulation showed, that

- the initial number of the people distrusting the bank didn't cause panic if depositors were allowed to get their money, they didn't believe canard/romour;
- however, when organizational difficulties in the bank service last longer than one day, they stimulate starting rumours and panic;
- limitation could only delay outcome, but not remove it;
- public statements also have short positive social effect.

Simulation under given assumptions at work hasn't proved the opinion what sometimes happens, that in case of panic it is necessary to limit taking back deposits and in this way to maintain bank liquidity. Therefore, providing opportunities for depositors to dispose their money freely, what in the simulation was implemented as doubling the frequency of refilling ATMs, dispelled panic, though, the bank lost some part of its clients.

That there wasn't modelled the opportunity in the model to take money from the bank office directly because of simplicity, it should not be kept as limiting circumstance. Even though it is possible to get back all the deposit in the office at once, however, the service is slower and this should not change the key simulation outcomes/results.

The article also demonstrates the agent-based approach to customer behavior modeling that can be used in university courses.

## Bibliography

1. *Bank customers withdraw hundreds of Euros amid cash point malfunction canard* (2013). [online] [17.11.2016]. Available at <http://www.thinkspain.com/news-spain/22472/bank-customers-withdraw-hundreds-of-euros-amid-cashpoint-malfunction-rumours>.
2. *Bendra banku sektoriaus informacija (General banks' sector information)*. (2016). [online] [17.11.2016]. Available at <http://www.lba.lt/lt/bendra-banku-sektoriaus-informacija> (in Lithuanian).
3. Borshchev A. (2013). *The Big Book of Simulation Modeling: Multimethod Modeling with AnyLogic* 6. Chicago: Anylogic North America.
4. Druteikiene G., Marcinkas A. (2000). *Lietuvos bankø įvaizdis ir jo kūrimas (Image of Lithuanian banks and its creation)*. Money studies. Money and banking. [online] [17.11.2016]. Available at [http://elibrary.lt/resursai/DB/LB/LB\\_pinigu\\_studijos/Pinigu\\_studijos\\_2000\\_04\\_03.pdf](http://elibrary.lt/resursai/DB/LB/LB_pinigu_studijos/Pinigu_studijos_2000_04_03.pdf) (in Lithuanian).
5. Gallegati M., Gulioni G., Kichiji N. (2003). Complex dynamics and financial fragility in an agent-based model. *Advances in Complex Systems (ACS)*. Vol. 6(03), pp. 267 – 282. [online] [17.11.2016]. Available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.104.4078&rep=rep1&type=pdf>.
6. Getchell A. *Agent-based modelling*. (2008). University of California: Davis. [online] [17.11.2016]. Available at <http://www2.econ.iastate.edu/tesfatsi/AgentBasedModeling.AdamGetchell.phy250.Report.pdf>
7. He Z., Manela A. (2016). Information acquisition in rumor-based bank runs. *The Journal of Finance*, Vol. LXXI (3), pp. 1113 – 1158.
8. Martinaitytė E., Matutis V. (2012). Krizė ir vertybių kaita (Crisis and change of values). *Societal Innovations for Global Growth*, Vol. 1(1), pp. 1014–1025.
9. Plikynas D., Budrionis A. (2010). *Kompiuterinio intelekto ir daugiaagenčių sistemų integralus taikymas socialiniams tyrimams: Principai ir galimybės (Computer intelligence and multi agent system integral application for social research studies: principles and opportunities)*. [online] [17.11.2016]. Available at [https://www.lb.lt/plikynas\\_ir\\_budrionis](https://www.lb.lt/plikynas_ir_budrionis) (in Lithuanian).
10. Šadžius L. (2004). Lietuvos komerciniai bankai ekstensyvos plėtros ir griūties sąlygomis (1991 – 1996 m.) (Extensive expansion and collapse of Lithuanian commercial banks (1991–1996)). *Pinigų studijos*, Vol. 4, p. 5 – 30. ISSN 1392-2637 (in Lithuanian).

## The Role of the School Subjects' Name on its Content and Image

Jaana Taar<sup>1</sup> MA; Tiina Vant<sup>2</sup> MA

Tallinn University, Estonia<sup>1,2</sup>

[jaana.taar@tlu.ee](mailto:jaana.taar@tlu.ee)<sup>1</sup>; [tiina.vant@tlu.ee](mailto:tiina.vant@tlu.ee)<sup>2</sup>

**Abstract:** One of the schools' educational targets is to give students the best possible readiness for coping in their independent life in contemporary society. Therefore, the content of different school subjects need to be in continuous changes simultaneously with the developments in society. Changes are visible also in the adjustments of school curricula which channels societal developments into school lessons. Similarly, home economics education is in continuous change and development. The content of home economics education in Estonia has widened within last decades with the focus moving from obtaining practical skills to becoming a responsible citizen. This article gives a brief overview of the developments of home economics education in Estonia. In addition, the role of subjects' name in relation with its image is opened. Although the name of the subject home economics has been introduced already in 1996 it is still misused in writings and discussions between different parties (teachers, students, parents, school leaders). This study used document analysis to map the information related with home economics education on all schools' web-pages in Estonia to analyse what is the officially presented name of the school subject. Results are opened in the light of the background knowledge – history and language. Based on the results, inaccurate names and adaptations that originate already from 1930s are in active use. What it tells about the image of the subject if besides the official name in curriculum 13 different name variations are also used?

**Keywords:** home economics, school subject, change, image, school education.

### Introduction

In this paper, image of a school subject is treated as appearance (Martin, 1998). Every school subject has an appearance which may or may not fairly reflect their essence, for example, positive image may be only a mask to cover up a less attractive or acceptable reality. Or vice versa, negative image may overshadow the true content of a school subject. G. Martin (1998) clarifies that, although the view of image as self-created has been popular; today it is believed to be a projection of the inner reality which is mediated by the relationships with other people and other fields. He continues that the image of a school subject “will be projected through the statements and activities of those involved and the milieu that they create”. In addition, image is influenced by historical factors – like anecdote and assumptions; and by semantic factors – jargon, metaphor and connotation.

Historical and semantic influences are also seen in the image of home economics in Estonia. During Soviet times, the content of home economics was not valued, meaning that lessons were held minimally if all, topics were narrowed into practical food preparation and these were organized as part of craft lessons for girls (*tütarlaste tööõpetus*; Estonian names are used hereafter). Food preparation lessons (Table 1) were called cookery lessons by teachers and students. In the first curriculum (Eesti põhi..., 1996) of emancipated Estonia, the name of home economics was presented again using shortened form (*kodundus*). Through history, the subject home economics has had mainly two official names in Estonian - *kodumajandus* (before 1944) and *kodundus* (after 1996) (more about the development and the content of *kodumajandus* in J. Taar article (Taar, 2015)). Both names are translated into English as home economics. *Kodumajandus* consists of two words *kodu* (meaning home) and *majandus* (meaning economy). *Kodundus* is shortened version of the name that was adapted to make it more convenient to use. Shortened version of the name is appropriate as it consists of the word *kodu* and an appendix *ndus* which is used to add to the noun to express an activity. Therefore, the name *kodundus* takes together all activities that are related with home.

Since 1996 home economics stayed united with handicraft and was in the curriculum named as handicraft and home economics (National Curriculum ..., 2014). Nevertheless, the name cookery lessons remained in everyday talk and are strongly in everyday language till today. Using these names actively in school context gives wrong image also for the wider community. K. Aava (2010) claims, that repeating wrong concepts constantly makes it axiomatic in socio-cultural context. Cookery stands narrowly for food preparation and does not involve other important areas of home economics education.

Table 1

**The development of the official subject names under the subject field technology**  
(Keskkooli õppekavad..., 1930; Kaheksaklassilise kooli..., 1976; Eesti põhi..., 1996; Põhikooli ja..., 2002; National Curriculum..., 2014)

Year	School subject names	
1930	Grades 1-6	Grades 7-8; grades 9-12
	<i>Kujutamine ja tööõpetus</i> (Drawing and craft); included one topic of home economics – <i>majapidamine</i> (Housekeeping)	<i>Käsitööõpetus</i> (Craft studies); <i>Kodumajapidamine</i> (Household); <i>Käsitöö tütarlastele</i> (Handicraft for girls); <i>Majapidamisõpetus</i> (Household studies)
1976		Grades 4-8
		Tütarlaste tööõpetus (Craft for girls); included two topics of home economics – <i>toitlustamine</i> (Catering) and <i>korrastustööd</i> (Household works) <i>Poeglaste tööõpetus</i> (Craft for boys)
1996	Grades 1-4	Grades 5-9
	<i>Tööõpetus</i> (Craft)	<i>Käsitöö</i> (Handicraft); <i>Kodundus</i> (Home economics); <i>Tööõpetus</i> (Craft)
2002	Grades 1-3	Grades 4-9
	<b><i>Tööõpetus (Craft)</i></b>	
	<i>Käsitööõpetus</i> (Craft studies)	<i>Käsitöö</i> (Handicraft); <i>Kodundus</i> (Home economics); <i>Töö- ja tehnoloogiaõpetus</i> (Craft and technology studies)
2011 renewed on 2014	Grades 1-3	Grades 4-9
	<b>Tehnoloogia valdkond (Subject field Technology)</b>	
	<i>Tööõpetus</i> (Craft)	<i>Käsitöö ja kodundus</i> (Handicraft and home economics); <i>Tehnoloogiaõpetus</i> (Technology studies)

G. Martin (1998) claims, that little attention is paid on how the image of a school subject is perceived by significant others. Teaching colleagues, parents and others are left with unhelpful, contradictory or misleading impressions which hinder the efforts of the subject area practitioners (Martin, 1998). Latter may deepen the understanding that some school subjects are less valuable than others. It is exactly what may happen with the area of home economics education in Estonia when those responsible for the image of this school subject ignore their obligation. Home economics as a practice oriented subject may be placed on a lower level of curriculum hierarchy like explained by J. Bleazby (2015). Therefore, it is important to carefully consider what kind of image is projected by those involved. As seen from the table above, the name of the school subject handicraft and home economics in Estonia has changed a lot and these developments are not very systematic. As an example, the historical development of the name shows how, in different curricula, craft has been used either for labelling the subject in primary schools, for identifying all craft related lessons (and concretizing groups with gender), for naming only boys' craft lessons or for taking together the whole subject area. It is understandable, that change in the regime of the state has influenced also educational regulations (before 1991). Nevertheless, it is not known why the name of the school subject has been so unstable during last decades.

G. Martin (1998) names several benefits of a consideration of image. Two of these are named here. First, image helps to recognize the place of the subject area in relation to other subjects. Home economics allows putting theoretical knowledge studied in other school subjects (like chemistry, biology, mathematics) into actions which helps students to understand complex abstract knowledge. For subject integration teachers need to collaborate and therefore the image of the school subject needs to be strong and advised. Second, image helps to identify personal as well as organisational development targets. Even further, image is a necessary feature of curriculum management and strong force for change. To enable needed developments, it is crucial that the image of a school subject is true.



Although school is considered to be traditional institution and changes are slow to come into force, school curriculum is constantly in change as subjects need to respond to socio-cultural needs. Lesson amount in a week, the content of different subjects and even the name of a subject may become “arenas of conflict” between political, academic and school communities (Jephcote, Davies, 2007). Home economics as a school subject has gone through remarkable changes in different countries. For example, because of various school reforms in Latvia the content of home economics and technologies has become more oriented to learning theory (Volāne, 2015). From 2011 Sweden changed the name of *home economics* to *home and consumer studies* to better meet the expectations of the consumer society (Håkansson, 2015). Also, home economics education in Estonia has changed (Taar, 2015). Already in 1996, the content of home economics was widened, now it was more than just practical food preparation and household works. New topics like consumer issues, nutrition, etiquette and food safety have been added to the syllabus over the years. Today, learning in home economics is associated with everyday life and real life problems. A major change in the 2011 curriculum was making home economics compulsory for all students (although in a different scope). In addition, curriculum (National Curriculum..., 2014) emphasizes that boys and girls can according to their interests freely choose in which thematic group (handicraft and home economics or technology studies) they want to learn (Taar, 2015). Named shifts reflect also the changes in the target of this subject, meaning that it is no longer educating women and future housewives; instead it educates responsible, capable and independent citizens. Yet another change is seen in the amount of lessons. While previously teachers could decide how much time they would concentrate on home economics issues, the mandatory number of lessons for home economics topics are now required in the curriculum (National Curriculum..., 2014).

The changes in the curriculum may involve two kinds of challenges. Firstly, although the re-balancing is an essential feature of curriculum innovation that keeps important topical themes and drops out themes that are no longer sustained, new content is added to teaching practices too often without clearing away some of the old (Martin, 1998). Latter seems to be the case also in Estonia. While the content of the subject in the curricula has changed over years, teachers add new content to their existing teaching plans and are displeased as it is impossible to achieve all. Secondly, “those involved with curriculum change are genuinely committed to internal change” (Martin, 1998) and therefore, the image of the field is assumed to be self-transforming. “This is naively optimistic and ignores all the persistent factors which form the image, negotiate the relationships between subject areas and make up the institutional culture” (Martin, 1998, 40-41).

Based on named challenges there is a gap between the content of the subject in curriculum and in the real lesson of home economics. National curriculum (National curriculum..., 2014) in Estonia defines home economics broadly. In reality, the content of a subject seems to be more limited. Practical cooking activities are dominant in home economics lessons based on the author’s connections with home economics teachers and on the study (Randla, 2012) about the implementation of new curriculum (National curriculum..., 2014). As home economics is taught in combination with handicraft – and textile works take more time – it is not possible to cover all topics in home economics (Randla, 2012). Thus, practical skills are trained and more theoretical aspects of the subject are left aside. In addition, M. Randla (2012) points out that the content of home economics in the curriculum is too declarative and teachers’ interpretations of what to teach are therefore too different from each other.

At the same time, attempts to make changes in teaching are always implicated in teachers’ own orientations to their subjects (Williamson, Morgan, 2009). R. Patrikainen (1999) explains that teachers’ understandings of the societal developments and the curriculum create the basis of teachers’ view about significant knowledge of student and how it should be learned. So, teachers are taken as professionals who can decide what the most appropriate content is for their students in particular school’s subject. It is interesting to see in Estonian context, where handicraft and home economics is taught in conjunction by the same teacher, how teachers passion and commitment (Cameron, Mercier, 2016) influence their choices of what topics to handle. If teachers are more interested in handicraft topics they pick learning tasks that are related with textile, while being more attracted on topics of home economics, they find more possibilities (despite time related, physical and material challenges) for these lessons. Although decisions affect the lesson inside one school, teacher’s choice projects the image of the school subject for the wider community (Jephcote, Davies, 2007). Therefore, it is important to bring forward teachers’ responsibility in designing the external image of a school subject.

The image of home economics education in Estonia has not been studied. The content and goals of this subject have changed within last decades. Although, the name of the subject home economics came visible in 1996 it is still misused in writings and discussions between different parties (teachers, students, parents, school leaders). In addition, it can be expected, that it's hard for teachers to orientate and take a stand in the subject's name as well as content considering the constant changes through history. School as an institution is slow in implementing changes. Based on hereinbefore, it may be expected that the description in the curriculum and the reality in the school lesson are not equivalent. Therefore, the goal of this study was to find out what is the official name of this school subject that is presented on schools' web pages. The name of a school subject is a symbol that makes up social reality and reflects the image of home economics by members of school community. Schools' web pages are official channels to inform parents as well as society about how the learning process occurs in schools. Although the interest was to study home economics' image, findings are presented together with the aspects about the area of handicraft as these subjects are taught in collaboration in Estonia.

### Methodology

Document analysis (Altheide, 1996) was used in this study for mapping the information related with home economics education on all schools' web-pages in Estonia. Based on D.L. Altheide (1996) definition of a document, it can be any symbolic representation that can be recorded or retrieved for analysis. All schools in Estonia have their own web pages that can be retrieved and most schools use this to present the list of teachers' names together with the subject(s) names they teach. All schools web pages as documents were visited in June and July 2016 and information related with handicraft and home economics teachers were saved into MS Excel table for further analysis.

The state portal (*eesti.ee*) was taken as the basis for getting information about the school types and numbers in different counties in Estonia. Altogether 492 schools web pages were searched and/or visited from 15 counties. Pages that did not open were revisited in October 2016. Information was not available on 47 web pages. These pages had technical problems, they did not give information about single school subjects or the school did not have website. In addition, there are 87 schools where handicraft and home economics lessons are not compulsory by national curriculum – for example, in schools for students with special needs; in high schools; in “night schools” for adults; or in kindergarten-primary schools. Therefore, information from 358 schools was included into the analysis.

Gathered information was systemized and analysed according to the content. The main aim was to find out what is the name of a particular school subject on different schools' web pages.

### Result and discussion

As expected, the results were variegated. Altogether 14 different names for the school subject were used in schools' websites. For the better overview names with slight differences were combined in this study, leaving 9 unlike versions. Results are presented in Table 2.

Finding so many various names on schools' web pages supports G. Martins' (1998) claim that there is little attention on how a school subject is perceived by outsiders. As seen from Table 1, through history there has not been consistency in the name of this subject area. It is understandable that those responsible for updating schools' home pages might not be totally familiar with the development of the curriculum and therefore the names are presented incorrectly. Those related with this subject area should keep an eye on the public information that is also part of the image projection.

Following, the results are opened according to Table 2. The interpretations of the reasons are done based on authors' experiences from working on the field and on the theoretical literature with the purpose to open the background for the reader. Based on this study, it is impossible to claim what are the exact reasons behind the development of the subject's name.

The correct name of the subject handicraft and home economics (*käsitöö ja kodundus*) was used on 125 (36 %) schools' web pages, that is only one third of studied schools. The situation differed significantly in various counties in Estonia. For example, 58 % of schools in Valgamaa, 45 % in Viljandimaa and 44 % in Harjumaa have written the name of this subject in a correct way. It is hard to predict what can be the relation why these three counties provide the information most accurately. These counties situate

in different parts of Estonia. In Harjumaa, the population is the biggest and there is the biggest number of schools (122), while Valgamaa and Viljandimaa are much smaller (accordingly 20 and 27 schools). At the same time, there are no correct name on the web pages in Hiiumaa and only 8 % in Jõgevamaa.

Table 2

### School subjects' names on schools' web pages

Name in English	Name on the web page (in Estonian)	% of all names
Handicraft and home economics	<i>Käsitöö ja kodundus</i> <i>Käsitöö, kodundus</i> <i>Kodundus ja käsitöö</i> <i>Kodundus, käsitöö</i>	36
Handicraft	<i>Käsitöö</i>	32
Craft	<i>Tööõpetus</i>	15
Handicraft for girls	<i>Tütarlaste käsitöö</i>	7
Craft for girls	<i>Tütarlaste tööõpetus</i> <i>Tööõpetus (tüdrukud)</i>	6
Handicraft and home economics for girls	<i>Tütarlaste käsitöö ja kodundus</i>	1
Home economics	<i>Kodundus</i>	1
Technology studies for girls	<i>Tütarlaste tehnoloogiaõpetus</i> <i>Tütarlaste töö- ja tehnoloogiaõpetus</i>	1
Technology studies	<i>Tehnoloogiaõpetus</i>	1

Slightly less represented was the name handicraft (*käsitöö*) that was found from 33 % of all schools' web pages. Handicraft as the name of this school subject was most often used in 7 counties out of 15 (e.g. 65 % of the schools in Võrumaa, 54 % in Lääne-Virumaa and 50 % in Jõgevamaa). All 5 schools on the small island Hiiumaa used the name Handicraft that is half-right and stands only for one side of this subject, leaving home economics aside. There may be several reasons for this phenomenon. At first, as the curricula on 1996 and 2002 handled handicraft and home economics as two subjects that were taught in combination (in Table 2 written as "handicraft, home economics" in comparison with "handicraft and home economics"), teachers used the name that was more correct in their schools. Teachers who did not have proper conditions for organizing home economics lessons left these topics of the subject aside and taught only handicraft. Secondly, handicraft has long traditions in Estonia and this overshadows home economics (Taar, 2015). Thirdly, the age of an average Estonian teacher is 48 years and the average teaching experience is 22 years (Übius, Kall, 2014). It is predictable, that a considerable number of teachers have got their education before the major changes in the curricula in 1996. It means that handicraft and home economics teachers are trained to become craft teachers for girls and it is challenging for them to make changes in their teaching practices. Fourthly, semantic influences may cause the use of abbreviation. The name handicraft and home economics is too long to use in everyday discussions. Therefore, shortened versions are used and as confirmed by K. Aava (2010), if the words are used often, it makes them unquestionable. Another side of this phenomenon is also in use. 5 (1,5 %) schools in Estonia use the limited name home economics to present this school subject. Based on J. Cameron, K. Mercier and S. Doolittle (2016) view teachers' passion is in strong connection with their choices of what topics to handle in the lesson. Therefore, it may be predicted, that home economics is more liked by 1,5 % of the teachers in this subject area.

The name craft (*tööõpetus*) is still widely in use. It is found on 15 % of all schools' web pages in Estonia. This name is mostly used in Ida-Virumaa (40 %) and Viljandimaa (30 %). Although, on the schools' websites in some counties craft as a name is not used (in Hiiumaa, Jõgevamaa, Valgamaa and Lääne-Virumaa). The biggest usage of the name craft in Ida-Virumaa might be related with the fact that this part is the only area where Estonians are a minority, under 20 %. In the cities of Narva and Sillamäe they are even less than 5 % (Tiit, Servinski, 2013). Russian background may influence using the name from Soviet time. Another, historical reason might be that there is a misunderstanding in relation with the concept of the word craft. Considering the diversity of the name (Table 1), the results of this study

are not giving an understanding if the names on the web pages at this moment are used in a wrong way or these have just stayed unchanged.

Partial changes are seen in names like handicraft for girls (*tütarlaste käsitöö*; 7 % of all names) and handicraft and home economics for girls (*tütarlaste käsitöö ja kodundus*; 1 %), although the reference on gender has remained. Linguistically, it is old-fashioned to use the word “*tütarlaste*” (it means girl but can not be used equally). The word “*tütarlaste*” comes from 1930s and remained to be used during Soviet times. For craft (*tööõpetus*) lessons students were divided into two groups according to their gender. These groups were named as craft for girls (*tütarlaste tööõpetus*) and craft for boys (*poeglaste tööõpetus*) (Kaheksaklassilise kooli..., 1976). During that time the system was straightforward, girls took textile lessons and boys wood lessons. When the names handicraft and home economics were first used in the curriculum of 1996, the reference for gender was no longer added in the official name of this school subject. Therefore, it was surprising to see that schools indicate to the gender even now, 20 years after the change was made. Although, the latest curriculum states clearly that organizing groups must not be related with gender, it may be hard for teachers to change their thinking after so many years of self-evident system. Therefore, remarks for gender may be found from the data. Even the pure example of the subjects’ name in the Soviet time can be found. 6 % of all Estonian schools’ websites use the subjects name craft for girls.

While it was predictable to find previously accepted names still in use, it was surprising to see versions of subjects’ names that have never been in official use. As an example, technology studies; technology studies for girls; and craft and technology studies for girls. The name technology study is valid for wood and metal lessons in current curriculum, while craft and technology studies were used similarly in the last curriculum. It is incomprehensible why it is used in the context of handicraft and home economics. It seems like the names of two subjects are unfoundedly reconciled on schools’ web pages.

Based on the findings, it is seen that home economics is hidden. According to J. Cameron, K. Mercier and S. Doolittle (2016) teacher’s passion and commitment influence her choices of what topics to handle. This claim can be transposed into the context of handicraft and home economics in Estonia. Seeing handicraft dominating over home economics allows to expect that Estonian handicraft and home economics teachers are more passionate about the topics of handicraft. This is explained by teachers’ educational background and by the fact that handicraft has strong traditions in Estonia.

As seen from the overview of the development of curriculum (Table 1) the name of the subject has been constantly changing. These changes have left its mark also on the schools’ websites (Figure 1).

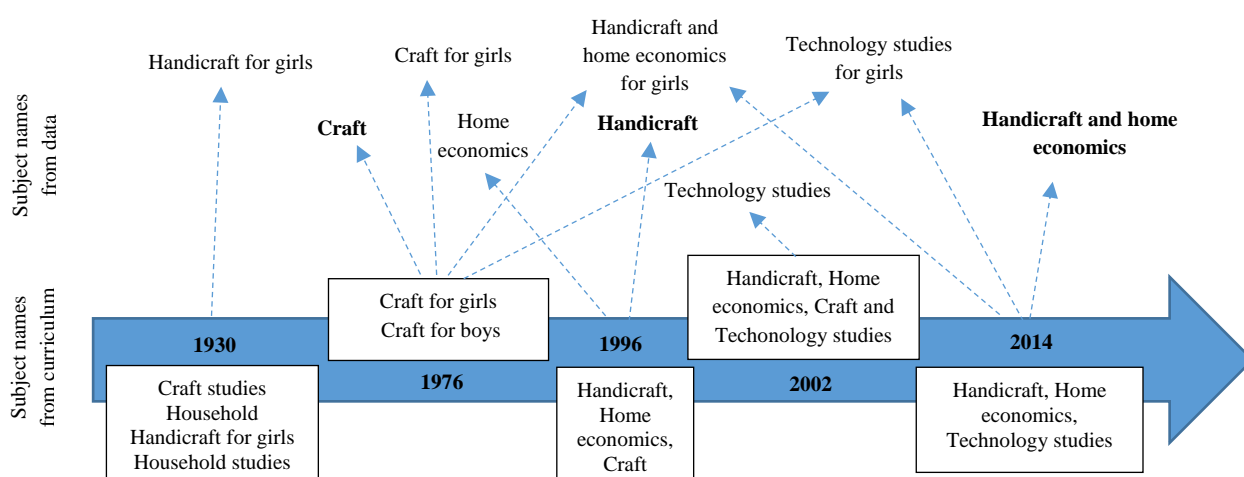


Figure 1. Subjects names on schools’ websites in relation with the period where they possibly originate.

Based on G.A. Martin’s (1998) statement, teachers work within a subject area which continually re-invents itself. School subjects need to develop in time. Although, subject’s name does not necessarily need to be modified with every development in the curricula. Innovations in the name should come along with the major changes in the subject as seen in 1996 when the content of the subjects was

widened. Nevertheless, teachers constantly need to pay attention “to the fit between the internal changing reality and the perceptions of outsiders” (Martin, 1998). The change starts from the inside. Image of a school subject is a symbol that is projected through the statements and all field related activities of teachers and students (in schools and outside) as well as in the milieu that they create. When teachers make developments in their teaching practice and students’ learning, they also need to keep an eye on how developments are seen from outside. Because, “if there is a lack of attention to projecting an accurate image, then the image will be formed by other forces and these will bear the value systems which hold allegiance to other fields of study” (Martin, 1998, 41).

The findings of this study raise the question how the name of the school subject can be so diverse? School subjects’ name is one of the important elements of the image. The name should present fair and complete content of the subject. As seen from the findings, 64 % of the names presented on schools’ web pages are not correct and some versions display the subject only partly. The presentation of the subject handicraft and home economics is disorganized in schools’ web pages and this leaves careless impression. How can handicraft and home economics be positioned in relation to other school subjects if its image is not clearly understandable? How can image give an adequate input for the curriculum development if the image is one-sided?

It is not known how well are teachers informed about the information on schools’ web page and how much they are involved with the development of these sites. Nevertheless, if they are not able to change the information on the web pages they should send the necessary information to those responsible for administrating websites. The information given on school’s website creates the image of the school’s subjects but, in addition, this information is also personal as it displays the image of the teacher. If teachers are not interested about the subject’s image they could at least be interested about the image of themselves.

## Conclusion

In conclusion, if image is believed to refer to the needs of individual and organizational developments, it may be said that handicraft and home economics teacher as well as school’s web manager need to be better informed about the importance and influences of the image of a school subject. Teachers are concentrating on the inner developments of the subject without being aware that they also create the image of the subject. Without this knowledge, they are likely to make any changes.

Now, when knowing how handicraft and home economics is presented officially by schools’ web pages, it is seen that results are colourful. More various names could be seen in the oral talk, where adaptations, jargon and slang is used. Therefore, it is needed to study what names are in use by different stakeholders – students, teachers and parents. In addition, it would be interesting to get teachers’ response to the findings of this study. How teachers feel themselves about the image of home economics and what is their opinion about the role in the projection of the image of home economics.

## Bibliography

1. Aava K. (2010). *Eesti haridusdiskursuse analüüs* (The Analysis of Estonian Educational Discourse). (Dissertation). Tallinn: Tallinn University. (in Estonian).
2. Altheide D. L. (1996). *Qualitative Media Analysis*. Sage Publication. pp. 1 – 13.
3. Bleazby J. (2015). Why Some School Subjects have a Higher Status than Others: The Epistemology of the Traditional Curriculum Hierarchy. *Oxford Review of Education*, Vol. 41 (5), pp. 671 – 689.
4. Cameron J., Mercier K., Doolittle S. (2016). Teacher-Led Change in Secondary School Physical Education. *The Physical Educator*, Vol. 73, pp. 32 – 58.
5. *Eesti põhi- ja keskkooli riiklik õppekava (Estonian National Curriculum for Basic and Upper Secondary School)*. (1996). [online] [07.11.2016]. Available at <https://www.riigiteataja.ee/akt/29725> (in Estonian)
6. Håkansson A. (2015). Indoctrination or Education? Intention of Unqualified Teachers to Transfer Consumption Norms in Home Economics Teaching. *International Journal of Consumer Studies*, Vol. 39, pp. 682 – 691.
7. Jephcote M., Davies B. (2007). School Subjects, Subject Communities and Curriculum Change: the Social Construction of Economics in the School Curriculum. *Cambridge Journal of Education*, Vol. 37 (2), pp. 207 – 227.

8. *Kaheksaklassilise kooli programmid (The Programs of the School with Eight Grades)*. (1976). Tallinn: Valgus. (in Estonian)
9. *Keskkooli õppekavad (Curriculum for High Schools)*. (1930). Tallinn: Hariduse- ja sotsiaalministeerium. (in Estonian)
10. Martin G. A. (1998). Whose Image is it Anyway? Some Considerations of the Curricular Importance of Subject Image in Secondary School Design and Technology Education. *International Journal of Technology and Design Education*, Vol. 8, pp. 37 – 49.
11. *National Curriculum for Basic Schools*. (2014). [online] [07.11.2016]. Available at <https://www.riigiteataja.ee/en/eli/ee/VV/reg/524092014014/consolide>
12. Patrikainen R. (1999). *Opettajuuden laatu (The Quality of Teaching)*. Jyväskylä: Gummerus Kirjapaino Oy. (in Finnish)
13. *Põhikooli ja gümnaasiumi riiklik õppekava (National Curriculum for Basic and Upper Secondary School)*. (2002). [online] [07.11.2016]. Available at <https://www.riigiteataja.ee/akt/12888846> (in Estonian)
14. Randla M. (2012). *Uue riikliku õppekava arendusest ja rakendumisest koolis. Tööõpetuse, käsitöö ja kodunduse aines (Development and Implementation of the New Curriculum. In the Subjects Craft, Handicraft and Home Economics)*. [online] [09.11.2016]. Available at: [http://www.oppekava.ee/images/1/1a/Randla\\_t%C3%B6%C3%B6petus\\_k%C3%A4sit%C3%B6%C3%B6\\_kodundus\\_eksperthinnang\\_2012.pdf](http://www.oppekava.ee/images/1/1a/Randla_t%C3%B6%C3%B6petus_k%C3%A4sit%C3%B6%C3%B6_kodundus_eksperthinnang_2012.pdf) (in Estonian)
15. Taar J. (2015). From Kodumajandus into Kodundus - Home Economics Curricula in Estonia. In Janhonen-Abuquah H., Palojoki P. (Eds.). *Creative and Responsible Home Economics Education*. Helsinki: University of Helsinki, pp. 164 – 177. [online] [15.12.2016]. Available at <https://helda.helsinki.fi/bitstream/handle/10138/157591/luovajav.pdf?sequence=1>
16. Tiit E.M., Servinski M. (2013). *Rahva ja eluruumide loendus. Ülevaade Eesti maakondade rahvastikust (Census of Population and Housing. An Overview of the Population in Estonian Counties)*. Tallinn: Statistikaamet. (in Estonian)
17. Übius Ü., Kall K., Loogma K., Ümarik M. (2014). *Rahvusvaheline vaade õpetamisele ja õppimisele. OECD rahvusvahelise õpetamise ja õppimise uuringu TALIS 2013 tulemused (Nationwide view on Teaching and Learning. The Results of the Talis 2013 OECD Nationwide Study about Teaching and Learning)*. SA Innove. (in Estonian)
18. Volāne E. (2015). Home Economics and Technologies at an Elementary School: Problems and Solutions. In Dislere V. (Ed.). *Proceedings of the International Scientific Conference Rural Environment. Education. Personality*, Vol. 8. Jelgava: Latvia University of Agriculture. pp. 292 – 300. [online] [15.12.2016]. Available at <http://lufb.ltu.lv/conference/REEP/2015/Latvia-Univ-Agricult-REEP-2015proceedings.pdf>
19. Williamson B., Morgan J. (2009). Educational Reform, Enquiry-based Learning and the Re-professionalization of Teachers. *The Curriculum Journal*, Vol. 20(3), pp. 287 – 304.



## Handicraft and Home Economics Teachers' Understandings of the Possibilities of ICT Usage in Their Practice

Eva Veeber<sup>1</sup> MA; Jaana Taar<sup>2</sup> MA; Kristi Paas<sup>3</sup> MA; Ene Lind<sup>4</sup> PhD;  
Tallinn University, Estonia

[eva.veeber@tlu.ee](mailto:eva.veeber@tlu.ee)<sup>1</sup>; [jaana.taar@tlu.ee](mailto:jaana.taar@tlu.ee)<sup>2</sup>; [kristi.paas@tlu.ee](mailto:kristi.paas@tlu.ee)<sup>3</sup>; [ene.lind@tlu.ee](mailto:ene.lind@tlu.ee)<sup>4</sup>

**Abstract:** Manual activity has been considered as an essential component of personality development for a couple of centuries in Estonian education. Although handicraft and home economics (HHE) is school subject where the student obtains basic skills that are constant in time, its content is also reactive to the changes in the society. One might think that using ICT is the opposite of the physical process of making with hands and that HHE subject's predominantly practical content has difficulties when trying to keep up with rapid digital development. People like to make things by hands and share them not only on the pragmatic purpose, but also for sense of belonging. As digital technology has become part of our everyday life, therefore it may be viewed as an extension of the physical space offering a meeting place where it is possible to act, find like-minded people and meaningful information without the limitations of physical world. The aim of the study was to find out HHE teachers' understandings of the usage of ICT tools in subject teaching in the compulsory school. Data consisted of teachers' writings where they described the personal experiences of using ICT tools. Writings were analysed using inductive coding. The results of the study show that HHE teachers' readiness to use ICT tools is dependent of their subject specific views. Even if HHE teachers see digital technology as a part of daily life that can be integrated in their work they do not use the full potential of new possibilities. Their writings showed lack of digital pedagogical skills and inability to apply modern technologies in student-centred instruction.

**Keywords:** teachers' understandings, ICT, school education, handicraft, home economics.

### Introduction

Working with hands is one of the main activities of the human being. Humans have a natural desire and need to use their hands in a satisfying and harmonious way (Kojonkoski-Rännäli, 1995). Although some craft skills have lost their necessity due to the social changes, their educational and psychological significance have remained until today (Pöllänen, 2009). In Estonian education, manual activity has been considered as an essential component of personality development and with a few exceptions craft has been a school subject since the early 19<sup>th</sup> century (Lind, 2009). Presently, craft skills are taught under the subject field Technology throughout the basic education (National curriculum..., 2014): the subject is called handicraft in the first stage of school (grades 1-3). In the second and third stage (grades 4-9), pupils are divided into two groups learning either handicraft and home economics or technology education. Craft subject reflects school's two-fold nature. On the one hand, the aim of the general education is to maintain traditions and pass on accumulated important knowledge. On the other hand, it is future oriented, trying to prepare individuals who can cope with the ever-changing world. Even if making artefacts and precise mastery of techniques has been the central goal of the earlier craft subject syllabi (Lind, Pappel, 2007), then in today's world, the aim of developing craft and everyday skills is to promote the emergence of new ways of thinking (Karppinen, 2006).

One might think that using ICT tools is the opposite of manual activity and therefore handicraft and home economics (HHE) subject has difficulties responding to the changes in society brought by the digital revolution. S. Karppinen (2006) finds that teaching crafts at its best helps a person independently look for and find the sources of her willingness, inspiration and making, and introduce those processes to others as well. As digital technology has become part of everyday life, the virtual space can be seen as the extension of the physical space (Nevejan, 2003). Our living environment is closely related to the changes that digital revolution has brought to the mode of living. For that reason, home economics' subject content should also focus on those topics.

ICT resources have become important leaning tools today (Sánchez, Marcos, 2012). Accordingly, Estonian National Curriculum for Basic Schools states that, in addition to subject knowledge, pupils should be taught to use those resources. ICT related themes are embedded across the curriculum as a general competence and a cross-curricular topic called Technology and Innovation (National curriculum ..., 2014). For example, digital competence gives pupils the ability to use constantly



renewing digital technology for learning, communicating, finding and evaluating information, and participating in society through online engagement. Subject teachers are supposed to integrate and shape ICT related skills in everyday learning. It is expected that teachers know technological possibilities and apply them effectively in the teaching. Such expectation might prompt teachers to doubt their basic knowledge and change their action (King, 2002). However, the lack of digital competence and high expectations may also cause additional tension in teachers – bring confusion, discouragement and frustration (Pruulmann-Vengerfeldt, 2012).

Despite the investments aiming for successful implementation of ICT resources in the education, the anticipated results are not always achieved. A study carried out in Estonia on the use of ICT in various school subjects showed similarly to the study cited by C. Buabeng-Andoh (2012) that ICT finds the least usage in the classes that require creativity and practical skills – only 27 % in technology education, handicraft and home economics (Prei, 2013). Mere availability of digital tools in school is not sufficient for ICT to be used for the intended purpose in the learning process (King, 2002). Successful usage of technology in the classroom is related to the positive or negative attitudes of the teachers (Gibson, Stringer, 2014; Sabzian, Gilakjani, 2013).

The factors that affect teachers' understandings and judgments can be either personal, organisational or technical. Firstly, teachers find it important that chosen tools add value to teaching and learning. If teachers do not feel the necessity and benefits of technological tools, they probably do not integrate new ways of teaching (Li, 2007). Both M. Fullan (2012) and P. Luik (2010) emphasize that using ICT should not become an end in itself, but should essentially support pupils' learning. P. Ertmer, A. Ottenbreit-Leftwich (2012) and C. Buabeng-Andoh (2012) show that teachers are more likely to use ICT in their teaching when they are aware of its positive impact and benefits.

Secondly, innovative use of new technological resources is connected to teachers' teaching styles. Student-centred (constructivist) approach is directly related to successful utilization of digital technology (Ertmer, Ottenbreit-Leftwich, 2012). Educators who use teacher-centred approaches tend to use presentation software just to replace printed books, while student-centred instruction sees pupils as active information seekers and offers possibilities to combine different technological resources. Unfortunately, as M. Fullan (2012) brings out, teachers are strongly attached to the old instructional approaches and thus not open to new ways of conducting effective lessons.

Additionally, teachers mention the lack of ICT-related knowledge and skills (Ertmer, Ottenbreit-Leftwich, 2012; Prei, 2013) and fear caused by inexperience (Teo, 2008; Buabeng-Andoh, 2012; Sabzian, Gilakjani, 2013) as important influence in digital technology deployment. Little experience may also cause negative attitudes towards ICT because educators do not have enough knowledge to evaluate the efficiency. Although teachers' digital literacy is important for the successful implementation of ICT, it is not necessarily the basis of the effective use of technology in education (Fanni, Rega, 2013). Researchers bring out that the availability and the convenience of use of digital devices (Mathews, Guarino, 2000; Prei, 2012), educational technology support (Luik, 2010), and systemic management of change (Fullan, 2012) have important influence. However, teachers' works load (Buabeng-Andoh, 2012); sex (Teo, 2008) and lengths of service (Mathews, Guarino, 2000; Sánchez, Marcos, 2012) seem to have less effect.

It is apparent from the foregoing that the effective integration of modern technologies in education is a complex process that includes the existing material basis and teachers' positive attitudes and methodological skills. Although studies (Pruulmann-Vengerfeldt, 2012) provide insight into the use of ICT in Estonian schools it is still unknown what HHE teachers think and feel about the use of digital technology in the classroom. Therefore, **the aim** of the present study is to find out teachers' understandings of the possible use of ICT to promote the development of HHE subject related competencies.

## Methodology

The study follows qualitative research approach. Narrative writing data collection method was used to find out teachers' understandings. Our goal was to offer teachers a possibility to write a story about the use of ICT in their teaching practice. A web based environment was created where teachers could leave their replies. Teachers were asked to write about *their thoughts and experiences whether and how the*

*use of ICT promotes student learning in HHE lessons (including motivation, acquisition and reinforcement of subject related knowledge and skills, presenting one's work, reflection).* We aimed to highlight and emphasize the opinion and experience of teachers, value their knowledge and "voice" (Blake, Blake, 2012). It was anticipated that the gathered data supplements earlier quantitative studies conducted among teachers (Pruulmann-Vengerfeldt, 2012) by offering explanations and meanings.

The study was carried out in the autumn 2014. In the cover letter, teachers were asked to participate irrespective of their ICT usage. To understand whether and how the availability of digital equipment and the received training influence the understandings, teachers were asked to indicate these tools that they can use in their schools and give an overview of the ICT training they have received during last three years.

The call for survey participation was sent to the HHE teachers' mailing list and personally to 35 teachers. There were 26 respondents from 13 counties out of 15. 15 of the teachers worked in a town school and 11 in a rural school. Teachers' median length of service was 19 years. The longest and shortest length of service as HHE teacher was respectively 35 and 2 years.

To ensure respondents' anonymity, answers were numbered like this 1/14, 2/18. The first number indicates the sequence number of the respondent, and the second shows the length of service as HHE teacher. The initial reading of the main question revealed three clear understandings. The first, bigger group comprised of teachers who expressed a favourable mindset towards the use of ICT (n=21) and the second, remarkably smaller group was formed by the teachers who expressed disfavour (n=3). The content of the latter was not coded in further detail. The last group of the responses in which the mindset was difficult to evaluate (n=2) was left out of analysis.

The writings expressing favourable attitude were analysed using inductive coding and categories were created for the emerging themes (Shreier, 2013; Miles, Huberman, 1994). Each writing was considered as a whole. The categories were formed as continuation to the sentence "ICT in HHE learning as a tool for...". To enhance the credibility of the results, each researcher (n=3) read the texts several times and composed a preliminary list of categories. Coding was performed individually, and then the results were compared with each other. Revealed categories were largely similar. Single differences were analysed together and final framework was formed.

## Results and discussion

The analysis of the background information concentrated on the digital equipment and teachers' participation in ICT trainings. The answers show that the respondents' schools have provided the primary digital equipment to be used in the instruction. However, teachers' ideas and options are limited by the lack of the individual digital devices for students. The results confirm the study (Prei, 2013) conducted in Estonian general education schools, according to which other ICT tools are gaining popularity besides the PC, Internet and projector – for example, in the HHE classes, tablets, smart phones, digital cameras, document cameras. The respondents had participated in a wide variety of ICT trainings from word processing to subject specific courses. Nonetheless, in the context of current study, it is not clear how participation in trainings affects teachers' mindset towards ICT use. For example, a teacher who has not taken any courses over the last years describes how she uses videos to expand students' horizons.

Teachers' writings show that they do see the possibilities for ICT usage in the so called "skill subjects". However, instead of writing their thoughts and experiences whether and how the use of ICT in HHE lessons is beneficial to learning, teachers merely described the activities that can be done with the technological means, narrowing the topic to the selection and use of ICT tools. It appears that teachers are unable to see how ICT could promote the achievement of subject related competencies. Teachers who expressed favourable opinion reported the possibilities of using ICT (based on who uses the tool and what for) as follows: for teacher to illustrate the lessons (20), to simplify teacher's work (6), for teacher to create and organize study materials (5), for teacher to archive and share study materials (3), for student to present their work (15), for student motivation (11), student's source of information (9), student's learning environment (7), for student to carry out their task (8), for student to create content (5), for teacher and student communication (6).

Next, the results are discussed following the categories listed above. First, the overview of the use of ICT from teacher's point of view is given; then, as a tool for student, and last, as an option which brings together teachers and students. Educators use ICT to prepare and conduct their classes, and for the activities afterwards. Teachers see ICT mainly as a tool that facilitates illustrating HHE lessons. They mentioned activities such as presenting, showing or introducing study materials. Illustration has moved from the paper to the virtual environment and the demonstration of techniques from manual demonstration and pre-prepared examples to the "big screen".

*It is convenient to introduce a new topic with a slide presentation.* Teacher 8/35

*Document camera is a wonderful device for projecting new techniques on the big screen.* Teacher 6/18

*One can display pictures from the books or show handicraft techniques with the document camera on the big screen.* Teacher 9/24

Teachers use ICT as a tool that simplifies their work and helps to create versatile learning environment. For example, they mention easily editable templates for worksheets or presentations.

*I think it is a lot easier later, once the study material is generated electronically, tested in the classroom and the necessary additions or corrections made.* Teacher 25/2

*Lots of illustration, I could never prepare so many examples.* Teacher 15/16

When planning their classes, teachers use digital devices to create and systematize study materials. They do not only put together or prepare new matter, but also adapt what they find online to suit their needs.

Teacher 6/18: *"In addition to the preparation of study materials and presentations, it is good to organize and manage the collections of pictures and sewing patterns in the online environments."*

From the home economics perspective, teachers pointed out looking for, collecting and adapting the recipes. After teaching, teachers use digital tools to capture, archive and share the results of students' written and practical tasks. If previously the products were collected and stored for the annual exhibition, then modern technology allows new ways to present students' works. Teachers mention the compilation of online exhibitions or attending those on school, district, national or even international level.

Teachers' texts revealed that, compared to themselves, they see more versatile ways how students can use ICT tools. However, most examples are given of students using technological means to present their work.

*Pupils like to make their presentations in PowerPoint, take photographs of their work...* Teacher 18/35

*Students introduce their practical works and home economics research with the presentations.* Teacher 20/10

*The presentations of the projects cannot be performed without the PC, either. Previously taken digital photographs of the artefacts are added to the presentations.* Teacher 14/30

One of the teachers (6/18) brings out that using slide shows has a deeper meaning: *"Putting together slide shows has become an important part of HHE classes as it develops presentation skills."*

Several teachers see pupils using ICT to find motivation and collect ideas. Here, teachers highlight mainly online environments that bring together different media (e.g. Pinterest) where one can *"look for ideas for their work"* (Teacher 13/12). Teachers guide students to the websites related to subject field with the aim to *"put students' thought in motion"* (Teacher 25/2) and to *"stimulate interest in the topic"* (Teacher 20/10). In addition to searching for images, pupils look for ideas from the thematic videos online. Less are students guided to use ICT tools as the source of information to solve tasks in the classroom or at home.

*Pupils use internet to work independently: ... to look for food recipes in English and translate them.* (Teacher 13/12)

*It is very convenient to let pupils search for the necessary information; it is even possible to immediately find the answer to specific questions* (Teacher 22/10)

In addition to being pupils' source of information, some teachers see ICT as learning environment that promotes individual learning, where the family members can be a target group as well. Teacher 12/9:

„It is good to watch later the tutorials of difficult techniques on repeat, and the parents can also learn.” Plus, teachers bring out different websites where pupils can solve tasks independently, such as Garbage Wolf that teaches waste management or Ampser – a healthy eating meter for school kids.

In the HHE classes, students are mostly engaged with creative activities, the output of which is generally a practical item or product. Written work is less produced. Educators expressed that pupils can use ICT in HHE classes to make practical products, mainly by using electronic sewing and embroidery machine. Teacher 11/34: „We use 4D Embroidery program in the computer class. Every year, we have at least one work where they can use a self-generated embroidery.” Significantly less was mentioned the use of ICT to create and edit written work.

A few teachers give examples how students can use ICT to create content in the HHE subject. They mention writing blogs, using joint work tools and creating portfolios.

*Joint work tools are irreplaceable helpers in creative work projects.* Teacher 20/10

*Students keep the diaries of their work on blogs.* Teacher 10/34

*The possibility to create digital portfolio.* Teacher 15/16

The analysis of teachers' writings revealed that the only category bringing together two parties – the teacher and the student – is ICT as a tool for communication. Those who mentioned communication – though comparatively few – saw it in the direction teacher ↔ student and student ↔ student indicating their versatile and open approach to interaction process.

*I communicate with the pupils mainly via Facebook Messenger because they do not read their e-mail every day.* Teacher 11/34

*We were just summarizing our e-Twinning project with the Turkish students on the topic School Lunch. We communicated and exchanged videos on Facebook.* Teacher 18/35

*It provides an opportunity to give feedback... and get fast feedback from the teacher.* Teacher 2/18

In conclusion, it can be pointed out that teachers find “the ICT necessary”, because these tools “give new possibilities to deal with the subject matter thoroughly”, “promote” learning, “provide rich information sources for independent work” and help to make classes “more versatile”. “Without ICT tools one cannot teach today.” (Accordingly teacher 5/24, teacher 16/24, teacher 22/10, teacher 24/28, teacher 1/14, teacher 9/24.)

The results of the current study show that HHE teachers see digital technology as a part of everyday life and as the extension of the physical space (Nevejan, 2003) that they can apply in their daily work. Teachers emphasize that also in HHE it is important to keep up with the technological change (bring new technology in the classroom). Similarly to the problem indicated by C. Buabeng-Andoh (2012), Estonian HHE teachers, too, integrate ICT in rather limited and one-sided ways. Like in the results of E. Prei's study (2013) and what M. Hölttä (2014) has brought out, HHE teachers see the role of ICT above all as the facilitator of their own work and to generate interest in learners. The latter has important role in HHE classes and, therefore, the result – teachers presenting slide shows, pictures, videos and sounds – is anticipated. Making presentations gets a slightly wider meaning when teachers describe students' possibilities to introduce their work. A student who has created something with her own hands in the product development process wishes to share the result with others, to get support or recognition (Gauntlett, 2011). For that reason, the application of digital technology in so called “skill subjects” would be very suitable.

The results of current study do not answer the question how teachers see ICT's role in promoting learning. Teachers' responses reflect the concept of learning where the emphasis is on teaching and teachers. This may reflect teachers' relationship with the strongly rooted traditional ways of instruction where the role of supporting pupils' learning is significantly subordinate. The analysis of teachers' writings show that teachers use ICT in the subject lessons and they direct students to implement digital tools (e.g. presentation software). However, when it comes to the teachers' practices that promote the formation of digital competence in students (and the new ways of thinking and acting) there is still room for improvement. According to the National Curriculum (National curriculum..., 2014), the digitally competent learner can create content (texts, photographs and multimedia) and use digital tools in the problem solving. Plus, it means awareness of the dangers of digital environments, and the ability to

protect one's privacy, personal data and virtual identity, and adherence to the same behaviour code as in everyday life.

The limited or no use of ICT may be the result of teachers' insufficient digital pedagogical skills to use such tools on educational purposes (King, 2002). Teachers need to learn and practice the integration of ICT to achieve the learning objectives so that the use of new technology will not become an end in itself (Luik, 2010; Fullan, 2012). Educators have acquired the basic skills to use digital tools (e.g. creating and organizing worksheets, archiving and sharing study materials), but now there is a need for more specific ICT skills. The respondents indicated their desire to become more professional by participating in further training courses and they expressed favourable mindset towards new digital technologies. This shows HHE teachers' need for subject related methodological ICT training.

Promoting either the establishment of teachers' communities where teachers could share good practices and innovative educational materials or the active participation in the existing ones, is one way to upgrade teaching staff's pedagogical skills. The examples of learning tasks that have been tested in classroom give ideas and help provide a fresh outlook on the possibilities of ICT. New methodological knowledge and experience gained from the trainings and teacher communities can turn educators to re-evaluate their current practices or change their non-favourable mind-set (Rogers, 2003). The implementation of ICT resources requires multiway action, only then can digital tools, instead of being a modern instrument, become means to create student-centred learning environment.

Some teachers see the wide variety of examples offered by the virtual world as possible factors hindering pupils' creativity. However, the aim of HHE education today – on the one hand, to preserve the traditions, and on the other, to prepare students to cope in an ever-changing world – should not be forgotten. For example, it is not possible to teach in detail all the knowledge and skills needed in human life in home economics classes. Therefore, it is important to direct the instruction so that the pupils learn to guide their own actions (Hölttä, 2014) and look for the necessary knowledge. Self-directed learner needs comprehensive – including social – support.

The deliberate use of ICT in student-centred teaching could become a place where learning and collaborative activity meet in interaction. For pupils, one such possibility in HHE subject would be the chance to show the results of one's creative work through web-based collaborative content creation to a broader public (Karppinen, 2008). Different communities and sharing one's thoughts online (keeping a blog) offer chances to present individual or jointly made work to a wider community. Thereby gained positive comments motivate the students' further action and learning. At the same time, the student becomes a social human being who participates in cultural development and wants to face challenges also later in life (Karppinen, 2008). Most likely, such communities will slowly play an increasing role in pupils' development and lifelong learning.

## Conclusions

In summary, it can be argued that Estonian HHE teachers' mindsets towards the use of ICT depend on teachers' understandings of the subject's learning objectives. Since practical activities and outcomes play a major role and, therefore, illustration has an important function in this subject, teachers mostly see digital technology as a helping tool for the latter.

The teachers who participated in the study expressed favourable attitude towards the integration of ICT in teaching, but their writings showed lack of digital pedagogical skills and inability to apply modern technologies in student-centred instruction. The main objection of those who expressed unfavourable mentality was related to the use of helping materials present in the virtual environment. Teachers expressed concern that those materials suppress pupils' creativity. Since students use independently the opportunities offered by digital environment on the daily basis handicraft and home economics should also aim to provide students with skills to operate in today's information overload. The further goal should be, instead of imitating the existing ideas, to use them as the source of inspiration and suitable solutions.

## Bibliography

1. Blake R.W.J., Blake B.E. (2012). Introduction: What are Narratives and Why Use them in Teacher Education? In R.W. Blake R.W., Blake J.B.E. (Eds.). *Becoming a Teacher: Using Narrative as Reflective Practice: a Cross-disciplinary Approach*. New York: Peter Lang, pp. 1 – 11.
2. Buabeng-Andoh C. (2012). Factors Influencing Teachers' Adoption and Integration of Information and Communication Technology into Teaching: a Review of the Literature. *International Journal of Education and Development using Information and Communication Technology*, Vol. 8 (1), pp. 136 – 155.
3. Ertmer P., Ottenbreit-Leftwich A., Sadik O., Sendurur E., Sendurur P. (2012). Teacher Beliefs and Technology Integration Practices: a Critical Relationship. *Computers and Education*, Vol. 59 (2), pp. 423 – 435.
4. Fanni F., Rega I., Cantoni L. (2013). Using Self-efficacy to Measure Primary School Teachers' Perception of ICT: Results from Two Studies. *International Journal of Education and Development using Information and Communication Technology*, Vol. 9 (1), pp. 100 – 111.
5. Fullan M. (2012). *Stratosphere: Integrating Technology, Pedagogy, and Change Knowledge*. Toronto: Pearson.
6. Gauntlett D. (2011). *Making is Connecting. The social meaning of creativity, from DIY and knitting to YouTube and Web 2.0*. Cambridge: Polity Press.
7. Gibson P.A., Stringer K., Cotten S.R., Simoni Z., O'Neal L.J., Howell-Moroney M. (2014). Changing Teachers, Changing Students? The Impact of a Teacher-focused Intervention on Students' Computer Usage, Attitudes, and Anxiety. *Computers & Education*, Vol. 71, pp. 165 – 174.
8. Hölttä M. (2014). Tieto- ja viestintäteknikka kotitalousopetuksessa. (Information and Communication Technologies in Teaching Household). In H. Kuusisaari, L. Käyhkö (Eds.), *Tutki, kehitä, kehity: Kotitalous yhteiskunnallisena oppiaineena*, Helsinki: BoD - Books on Demand, lk. 67 – 78. (in Finnish)
9. Karppinen S. (2006). Loovad käed, loov meel (Creative Hands, Creative Mind). Visanti M.L., Järnefelt H., Bäckmann P., Sinko P. (Eds.). *Loovuspedagoogika*. Tallinn: MTÜ Eesti Tehnoloogiakasvatuse Liit, pp. 36 – 39. (in Estonian)
10. Karppinen S. (2008). Craft-art as a Basis for Human Activity. *International Journal of Art & Design Education*, Vol. 27 (1), pp. 83 – 90.
11. King P. K. (2002). Educational Technology Professional Development as Transformative Learning Opportunities. *Computers & Education*, Vol. 39, pp. 283 – 297.
12. Kojonkoski-Rännäli S. (1995). *Ajatus käsissämme. Käsityön käsitteen merkityssisällön analyysi* (The Thought in our Hands. An Analysis of the Meaning of the Concept of Handicraft). Turku: University of Turku, (in Finnish)
13. Li Q. (2007). Student and Teacher Views about Technology: a Tale of Two Cities? *Journal of Research on Technology in Education*, Vol. 39, pp. 377 – 397.
14. Lind E., Pappel K., Paas K., Ojaste A. (2007). Käsitööpe üldhariduskoolis (Handicraft Education in Comprehensive School). *Haridus*, Vol. 11-12, pp. 33 – 37. (in Estonian)
15. Lind E. (2009). Studying and Teaching Craft: Possibility and Necessity. In Kaukinen L.K. (Ed.). *Proceedings of the Crafticulation and Education Conference*. Helsinki: NordFo, pp. 206 – 212.
16. Luik P. (2010). Kas Eesti kool on valmis õpilaste sülearvutite kasutuseks? (Is Estonian School Ready for the Students' Laptop Use?) *Haridus*, Vol. 1, pp. 18–21. (in Estonian)
17. Mathews J.G., Guarino A.J. (2000). Predicting Teacher Computer Use: a Path Analysis. *International Journal of Instructional Media*, Vol. 27(4), pp. 385 – 392.
18. Miles M. B., Huberman A. M. (1994). *Qualitative Data Analysis*. Thousand Oaks: Sage Publication.
19. *National curriculum for basic schools*. (2014). Tallinn: Ministry of Education and Research. [online] [01.11.2016]. Available at:  
[https://www.hm.ee/sites/default/files/est\\_basic\\_school\\_nat\\_cur\\_2014\\_general\\_part\\_1.pdf](https://www.hm.ee/sites/default/files/est_basic_school_nat_cur_2014_general_part_1.pdf)
20. Nevejan C. (2003) Integrated learning environments. In M. Tokoro, L. Steel (Eds.). *The Future of Learning*. Paris: IOS Press, pp. 33 – 49.
21. Pöllänen S. (2009). Contextualizing Craft: Pedagogical Model for Craft Education. *International Journal of Art & Design Education*, Vol. 28 (3), pp. 249 – 260.

22. Prei E. (Ed.). (2013). *IKT vahendite kasutusaktiivsus Eesti üldhariduskoolides* (The Activity of Using ICT Tools in Estonian Comprehensive Schools). Tallinn: Tiigrihüppe Sihtasutus. [online] [26.10.2016]. Available at: [https://www.innovatsioonikeskus.ee/sites/default/files/tekstifailid/Sihtgrupi\\_kysitus\\_2012\\_2.pdf](https://www.innovatsioonikeskus.ee/sites/default/files/tekstifailid/Sihtgrupi_kysitus_2012_2.pdf) (in Estonian)
23. Pruulmann-Vengerfeldt P. (Ed.). (2012). *Õpetajate IKT kasutusaktiivsuse mõju õpilaste tehnoloogia teadlikule kasutuskusele II vahearuanne* (The Effect of Teachers' Usage of ICT on the Students' Conscious Use of Technology. Interim report II) [online] [06.10.2016]. Available at: [https://www.innovatsioonikeskus.ee/sites/default/files/tekstifailid/IKT\\_kasutusaktiivsuse\\_moju\\_I\\_II\\_vahearuanne2012.pdf](https://www.innovatsioonikeskus.ee/sites/default/files/tekstifailid/IKT_kasutusaktiivsuse_moju_I_II_vahearuanne2012.pdf) (in Estonian)
24. Rogers E. M. (2003). *Diffusion of Innovations* (5th ed.). New York: Free Press.
25. Sabzian F., Gilakjani A.P. (2013). Teachers' Attitudes about Computer Technology Training, Professional Development, Integration, Experience, Anxiety, and Literacy in English Language Teaching and Learning. *International Journal of Applied Science and Technology*, Vol. 3 (1), pp. 67 – 75.
26. Sánchez A.B., Marcos J.J.M., González M., GuanLin, H. (2012). In Service Teachers' Attitudes Towards the Use of ICT in the Classroom. *Procedia - Social and Behavioral Sciences*, Vol. 46, pp. 1358 – 1364.
27. Shreier M. (2013). *Qualitative content analysis in practice*. Los Angeles: Sage Publishing.
28. Teo T. (2008). Pre-service Teachers' Attitudes Towards Computer Use: a Singapore Survey. *Australasian Journal of Educational Technology*, Vol. 24 (4), pp. 413 – 424.



## Preparation of Technology Education Teacher in Lithuania, Finland and Great Britain

**Birutė Žygaitienė**<sup>1</sup> Dr. paed.; **Evelina Buivydaite**<sup>2</sup> BA  
Lithuanian University of Educational Sciences, Lithuania<sup>1,2</sup>  
[birute.zygaitiene@leu.lt](mailto:birute.zygaitiene@leu.lt)<sup>1</sup>; [evelina.buivydaite@leu.lt](mailto:evelina.buivydaite@leu.lt)<sup>2</sup>

**Abstract:** Under conditions of rapid technological, information, economic, cultural and social changes in the 21<sup>st</sup> century, there emerges a problem of identifying what kind of teachers should be trained for future generations, what curricular of the study subjects of Technology/Home Economics /Design and Technologies should be implemented in schools of general education to enhance school students' motivation to learn and to obtain generic and technological competences. In various countries different traditions of training teachers of Technologies/Home Economics/Design and Technologies have been established following the traditions and needs of every country. Employing the methods of analysis and meta-analysis of scientific resources and documents, the article focuses on pedagogical study programmes of Technologies/Home Economics /Design and Technologies as well as on similarities and differences in their curricular. Seeking to employ the good experience in teacher training accumulated in foreign countries, the aims and learning outcomes of the study programmes implemented in Lithuania, Finland and Great Britain are analysed, the volumes of the study subjects of Nutrition, Textile, Constructive Materials, Electronics, Design; the study subjects of Pedagogy and Psychology; Research Activities and Graduation Paper Preparation; Sustainable Development and Consumption Culture are compared.

**Keywords:** technologies, home economics, design and technologies, study programme, university education.

### Introduction

Under conditions of rapid technological, information, economic, cultural and social changes in the 21<sup>st</sup> century, technological education that embraces preparation of an individual for life in a constantly changing environment has acquired an increasing significance. Possibilities of solving social, economic and ecological problems, perspectives of development of future technologies as well as successful adaptation opportunities in the labour market, skills to live in the family and society are developed through technological education of young people in the European countries. Technological competency is significant not only seeking a successful foothold in the labour market but also in other areas of human life, which embrace a wide range of activities from daily routine to making decisions important to the individual's personal life, the quality of environment and the society (Švietimo kokybė, 2013; Pendergast, McGregor, 2012).

Technological competency is developed following not only European strategical progress and educational documents but also those of Lithuania, Great Britain and Finland. The Europe 2020 Strategy (Europe 2020..., 2012) provides for a progressive, sustainable and integrated growth of European countries. The global development until 2020 should embrace ten main trends that initiate changes in the society and in education. According to D. Pendergast, S.L.T. McGregor, K. Turkki (2012), these trends include ageing, globalisation, technological development, welfare, individualisation, commerce, health and environment, haste, Internet system and urbanisation. Technological education, responding to the priorities of smart society enlisted in the Europe 2020 Strategy (Europe 2020..., 2012) and the Lithuanian Progress Strategy "Lithuania 2030" (Lietuvos pažangos..., 2012), should focus on the promotion of lifelong learning, enhancement of public spirit and collaboration, creation, dissemination and employment of creativity, entrepreneurship and leadership, knowledge, promotion of health and protection of natural environment. The Strategic Programme of the Finnish Government envisages that by 2025 the country will have become an inventive, responsible and safe country, where each resident will feel important, and confidence will serve as foundation of society (Finland, a land..., 2015).

Under conditions of continuous change, technological education may be determined as a combination of human development, social responsibility, healthy lifestyle, sustainable resource use and cultural variety, which intensively encourages achievements in various achievements. Technological education may be used as a means of training efficient technology specialists (Pendergast, McGregor, 2012). The future of technologies is closely related to the future of society and the world. To retain the importance of technologies in the future, it is suggested concentrating on attractiveness, creation of sustainable

society that grounds its activities on protecting the environment for future generations, ensuring economic safety, peace and justice (McGregor, 2015).

The aim of the article is to compare the teacher training study programmes of Technologies/Home Economics/Design and Technologies in Lithuania, Finland and Great Britain and to find out similarities and differences in their curriculars.

### **Methodology**

Following the data obtained from the analysis of strategical documents, scientific sources, general curricular of general schools and study programmes, the article analysis the content of study programmes of Technologies, Home Economics, Design and Technologies. The study programme of Technology Teacher Education implemented in Lithuanian University of Educational Sciences, the study programme training teachers of Home Economics in the University of Helsinki in Finland and the study programme that trains teachers of Design and Technologies in the University of Brighton in the United Kingdom (UK) were selected for the analysis because the official websites of the aforementioned higher education institutions present the most comprehensive descriptions of the study programmes. Seeking to more comprehensively analyse the content of the teaching practice in the study programme of Home Economics, the study programme of Home Economics implemented in the University of Eastern Finland was additionally chosen, which is similar to the one realised in the University of Helsinki.

### **Results and discussion**

#### *The aims of the study programmes*

The traditions of teacher education in Lithuania, Finland and Great Britain are different. The training of teachers of Technologies/Home Economics/Design and Technologies is organised according to the programmes where of content embraces teaching/learning of nutrition, textile, constructive materials, electronics and design. A teacher of Technologies/Home Economics, who is able to carry out high quality work in general education schools, is prepared during 4-year Bachelor study programmes in Lithuania and Finland. Individuals with higher educational background may obtain the qualification of design and technology teacher in Great Britain having completed a 2-year pedagogical study programme of Design and Technologies.

A competent teacher is an individual, who is able to comprehensively implement the goals set for education of a specific subject in his/her country, which meet the national conceptions of technologies, design and technologies or home economics. The Lithuanian Progress Strategy "Lithuania 2030" (Lietuvos pažangos..., 2012) which addresses the priorities outlined in the Europe 2020 Strategy (The Europe's Economic..., 2010) aims to encourage essential social changes, to establish conditions for building up of a responsible, creative and open personality. The Strategy prioritises the following goals: smart society, smart economy and smart management. One of the priorities of smart society is Lithuania, where everybody is able to learn, create and conduct research and to act in a targeted way. Currently, the most considerable attention in Lithuania is allocated to education of a competent technology teacher, who satisfies the needs of society (The Self-Assessment..., 2013).

In Finland a specialist in Home Economics is a leader, who follows the principles of sustainability, responsible consumption and transfer of constant social innovations (Turkki, 2008). S.L.T. McGregor (2015) presents a holistic attitude towards home economics in the process of education. The two areas, where home economics is able to initiate and implement certain changes, are health and sustainability. Various measures have to be applied seeking to improve the health of consumers, families and communities, to ensure social, economic and ecological sustainability. A similar conception and goals are highlighted in the National Curriculum of Home Economics in Basic Education (Health Education..., 2004). The National Curricular of Home Economics for 7th – 9th Forms comply with the goal of home economics to develop communication abilities, adoption of information and skills of practical work, which are necessary in everyday life, and to teach to apply them in daily situations. The task assigned to teachers of Home Economics is to supervise school learners assuming responsibility for own health, relations with other people, finances striving for convenience and safety in the approximate environment (Health Education..., 2004; Pendergast, McGregor, 2012; Autio, Soobik, 2015).

In Great Britain a teacher is characterised as honest and responsible, well-aware of the taught study subject and regularly updating own subject-related knowledge and skills, able to establish positive professional relations and in cooperation with parents to take care of school learners' interests and satisfaction of their needs (Teachers' Standards, 2011).

Enhancement of sustainable development and consumer culture skills is provided for in training of technology and home economics teachers and future design and technology teachers study the aforementioned aspects integrated into other study subjects. In the study process Technologies and Home Economics teachers address global problems, whereof understanding and evaluation skills contribute to solving such problems (Pendergast, McGregor, 2012).

The goals of the analysed study programmes are in line with the goals of general education curricular. The general education curricular of Technologies, Home Economics, Design and Technologies state that it is necessary to educate a learner, who perceives constant changes in technologies and is able to adapt under conditions of such changes, possesses an established system of values and acts in accordance with it ensuring welfare of an individual and society. The goals of the general curricular of the three countries have a common feature that preparation for family life, ability to take care of household environment and family well-being, development of responsible consumer skills are based on practical activities, collaboration and solving of daily life environment-related problems. The general curricular of Design and Technologies are similar in the following: analysis of information and analogues and their application conducting projecting and production activities, development of learners' critical thinking analysing and evaluating creative ideas and products. The general curricular of Home Economics have close links with general curricular of Technologies as both programmes aim to educate an individual, who is interested in ethnic culture, national crafts, spread of business and traditions in the multicultural environment.

#### *The main modules of the study subject of the study programmes*

The content of the study programmes of Technologies, Home Economics, Design and Technologies consist of 5 modules that embrace subject-related knowledge and skills: nutrition, textile, constructive materials, electronics and design. The structure of the study programmes is closely associated with the content of general curricular and not all the 5 modules are taught in all the analysed study programmes (Figure 1).

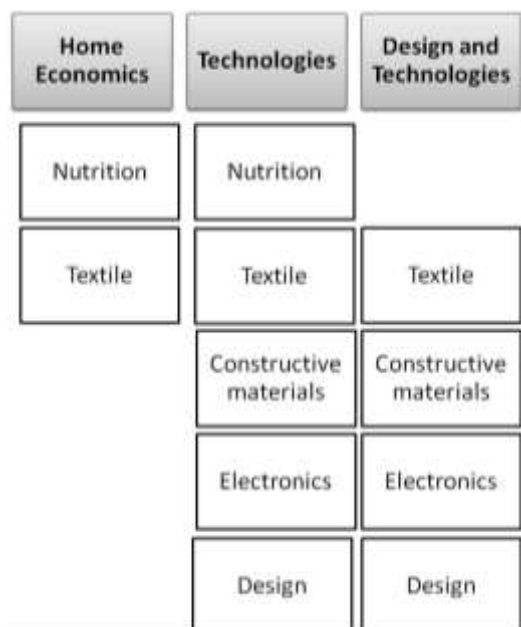


Figure1. The main modules of the study subject of the study programmes.

The study programme of Home Economics implemented in Finland allocates the most considerable attention to teaching/learning nutrition. The content of the study programme embraces teaching of nutrition and choice of food, local and international food cultures, consumer development and education, family and environmental protection education. Students learn the following subjects: The Main Skills of Food

Preparation, Food Quality and Safety, Phenomenon of Food Preparation and its Application, Finish Food Culture, Basics of Nutrition, Nutritional Science, Food Choice and Eating Habits, Nutrition at School, Teaching Nutrition and Food Culture for Advanced (Home economics..., 2016). Similar study subjects are learnt by prospective Technologies teachers in Lithuania. Students study Nutrition, Physiology and Hygiene, Food Technologies and their Didactics, National Food Cultures, Basics of World Food Cultures (The Self-Assessment..., 2013). The study programme of Design and Technologies does not include teaching/learning of nutrition because the study programme focuses on teaching/learning of design, electronics, constructive materials and textile (Design and Technology, 2016).

The comparison of the content of the three study programmes reveals that the most considerable volume of textile study subjects is observed in the study programme of Technology Education. Students learn the following study subjects: Ethnic Culture, Textile Technologies, Technologies of Interior Sewing Works, Technologies of Simple Construction Clothing, Technologies of Bottom and Top Clothing (The Self-Assessment..., 2013). The study programme of Design and Technologies does not highlight separate study subjects but it indicates that a student enrolled in the university has a choice of elective course of textile (Design and Technology, 2016). The study subjects are not separately assigned to textile learning and studies of traditional textile technologies in the study programme of Home Economics but students learn textile services (Home economics..., 2016).

The studies of constructive materials are foreseen in the study programmes of Design and Technologies as well as Technology Education, whereas home economics teachers do not study constructive materials at all. The students of Technology Education learn the study subject of Constructive Materials for three semesters and they are also provided with a choice of eco-creation and metal plastics (The Self-Assessment..., 2013). Prospective teachers, learning in the study programme of Design and Technologies, have the opportunity to choose a certain area of constructive materials but before making such a choice they have to gain experience in working with the main constructive materials (plastic and wood), to master technologies of hot and cold metalworking in furnace, soldering in fireplaces and enamelling in furnaces. Having acquired the basics of constructive materials, a student penetrates into one area and teaches one chosen aspect of constructive materials in the school (Design and Technology, 2016).

The study subjects of Electronics are most comprehensively penetrated into by future teachers of Design and Technologies. Electronics is taught/ learnt together with the study subjects of Communicative Technologies. Students of Design and Technologies are able to choose an area of electronic and communicative systems, which includes not only work with various computer-aided design programmes but also that with equipment for robot management. The study programme of Design and Technologies provides for the necessity of a student to learn to work with production software (Design and Technology, 2016). The students of the study programme of Technology Education learn the study subjects of Electronics (applied electronics and robotics) that are close to those of Design and Technologies (The Self-Assessment..., 2013). The studies in Home Economics do not include Electronics-related study subjects.

The study subjects of Design are most comprehensively studied by future teachers of Design and Technologies because the analysis of design topics and practical skill development are integrated into the majority of study subjects. The subject-related studies embrace the Design and Technology competences acquired by students earlier as well as design and technology skills, knowledge and understanding developed during their studies in the context of secondary education (Design and Technology, 2016). The fundamentals of design in the study programme of Technology Education are obtained in the study subjects of Design History, History of Applied Arts, Design and Arts Technologies, a number of design aspects are integrated into the study subjects of Textile, Nutrition, Electronics, Constructive Materials (The Self-Assessment..., 2013). The analysis of the study programme that trains teachers of Home Economics reveals that separate study subjects of basics of design are not taught and the possible integration of design into other study subjects is not observed.

#### *Preparation for teaching work*

Considerable attention is allocated to the study subjects of Pedagogy and Psychology. The studies consist of theoretical studies at University and the teaching practice at school. Students of Technology Education learn the following study subjects: General and Developmental Psychology, Pedagogy, Philosophy of Education, Educational and Special Psychology, Systems of Education and Special

Pedagogy and History of Lithuanian State and Culture (The Self-Assessment..., 2013). The themes of pedagogical and psychological that are close to teaching activity are distinguished in the study programme of Home Economics, which include the following study subjects: Development and Learning Psychology, Teaching Skills and Basics of Learning, Trends in Teaching and Learning, Community Interaction, Evaluation of Learning, Elective Study Subject on Education, Social Challenges in Teacher's Work, Skills of Teaching and Learning (Home economics..., 2016). The study subjects are not enlisted in the study programme of Design and Technologies but the topics of studies are determined: a number of study subjects assigned to a group of educational studies, which facilitate student's comprehensive understanding of the process of teaching/learning, to understand and critically evaluate individual differences of the participants in the process of education (Design and..., 2016). Training teachers of technologies in Lithuania "The Description of the Group of Study Fields of Education Studies" (Švietimo ir ugdymo..., 2015) prepared by the Minister of Education of Science is followed. It provides for the Final Work of Pedagogical Studies that integrates theory and practice and completes the pedagogical studies in the study programme. Consolidation of pedagogical knowledge and skills of students in design and technologies and home economics is not finalised with writing a graduation paper or with another form of assessment.

The training of future teachers of Technologies is based on students' practical teaching activity at school. The responsibly planned content of the teaching practice enables students to learn to combine theoretical and practical knowledge and to apply it in the process of teaching. During the teaching practice students get opportunities to identify own attitudes, beliefs and values. The students start developing skills that are significant working with learners of various learning needs. According to the recommendations of European Agency for Development in Special Needs Education (Mokytojų rengimas..., 2011), seeking quality preparation of students for work following the principles of inclusive education, it is necessary to create conditions for university teachers, school practice supervisors to professionally develop in the area.

A student studying in Finland should learn not only topics related to the study subject he or she majors in but also those of other study subjects of general education as well as interdisciplinary themes. More comprehensive studies allow developing professional competencies, which are necessary working in general education school and teaching any study subject, including Home Economics. Pedagogical studies focus on didactic studies of educational science, which embrace the teaching practice in general education institutions. According to P. Sahlberg (2012), approximately one third of the volume of studies is assigned to the teaching practice at school. Students are entitled to the basic, advanced and final practices in the analysed study programme. During their practice students observe the work of experienced teachers (the basic practice), conduct their practice under supervision of the mentor (the advanced practice) and independently deliver lessons to school students from different age groups (the final practice). The Finnish Ministry of Education and Culture (Government Decree..., 2004) emphasises that the teaching practice is conducted in general education school governed by the university or in any other educational institutions assigned by the university. The training of subject teacher embraces the studies of a specific study subject that are made up of the basic, interim and advanced studies.

During their studies future teachers of Design and Technologies complete their teaching practice to obtain experience in working with different children: learners from various environments or of different age and experience. The practice aims not only to enable students to obtain knowledge of training and upbringing but also to facilitate building up of an attitude towards teaching, school organisation and management (Initial Teacher..., 2012). The Bachelor full-time and part-time study programmes focus on pedagogical studies rather on the studies of separate study subjects. Bachelor programme students spend half of their study time in the institutions of teaching practice. The rest of the time is allotted to learning the specifics of the major subject and the study subjects of pedagogy, psychology and educational science. During their teaching practice students work under supervision of the mentor or independently complete assignments (deliver lessons, communicate with school learners and learn "to manage" the class). J. MacBeath (2012) states that the teaching practice should be evaluated in collaboration of a student, the mentor and a responsible higher education teacher. Such evaluation allows to envisage opportunities for improvement and to plan further teaching activities of a student.

All the study programmes state that they aim at education and development of a student, who answers the needs of general education schools, and the purpose of the teaching practice is to facilitate acquisition of professional competences and experience that are necessary for practical teaching. The analysis of

the study programmes revealed that different proportions of teaching practices prevail in them: the teaching practice is the longest in the study programme of Design and Technologies (approximately half of the duration of studies is allocated to the teaching practice), about 30 % of the volume is assigned to the teaching practice in the study programme of Home Economics and 13 % - in the study programme of Technology Education. The structures of teaching practice are analogous in all the three countries: the observational and assisting practice, the practice under supervision of mentor and the independent teaching practice. The observational practice is integrated into the practice of teacher assistant in the study programme of Technology Education. The teaching practice in the study programme of Home Economics consists of introduction to teaching practice and the main practice. In each country the structure of the practice and assignments are similar: during their teaching practice they fill in their achievement portfolio, reflect and analyse own activities and complete assignments appointed by their universities.

### *Development of research competency*

A teacher, who possesses basics (knowledge, skills) of scientific research and is able to choose methods and apply them while teaching/learning, is trained in higher education institutions. The research-based teaching aims to develop students' research competency, which could be applied teaching or making decisions. According to the researchers (Evagorou, Dillon, 2015; Tryggvason, 2009), teachers have to be aware of the latest research and methods to conduct it, therefore it is important to train teachers, who are able to ground own pedagogical solutions on practical research-based arguments. Learning only to repeat teaching, evaluation and other methods learnt from colleagues not only prevents students from critical thinking about pedagogical processes but also does not develop professionals in them. According to the insights of G. Hilton (2012), a teacher has to constantly evaluate own activity and improve because school learners do not need a teacher, who is not able to learn lifelong. Pedagogy cannot be based solely on experience and routine.

Students acquire the theoretical fundamentals and practical skills of research activities studying in the study programmes of Technology Education and Home Economics. Future Technology teachers learn Methods of Research Paper Writing and Diagnostics, Statistical Analysis in Educational Science, Analysis of Educational Research Data (The Self-Assessment..., 2013). Students of Home Economics penetrate into the study subjects of Criteria of Educational Research, Methods of Education Research and Research Methods (Home economics..., 2016). On the basis of the study subject titles, it can be assumed that both study programmes focus on basics of educational research embracing research methods and criteria as well as data analysis. The research conducted by P. Sahlberg (2012) revealed that research-based teaching is broadly applied in Finland. It aims to form teachers' pedagogical thinking, ability to reason own choices and become an integral part of scientific educational community. The study programme of Design and Technologies does not provide for separate study subjects for development of student's research competency (Design and..., 2016). Following "Teachers' Standards" (Teachers' Standards, 2011), it can be presumed that it is not necessary to assign separate study subjects for development of research abilities as the Standards do not envisage the ability of a teacher to analyse scientific literature, to identify the research problem, to organise the research and to interpret results. In Lithuania a teacher of Technologies has to acquire research competency because Article 44.3 of "The Description of the Group of Study Fields of Education (V-1264)" (Švietimo ir ugdymo..., 2015) issued by the Ministry of Education and Science states that a teacher "... is able to find and analyse scientific and information sources on education and training, to envisage the research problem in sources and (or) educational practice, to make a targeted choice research strategies and research methods, to collect and process research data, to analyse research results and formulate conclusions...".

After completion of the study programme, students have to write and defend the Bachelor thesis. Teachers of Technologies and Home Economics finalise their studies with the graduation paper (The Self-Assessment..., 2013; Home economics..., 2016), the study programme of Design and Technologies does not provide for a separate graduation work, the studies focus on quality implementation of pedagogical study subjects, including the teaching practice (Design and..., 2016).

## Conclusions

Teachers, who meet the needs of general education schools, are trained in the study programmes of different duration in the countries with different experience accumulated in training of technology teachers: teachers of Technologies and Home Economics are trained in four years in Lithuania and Finland, while teachers of Design and Technologies study for two years in Great Britain.

The general education curricular of Technologies, Home Economics, Design and Technologies emphasise the necessity to develop school students' social skills, which facilitate successful organisation of their personal life and adaptation in the society developing in the state of constant change. The general curricular of Technologies and Design and Technologies are oriented to implementation of designing and production activities and development of critical thinking of school students, whereas general curricular of Home Economics are closely linked to general curricular of Technologies since both curricular target at development of an individual, who is interested in ethnic cultural traditions and their spread in the multicultural environment.

All the study programmes require a future teacher of Technologies/Home Economics/Design and Technologies to study textile-related study subjects, teachers of technologies and home economics penetrate into nutrition aspects, teachers of technologies and design and technologies analyse constructive materials, electronics and design. The study areas defined in the study programmes comply with school students' learning areas provided for in general curricular.

The research abilities of future teachers and their importance in practical teaching activity are particularly emphasised in Lithuania and Finland, while the teacher's ability to conduct research is not foreseen in Great Britain.

## Bibliography

1. Autio O., Soobik M., Brynjar, O. (2015). The Development of Craft and Technology Education Curriculums and Students' Attitudes towards Technology in Finland, Estonia and Iceland. *International Journal of Contemporary Educational Research*, Vol. 2 (1), pp. 22 – 34.
2. *Design and Technology (Secondary) PGCE (PROFGCE)*. (2016). Study programme description. UK: University of Brighton.
3. *Europe 2020: Europe's Growth Strategy*. (2012). European Commission. [online] [11.06.2016]. Available at [http://ec.europa.eu/europe2020/pdf/europe\\_2020\\_explained.pdf](http://ec.europa.eu/europe2020/pdf/europe_2020_explained.pdf)
4. Evagorou M., Dillon J., Albe, V. (2015). Pre-service Science Teacher Preparation in Europe: Comparing Pre-service Teacher Preparation Programs in England, France, Finland and Cyprus. *The Association for Science Teacher Education*, Vol. 26 (1), pp. 99 – 115.
5. *Finland, a Land of Solutions: Strategic Programme of Prime Minister Juha Sipilä's Government*. (2015). Finland: Prime Minister' Office. [online] [14.08.2016]. Available at [http://valtioneuvosto.fi/documents/10184/1427398/Ratkaisujen+Suomi\\_en\\_yhdistetty\\_netti.pdf/8d2e1a66-e24a-4073-8303-ee3127fbfcac](http://valtioneuvosto.fi/documents/10184/1427398/Ratkaisujen+Suomi_en_yhdistetty_netti.pdf/8d2e1a66-e24a-4073-8303-ee3127fbfcac)
6. *Government Decree on University Degrees*. (2004). Finnish Ministry of Education and Culture. [online] [08.05.2016]. Available at <http://www.finlex.fi/en/laki/kaannokset/2004/en20040794.pdf>
7. Health Education. (2004). *Finland National Curriculum*. [online] [16.03.2016]. Available at [http://www.oph.fi/download/47673\\_core\\_curricula\\_basic\\_education\\_4.pdf](http://www.oph.fi/download/47673_core_curricula_basic_education_4.pdf)
8. Hilton G. (2012). Changing Policies Changing Times: Teacher Education in England (or throwing the baby out with the bathwater). *Acta Pedagogica Vilnensia*, Vol. 28, pp. 62 – 72.
9. *Home Economics and Home Economics Teacher Education*. (2016). Helsinki: University of Helsinki. [online] [03.06.2016]. Available at <http://www.helsinki.fi/teachereducation/education/homeeconomics/studies.html>
10. *Initial Teacher Training Criteria and Supporting Advice: Information for Accredited Initial Teacher Training Providers*. (2012). England: Department for Education. [online] [08.05.2016]. Available at <https://www.gov.uk/government/publications/initial-teacher-training-criteria>
11. *Lietuvos pažangos strategija „Lietuva 2030“ (The National Progress Strategy “Lithuania 2030”)*. (2012). [online] [25.09.2016]. Available at <https://www.lietuva2030.lt> (in Lithuanian)
12. MacBeath J. (2012). Teacher Training, Education or Learning by Doing in the UK. In *Teacher Education around the World: Changing Policies and Practices*. London, New York: Routledge, pp. 66 – 80.



13. McGregor S.L.T. (2015). The Future of Family and Consumer Sciences (FCS) and Home Economics: An International and Intergenerational Vignette Journal. *Journal of Family & Consumer Sciences*, Vol. 107 (3), pp. 9 – 17.
14. *Mokytojų rengimas inkluziniam ugdymui Europoje: iššūkiai ir galimybės (Teacher Education for Inclusion across Europe – Challenges and Opportunities)*. (2011). Briuselis: Europos specialiojo ugdymo plėtros agentūra. (in Lithuanian)
15. Pendergast D., McGregor S.L.T., Turkki K. (2012). *Creating Home Economics Futures: The Next 100 years*. Sydney: Australian Academic Press.
16. Sahlberg P. (2012). The Most Wanted: Teachers and Teacher Education in Finland. In *Teacher Education around the World: Changing Policies and Practices*. London, New York: Routledge, pp. 1 – 21.
17. *The Self-Assessment Report of the Study Programme of Technology Education in the Study Field of Education Studies*. (2013). Vilnius: Lithuanian University of Educational Sciences.
18. *Švietimo ir ugdymo studijų krypčių grupės aprašas (The Description of the Group of Study Fields of Education Studies)*. (2015). V-1264. Vilnius: Lietuvos Respublikos švietimo ir mokslo ministerija. [online] [26.09.2016]. Available at <https://www.e-tar.lt/portal/lt/legalAct/5185b730a00011e58fd1fc0b9bba68a7> (in Lithuanian)
19. Švietimo kokybė (Education Quality). (2013). Lietuvos Respublikos Švietimo ir mokslo ministerija. *Švietimo problemos analizė*, Vol. 10 (96), pp. 1 – 12. (in Lithuanian)
20. *Teachers' Standards*. (2011). London: Training and Development Agency for Schools, Department for Education. [online] [12.03.2016]. Available at [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/283566/Teachers\\_standard\\_information.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/283566/Teachers_standard_information.pdf)
21. Tryggvason M. T. (2009). Why is Finnish Teacher Education Successful? Some Goals Finnish Teacher Educators have for their Teaching. *European Journal of Teacher Education*, Vol. 32 (4), pp. 369 – 382.
22. Turkki K. (2008). Home Economics - A Dynamic Tool for Creating a Sustainable Future: A Response to the IFHE Position Statement Home Economics in the 21st Century. *International Journal of Home Economics*, Vol. 1 (1), pp. 32 – 42.



# **Development of Professional Education and Career**



## Importance of Career Services in Job Searching Process for Long Term Unemployed Social Benefits Receivers

Anna Bickovska Mg.ed.  
Latvia University of Agriculture, Latvia  
[annabickovska@gmail.com](mailto:annabickovska@gmail.com)

**Abstract:** Career Services should have serious impact on the job searching process for long-term unemployed social benefits receivers. Long-term unemployed social benefits receivers are able to participate in variety of career services at State Employment Agency, free of charge. The aim of the study was to define how long-term unemployed social benefits receivers use career services and do they evaluate them as helpful and important. 44 long-term unemployed social benefits receivers were asked to fill in the questionnaire in order to get information about their experience in using career services (have they ever used them; if yes – how often; does it helped them; are these services helpful; how did they find out the information about it). 26 of the respondents do not know about the possibility to use career services, but those of them (6) who have used them are not sure that it was helpful for them. Results show that career services that are available for long-term unemployed social benefits receivers are not designed for marginalized and unmotivated group; the variety and possibility to obtain them is not enough; the main problem is lack of information about such services for long-term unemployed social benefits receivers.

**Keywords:** career service, job searching, career management, long-term unemployed.

### Introduction

In order to start the research the author needs to define the group of people that are called “long-term unemployed social benefits receivers”. The long-term unemployed social benefits receivers are able-bodied persons who have received monthly benefits for more than 12 times within the last three years and were jobless at least 9 months (Pētījums par..., 2007), and have been receiving social service support at least for the last six months.

All of the long-term social benefits receivers are Employment Agency clients as it is asked by the law (Sociālo pakalpojumu..., 2002). Employment Agency provides such career services for the clients:

- career planning (includes variety of different tests, which are created with the aim to find out the right field for job searching; to identify job searching strategy; to find out strengths and weakness in job searching process);
- job searching (includes instructions for creating CV and letter of motivation);
- labour market analysis (shows main tendencies in labour market);
- face-to-face sessions with career counsellor (Darba meklētājiem, 2016).

Most of them are online services and only career counsellor is available for face-to-face sessions. Each session is limited to 45 minutes and you need to make an appointment at least few days (mostly week or even more) before.

In Social Service long-term unemployed social benefits receivers are able to receive social worker consultations; psychologist sessions are available only having some severe conditions (victims of violence, clients after loss of relatives). Being long-term unemployed is not a severe condition to receive psychotherapy (in Social Service terms).

Long-term unemployed are on the margins of the labour market – being out of the business for 12 months or even more, their chance to become full-time employed day by day is decreasing the longer the period (Krueger, Cramer, 2014).

Career services are a new tool in job searching process, especially in Latvia, there is no habit to seek for a help of career counsellor because of our historical background (a lot of long-term unemployed social benefits receivers still do not know about such service and do not understand the importance of it).

Career services are now widely common and obligatory for long-term unemployed social benefits receivers. There is no holistic system in job searching process, it is asked from the client to find a job as soon as it is possible. Rarely some of the long-term unemployed social benefits receivers get some

rehabilitation or any other treatment they need. Being unemployed for more than 12 months does not always mean they do not want to work, very often it means that they have more in-depth problems, which need to be cured. European Commission Employment, Social Affairs and Inclusion department emphasize that one of the key steps in successful job searching process is “providing each registered long-term unemployed with an individual in-depth assessment to identify their needs and potential at the very latest at 18 months of unemployment” (Employment, Social..., 2016).

When making investigation on long-term unemployed social benefits receivers and their ability to find a job it is important to emphasize such a term as *employability* - a useful person-centred psycho-social construct for reemployment research, as employable individuals may suffer less psychological harm from job-loss and subsequent unemployment, may more likely engage in job search and more likely gain high-quality reemployment (Fugate, Kinicki, 2004). That is the topic that should be gone through with career counsellor or main goal of any career service – client should become *employable*. Career service should work not only on technical things (CV and motivational letter writing, going through vacant places online), but also identify clients' fears and doubts about being employed, working on social skills.

Since there is no historical habit of seeking such type of help, it is important for institutions to promote it as regular service which needs to be done if such problem occurs. Institutions that are involved in job searching activities should promote more information and message that it is possible not always to find a job, even if economic situation is positive. Some individuals might have different problems with searching, finding and holding a job and there might be a lot of different reasons – health (also mental) issues, fears, and anxiety, physical or emotional abuse in the past. All this issues should be analysed by professionals and treated properly. Every long-term unemployed social benefits receiver should be prepared to start working and it is the aim of career services.

In the meantime, when a lot of new projects according to career services start in Latvia it is important to know the opinion of the direct potential (or existing) clients of the system about the topic.

Speaking about modern services and institutions that are working with unemployed there should be clear understanding that unemployment is a very costly problem for both – society and individual, it can create even more complicated social problems and that's why government always will be ready to hire professionals and provide institutions and services with the aim to reduce the level of unemployment (Koen, Klehe, 2012). Because of the pushed idea and wiliness to reduce the level of unemployment the government policy sometimes might be aggressive and not oriented at the individual that is why it is important for professionals to try to push out to the decision making institution right ideas, techniques and methods for correct and effective work with long-term unemployed.

The aim of the study was to define how long-term unemployed social benefits receivers use career services and do they evaluate them as helpful and important.

## Methodology

A survey developed by the author consist of 6 questions which represent respondents experience, knowledge and attitude towards career services they are able to receive. The participants were also asked to specify their gender, age, length of unemployment and level of education.

Questions respondents were asked to answer:

1. Do you know about possibility to obtain career services?
2. Have you ever used them?
3. Has anyone (professionals from the institutions) invited you to participate in that type of services?
4. Are career services important activities in job searching process?
5. What kind of services could help you find a job?
6. Do you know any other types of career services available for unemployed?

The current empirical research was carried out in one of Riga Social Service departments. 44 long-term unemployed social benefits receivers took part in this research. The participants of research were following: 31 female (70.5 %) and 13 male (29.5 %) between the age of 22 to 58 (Mean (M) = 39.88, Standard Deviation (SD) =10.4).

## Results and discussion

Being middle-age unemployed, with no job experience for at least 12 months in a row means a lot of anxiety and fears in job searching process, in similar way employers are looking at long-term unemployed individuals coming applying for job interviews – most of them are not used to them and are not able to tell good stories about themselves, as well as explain why they should be hired instead of the other applicants. Unfortunately, society has very active, strong, negative stigma about long-term unemployed social benefits receivers – most of the time they might be called lazy, addicted, poor-educated, and not-willing to change and take responsibility for their own lives. In some ways it is partly true, but there are some other important issues that need to be taken into consideration while working with long-term unemployed social benefits receivers in order to help them to get into working track again. Previous researches shows that the least trained and that's why the weakest part is work with self-efficacy or goal of getting positive and strong self-efficacy. This is crucial element of positive self-determination and, as a result, most likely positive job interview experience and positive outcome of this interview (Aysina, Maksimenko, 2016).

Since the only possible career service is career counselling at the State Employment Agency more than a half of all registered unemployed are using this service (Laskova, Brokane, 2014). Even more than 70 % of all registered unemployed are willing to attend additional language training, and not only Latvian language (for Russian speaking inhabitants) is the top choice, a lot of unemployed are choosing English, Norwegian, German and Swedish in order to go to work abroad in the future. While offering any type of service for long-term unemployed social benefits receivers it is important to realize their reasons for taking part in those services - work, career, or personal achievements are pushing people to use services.

The background of the 44 respondents, who are long-term unemployed, shows that most of them have secondary education (34 respondents), 8 of them have higher education and only 2 of them have primary education. Unemployment periods vary starting from 12 months to 123 months.

Answering the first question 18 respondents (only female) mentioned that they do know about available career services for them, 26 (13 female and 13 male) respondents do not know about available career services, but all of the respondents are registered at the State Employment Agency and they should be aware of available career services.

Answering the second question "Have you ever used them? [career services]" only six respondents (female) answered positively. 38 respondents replied that they have never used any career services (female – 13; male – 25).

Answering the third question "Have anyone offered you to use them [career services]?" 20 respondents (female) replied positively and 24 (female-11; male -13) replied negatively. It doesn't fit the answers received to the first question, it is not possible to be offered to use the service and not know about it, otherwise, some of the respondents might considered that knowing about service means participating in it. This reply doesn't fit into reality of State Employment Agency, because it is obligatory for every registered unemployed visits career counsellor at least once, so it should be offered to all of the respondents and explained what it means and why it is important to agree and participate. Another explanation is that many of the long-term unemployed social benefits receivers are unemployed for so many months and years that they just can't remember what was offered to them so long ago.

Answering the fourth question "Are career services important tools in job searching process?" only 8 respondents (female) answered positively, 36 respondents (female – 23; 13 – male) consider career services as not an efficient tool in job searching process. It is not a surprise, because the average age of the respondents is 39, but career services have a bit less than 10 years' history in Latvia. There was no such thing as "career service" when personality and habits of respondents were building up.

Answering the fifth question "What kind of career service you know [besides State Employment Agency]?" all of the respondents replied negatively. Long-term unemployed social benefits receivers often visit Social Service and State Employment Agency. The only offer State Employment Agency has is career counsellor sessions; Social Service does not offer career services. For future Social Service development, it would be very helpful to add career services (at least to offer career counsellor sessions). The author considers that every long-term unemployed social benefit receiver needs to have their own



development plan and career counsellor might be a great support. Development plan might be a free will on a paper that could be a good guide, created by the long-term unemployed social benefits receivers themselves. There is an opportunity to create it without any support and help, but considering that all of the respondents are unemployed for such a long period it means that they have some difficulties with planning and, maybe, with putting their plans on a paper and following them. Answering the last question “What kind of services can help you find a job?”, received data are described in Table 1.

Table 1

**Additional possible assistance for job searching**

<b>Possible Service</b>	<b>N, respondents</b>
Additional Latvian language classes	14 (female – 8; male – 6)
PC using classes	8 (female – 7; male – 1)
Health services (dental care programme)	16 (female 7; male – 9)
Sessions with psychologist	3 (female)
Opportunity to re-educate	29 (female – 20; male -9)

According to the table above, most of the respondents wish to get involved into re-education system. The average age of the respondents is around 40 years old and it means that they got their qualification in the 1990s, since then labour market has changed dramatically – a lot of new skills and knowledge are asked from employees, some of the professions do not exist anymore or transferred into technics and IT related. It also might be related with the respondents' wish to get more educated in PC using field since now even shop sales assistant are required to use it on a daily basis, but for those who got education in 1990s and don't use it in everyday life (for long-term unemployed social benefits receivers it might be very topical because of the low income not all of them are able to buy PC for home use and pay for the Internet); it might give additional insecurity going into job interviews and tests. In this research stereotype that women are worse with working with technics is not proved – from 8 people mentioned PC classes as tool to opportunity find a job 7 were women, they are willing to introduce new technologies to their life, but not always able to do so. The biggest issue is health problems, since health care is free of charge only for kids in Latvia, getting cured in adequate way becomes privileged, which can be taken only by few of the long-term unemployed social benefits receivers. It is not a surprise that dental help is mentioned as primary – there is no possibility to get discounts on social benefits for using dental services, but they are the most expensive medical treatment that average human need to get done. Dental health problems give a lot of insecurity for long-term unemployed social benefits receivers, because of such problems it is hard to participate in job interviews and give a good first impression – since major problems with teeth creates negative image in general. 14 respondents mentioned additional Latvian language classes as service that can help them to find job – 25,8 % (Latvijas iedzīvotāju..., 2016) of inhabitants in Latvia are native Russian speakers and some of them can have problems with fluent Latvian because back then it was possible to get an education only in Russian (Latvian – as additional language), for 10 years now all secondary schools have 60 % of the school programme in Latvian, so in the future this problem should disappear. Only 3 respondents mentioned a need of private sessions with a psychologist that might be not a lack of problems that can be solved by attending that type of support, but a lack of habit to identify individual's inner problems and possibility to solve them in order to move forward not only in emotional context, but in life in general.

Overall, respondents mentioned that in order to get a job they need a re-education possibility, but at the same time they don't see career services as a needed tool in job searching process, which means that they are not able to understand fully what it means to receive high quality career service. Probably, it is not a problem of long-term unemployed social benefits receivers; it is mostly a problem of a lack of information about career services (availability and general information about what career services can do). State Employment Agency should work more on informing society and their clients about what exactly career counselling can give to unemployed – it is not a re-education process, but it is, definitely, an education, which broadens up mind and brings new ideas on how to cope with future and deal with problems.

According to the authors experience in direct work with long-term unemployed social benefits receivers, the portrait of this client group and their attitude to any attempts of help or services that are provided for them is mostly negative or neutral. It makes it harder to work and to achieve some changes and positive

result. The author considers that the use of career services should be based only on free will, when long-term unemployed are sent to career counsellor as way of punishing – it is waste of time for both – professional and client. Any career services are based on deep, inner work that client should be doing with career counsellor guidance, sad truth is that only a few of long-term unemployed social benefits receivers are ready for it and are unemployed because of some complicated reasons, most of them have inadequate wishes for future work and are not willing to find a job, they more likely are satisfied with the lifestyle they have and are making fiction of job searching in order to keep receiving social benefits. That is a huge problem of social security system in Latvia and it needs to be changed dramatically, unless we want to wait while society is ready for changes.

## Conclusions

Career services are not widely common among long-term unemployed social benefits receivers and they are not considering it as an important and useful tool in job searching process, but there are some important features and keynotes that should be taken into consideration while working with this target group:

- most of the long-term unemployed social benefits receivers are not aware of a possibility to use career services as a tool in job searching process;
- long-term unemployed social benefits receivers do not consider career services an important and useful tool in job searching process;
- long-term unemployed social benefits receivers consider more realistic services useful and needed in order to find a job (free dental services, re-education, additional language or IT courses);
- State Employment Agency and other institutions providing career services for unemployed should invest in popularization of their services for long-term unemployed, because the employment of this group is extremely important for the budget of municipality and government.

## Bibliography

1. Aysina R.M., Maksimenko Zh. A., Nikiforov M.V. (2016). Feasibility and Efficacy of Job Interview Simulation Training for Long-Term Unemployed Individuals. *PsychNology Journal*, Vol. 14(1), pp. 41 – 60. [online] [9.11.2016.] Available at [http://www.psychology.org/file/pnj14\(1\)/psychology\\_journal\\_14\\_1\\_aysina.pdf](http://www.psychology.org/file/pnj14(1)/psychology_journal_14_1_aysina.pdf)
2. *Darba meklētājiem (For Job Searchers)*. (2016). Nodarbinātības Valsts Aģentūra (State Employment Agency Webpage) [online] [9.10.2016.] Available at <http://www.nva.gov.lv/karjera/index.php?mt=310&cid=310&mid=303&pt=1> (in Latvian)
3. Employment, Social Affairs & Inclusion (2016). European Commission [online] [9.10.2016.] Available at <http://ec.europa.eu/social/main.jsp?catId=1205&langId=en>
4. Fugate M., Kinicki A. J., Ashforth, B. E. (2004). Employability: A Psycho-Social Construct, its Dimensions, and Applications. *Journal of Vocational Behavior*, Vol. 65(1), pp.14 – 38.
5. Koen J., Klehe U-C., Van Vianen A. (2013). Employability among the long-term unemployed: A futile quest or worth the effort? *Journal of Vocational Behavior*, Vol. 82, pp. 37 – 48.
6. Krueger A.B., Cramer J., Cho D. (2014). Are the Long-Term Unemployed on the Margins of the Labor Market? *Brookings Papers on Economic Activity*, Spring 2014 [online] [9.10.2016.] Available at [https://www.brookings.edu/wp-content/uploads/2016/07/2014a\\_Krueger.pdf](https://www.brookings.edu/wp-content/uploads/2016/07/2014a_Krueger.pdf)
7. Laskova J., Brokane L. (2014). Opportunities and Motivation for Training Unemployed in Latvia. *Procedia - Social and Behavioral Sciences*, Vol. 116, pp. 649 – 655.
8. *Latvijas iedzīvotāju etniskais sastāvs (Latvian Ethnic Separation of Population)*. (2016). Centrālā Statistikas Pārvalde (Central Statistically Bureau) [online] [9.10.2016] Available at [http://www.csb.gov.lv/sites/default/files/skoleniem/iedzivotaji/etniskais\\_sastavs.pdf](http://www.csb.gov.lv/sites/default/files/skoleniem/iedzivotaji/etniskais_sastavs.pdf) (in Latvian)
9. *Pētījums par ilgstošo sociālās palīdzības saņēmēju – bezdarbnieku iespējām darba tirgū Rīgas pilsētā (Research on Opportunities in Labour Market of Long-Term Unemployed Social Benefits Receivers in Riga)*. (2007). Rīga: SKDS. (in Latvian)
10. *Sociālo pakalpojumu un sociālās palīdzības likums ( Law of Providing Social Service and Social Help)*. (2002). Latvijas Republikas tiesību akti, Rīga: LR Saeima [online] [9.10.2016.] Available at <http://likumi.lv/doc.php?id=68488> (in Latvian)

## The Importance of Generic Competences in Adult Education: Case of Volunteering

Genute Gedviliene PhD

Department of Education, Faculty of Social Sciences

Vytautas Magnus University, Lithuania

[g.gedviliene@smf.vdu.lt](mailto:g.gedviliene@smf.vdu.lt)

**Abstract:** The generic competences are particularly important for all people in our society. It brings more opportunities to stimulate new environment and successfully participate in the activities in life-long learning. During the participation in the variety of voluntary activities adults have a chance to feel the quality of life. The paper analyses the generic competences in active voluntary activity. It is analysed theoretically the tendency of adult education, function of volunteering and motivation of participation in voluntary activity. The quantitative research revealed that most adults seek to develop generic competences in voluntary activity. Especially for older respondents it is very important to help others and enhance self-confidence.

**Keywords:** adult education, generic competences, lifelong learning, volunteering.

### Introduction

The generic competences are particularly important for all people in our society. During the participation in variety voluntary activities adults have a chance to feel the quality of life.

In our days the voluntary activity is significant at national and international level, this activity is closely linked to active citizenship which is the core of democracy. Voluntary activities give opportunities for everyone, regardless of gender, race, nationality, religion, political belief, age or health, to use their skills and experience, gain new skills, make friends, engage in work and change the social life of the country. Voluntary activities promote personal development, expand social benefits, general human capacity – it is beneficial of other activities and the opportunity to educate themselves, improve their personal, professional and social competences. Volunteering is one of the ways in which different nationalities, religions, social and economic environment and people can induce positive change.

The object of the research - voluntary skills in expression of generic competences in adult active life.

The study aims - to substantiate the importance of development of generic competences during adults' volunteering activities.

### Methodology

The objectives of research:

- discuss the significant generic competences in the development of life in adult education;
- describe the concept of volunteering, functions and the competences of voluntary activities;
- base the motivation of the participation in voluntary activities;
- reveal adults', who in involved voluntary activity, generic competences.

Theoretical and empirical research methods were applied: analysis of the literature and questionnaire.

Quantitative study was organized in 2015. 488 respondents from 11 active non-governmental organizations participated in survey and answered the questionnaire. Investigation of selected non-governmental organizations activities is based on the voluntary activity. Many of the respondents to 45.7 % were 21-25 years of age; at least – 6.4 % to 41 to 60 years of age. The questionnaire shows that the volunteers are mainly working young persons. In addition, it could be argued that Lithuania is the most active youth non-governmental organizations. The analysis of the questionnaire was used SPSS software.

### Results and discussion

#### Theoretical approaches to generic competences and their characteristics in adult education

As globalisation continues to confront the European Union with new challenges, each citizen will need a wide range of generic competences to adapt flexibly to a rapidly changing and highly interconnected world. Education in its dual role, both social and economic, has a key role to play in ensuring that Europe's citizens acquire generic competences needed to enable them to adapt flexibly to such changes

(Key Competences..., 2006). Education and training are central to the Lisbon agenda for growth and jobs and a key element for its follow-up with the 2020 perspective. Creating a well-functioning 'knowledge triangle' of education, research and innovation which help all citizens to be better skilled are crucial for growth and jobs, as well as for equity and social inclusion. The economic downturn puts these long-term challenges even more into the spotlight. Public and private budgets are under strong pressure, existing jobs are disappearing, and new ones often require different and higher level skills. Education and training systems should therefore become much more open and relevant to the needs of citizens, and to those of the labour market and society at large (Joint Progress Report..., 2010). The European Framework for Generic Competences for Lifelong Learning, identifies and defines 8 generic competences necessary for personal fulfilment, active citizenship, social inclusion and employability in a knowledge society: 1) Communication in mother tongue; 2) Communication in foreign languages; 3) Mathematical, Science and Technology; 4) Digital; 5) Learning to learn; 6) Social and civic; 7) Initiative and entrepreneurship; 8) Cultural awareness and expression.

The concept of generic competences assumes that individuals and societies share some basic characteristics beneath the variety of approaches to life, life styles, and customs. In order for person to create his or her successful life and to participate in the creation of wealth, it is necessary to mobilize a lot of skills. European Commission reference lists eight generic competences (Figure 1).

*Communication in mother tongue.* It is every citizen's ability properly and correctly use vocabulary, grammatically written and spoken language. To communicate competently using oral language, expressing their views, interviews in discussions.

*Communication in foreign languages.* The duty of every citizen, no matter of age, is to be proactive in intercultural communication. Ability to communicate in a foreign language expands human capabilities. However, foreign language proficiency level depends on what are your listening, speaking, reading and writing skills. Foreign languages, one or more, are important for many reasons. As one of the necessities, being the member of the European Union/under the European Union supervision, in cooperation with other nations, in developing business and others.

*Mathematical Science and Technology.* It signifies that every citizen should master mathematical skills such as number, measurement units, basic mathematical operations and actions in everyday life.

*Digital.* Living in the twenty-first century, it is more difficult for people to be active participants in digital sphere. The digital literacy has become a necessity, because computer is as a tool for information literacy, which assisted in the presentation and exchange of information, communication, development of cooperation networks. New social networks, as Facebook, Skype and others, information society technologies help citizens to communicate with each other, to share information, and finally to spend their leisure time. These skills help individuals to enhance critical and creative thinking and to develop information literacy skills.

*Learning to learn.* All competences are interrelated. Learning to learn is a complex process in which we learn to analyse learning situations reflectively, trying to identify themselves. Therefore, in learning to learn, citizens can identify their strengths and weaknesses, and thus to use appropriate learning strategies. For this reason, it is important learning motivation, confidence and faith in what you are doing, linking an existing practice.

*Social and civic.* All human life runs while being and participating in society just in different functions. In other words, a person is born to express his attention and life depends in greater part on the surrounding (the institutions). Thanks to them he succeeds to socialize and integrate in society and to be important. This ability includes personal, interpersonal and intercultural skills. Therefore, through the expression of general skills a man reveals himself. Seeking this ability, a person learns to be tolerant, honest, confident, he learns to understand and evaluate his own and others' opinions in a constructive communication and cooperation way while creating a democratic, justice-based environment. Only civil skills, such as democracy, citizenship, justice, equality development support the public unity, maintain order and stability. In other words, only in democratic society citizens are united by devotion to the freedom and equality principles.

*Initiative and entrepreneurship.* Through this competence human creativity (the ability to formulate new ideas, to be resourceful, curious, enterprising for innovations and changes), thrusting (optimistic glimpse

into the future, vigorous pursuit of accomplishing these tasks), the desire to be independent (to have your own opinion, the ability to make own decisions, the ability to work independently) is displayed. Faith affects your success and the ability to achieve goals. In other words, human devotion for work, entrepreneurial skills, i.e. ability to successfully organize and manage your life and business, profitably produce goods or provide services is revealed. This competence necessary for every citizen to be able successfully lead you to work in a competitive job market, trying to keep a job place or creating for them a job place setting up a business.

*Culture awareness and expression.* This competence refers to an individual's cultural knowledge. Culture, expressing the human world-view and world-picture, is not just a phenomenon in its own notion. Cultural awareness is important for national and international orientation of culture. In other words, knowledge about other cultures characteristics will give the pre-offer insight and help to successfully communicate, better recognize the differences, the development of various nations historical, religious and cultural development.

All these competences are equally important for every citizen, because only they can help to orient to a knowledge society in lifelong learning processes. These competences are directly linked with each other, overlap and complement one another.

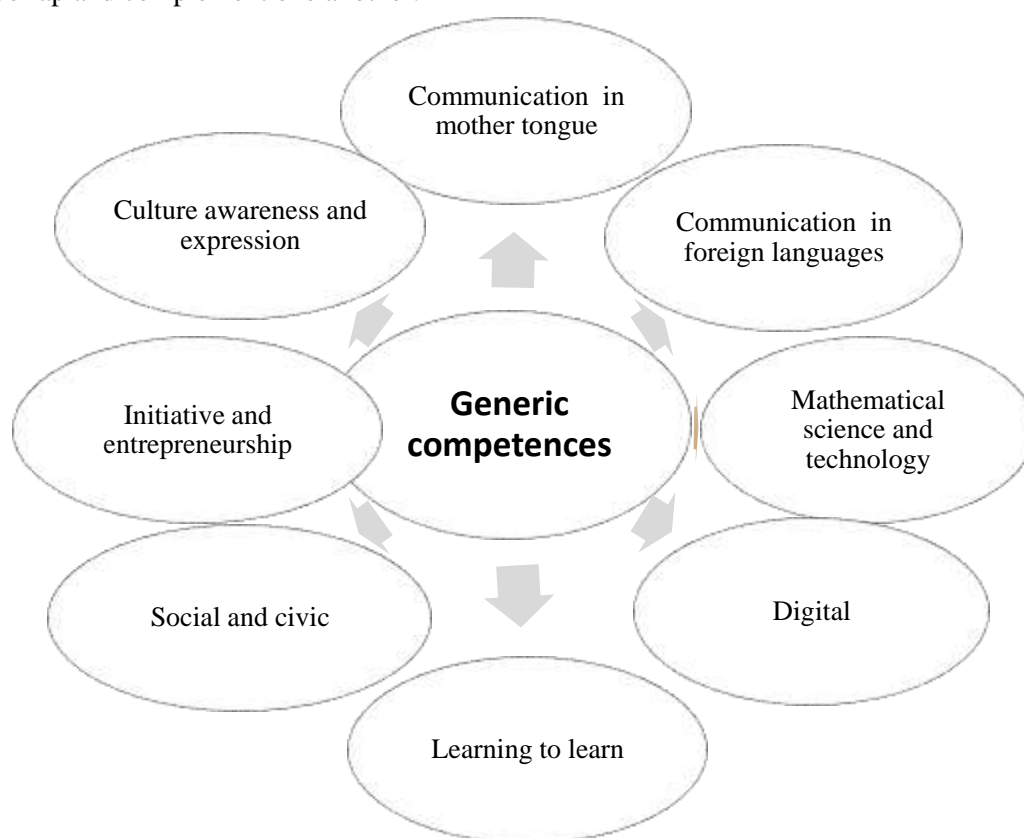


Figure 1. Generic competences (Key Competences..., 2006).

Lifelong Learning guaranteed competences are considered particularly important in a knowledge society, because they ensure more flexibility in the labour market, more adaptation to constant change. Self-competence also increases students' motivation, attitude to learning and its uniqueness. (Key Competences..., 2006). Every citizen their skills, knowledge should improve continuously, actively participating in social life and acting successfully in a changing labour market and the business world.

Competence is the common basis for all national and European initiatives and is committed for all contributing to the creation of education lifelong learning – learners, employers, providers of education and politics. Consequently initial education and training should support the development of these generic competences to a level that equips all young people – including the disadvantaged – for further learning and working life. Adult education and training should give real opportunities to all adults to develop and update their generic competences throughout life. The Recommendation of the European

Parliament and of the Council of 18 December 2006 on generic competences for lifelong learning states that generic competences for lifelong learning are a combination of knowledge, skills and attitudes appropriate to the context. They are particularly necessary for personal fulfilment and development, social inclusion, active citizenship and employment. Continuously upgrading the skills of people in line with the needs of the labour market (Key Competences..., 2006).

Today, we are confronted with important and complex challenges such as rapid social and technological changes, economic and cultural globalization, increasing uniformity, and at the same time, increasing social diversity, instability of norms, large-scale value changes, substantial global inequality of opportunities, increasing marginality of certain segments of the population, and ecological pressures.

Lifelong learning has become a necessity for all citizens. People need to develop their skills and competences throughout their lives, not only for their personal fulfilment and their ability to actively engage with the society in which they live, but for their ability to be successful in a constantly changing world of work. Growing internationalisation, the rapid pace of change, and the continuous roll-out of new technologies mean that Europeans must not only keep their specific job-related skills up-to-date, but also possess the generic competences that will enable them to adapt to change. It is very important that education in its dual role, both social and economic, has a key role to play in ensuring that Europe's citizens acquire the key competences needed to enable them to adapt flexibly to changes.

Any conceptual or theoretical foundation for defining and selecting generic competences is inevitably influenced by conceptions about individuals and society, and by what is valued in society and in life under particular socio-economic and political conditions.

Generic competences are consistent with the principles of human rights and democratic values. A number of international texts and agreements form a solid basis for describing the universal principles governing a modern, democratic society. This literature emphasizes, among other things, democratic values: respect for the law and for the rights of others; the importance of education for imparting knowledge, skills, and competences to the population; and learning as a lifelong endeavor. Defining generic competences in a manner that is consistent with these principles is a political and ethical challenge for countries and societies. For example, generic competences should be determined and developed in a way that is consistent with the values of autonomy and liberty. Generic competences give individuals the capacity for a good, successful life. Generic competences should reflect a notion of what constitutes a good and successful life for individuals beyond the satisfaction of elementary personal needs. Consistent with any major moral theory, a good and successful life includes close relationships with other people, an understanding of oneself and one's world, autonomous interaction with one's physical and social environment, and a sense of accomplishment and enjoyment. Generic competences are not incompatible with social and individual diversity. The concept of generic competences assumes that individuals and societies share some basic characteristics beneath the variety of approaches to life, life styles, and customs. For instance, the importance of social influences and the capacity for autonomous action are elements of the human condition, not dependent on any society or culture (Contributions to..., 2002).

### **The definition of voluntary activity**

Voluntary activity has played an important role in every civilization, and social voluntary activity is defined as a non-profitable, without monetary compensation and non-business carried out by individuals for other people, community or society. A voluntary activity has a variety of forms and includes the traditional mutual assistance in the event of a crisis in community, as well as in dealing with conflicts and reducing poverty. Voluntary activities include local and national efforts, as well as bilateral or international programmes, which are carried out without the borders (Lietuvos Respublikos..., 2011). Volunteers carry out those works which are the most relevant to the public at that time. Voluntary activity also promotes personal development: the development of social awareness on the one hand and, and on the other hand, the development of generic competences and skills, making volunteers more employable and enhancing their active participation in society. There are three criteria, which distinguish voluntary activity from others.

1. Voluntary activity does not create material benefit. However, any man who is employed on a voluntary basis must be reimbursed the costs associated with voluntary activities.

2. Voluntary activity is based on free will. This criterion helps to identify true voluntary activities from other activities.

3. Voluntary activity brings benefits not only for volunteers, but also to a third part. This criterion helps to distinguish voluntary activity from leisure activities (Carlo, Okun, 2005.) (Figure 2).

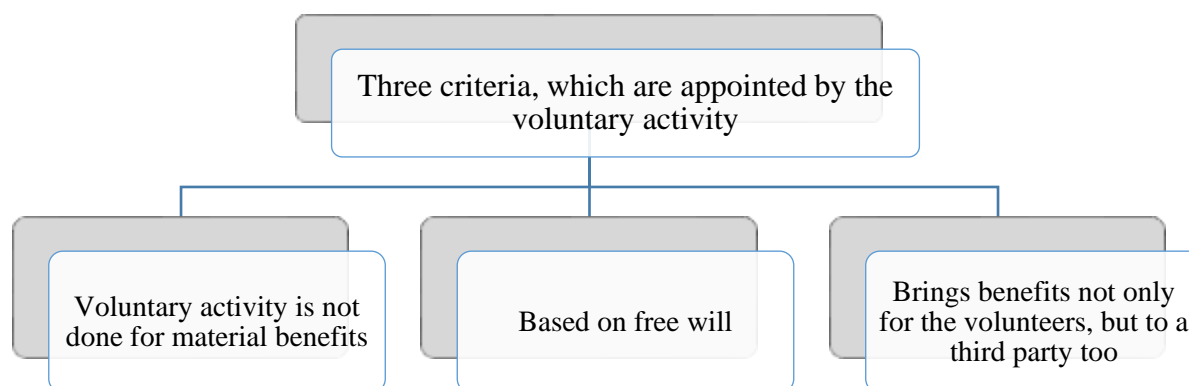


Figure 2. The criteria, which distinguish voluntary activity from others.

These criteria describe voluntary activities in general. It is necessary to emphasize that volunteers contribute significantly to the processes of industrialization and the development of the Member States, as well as to the United Nations in the humanitarian and technical assistance, the promotion of human rights, democracy and peace programmes. As regards voluntary activities we need to remember that various activities are often carried out in social, environmental, non-formal education organizations. To carry out the voluntary activity, legal environment is necessary, which ensures a secure and flexible voluntary, convenient to a volunteer and the host organisation.

To sum it up, we can say that volunteering is a human's deliberate decision to engage into activity which is redirected to help others and devote time for social activity.

### Motivation for voluntary

As long as a person and people are not prepared to do everything that depends on them, without focusing on creative forces and do not develop all initiatives, they have no right to wait for help from others. We can seek global welfare only through the progress of individuals and the promotion of global solidarity of nations. According to the European Economic and Social Committee, the motivation which underlies voluntary activity, that is the desire to make a contribution on one's own initiative to the common good and to help shape society, promotes values such as altruism and solidarity and thus forms a counterweight to increasingly widespread isolation and egoism in modern societies (Lietuvos Respublikos..., 2011).

According to I. Jonutyte, voluntary activity is directed to meet the requirements themselves enhancing the value, new skills-building, personality development, warrant for the future perspectives, understanding of loneliness. Voluntary activity is *directed* to meet the requirements of others: concern for the community, help other people (Jonutyte, 2007).

The motifs of voluntary activity are important before starting the activity in non-governmental organizations. They often depend on the human aspirations to acquire voluntary competence or discover their professional way. A number of volunteers participating in voluntary work, looking for values, so rarely found in everyday life (sincere relations between people helping the community). Nevertheless, the most common approach of youth is that voluntary work provides an opportunity to supply vocational and special needs (Carlo, Okun, 2005). Voluntary activity in each non-governmental organization is different. It depends on the Organization's activities; however, it is possible to distinguish the features of voluntary activity:

- in voluntary activity, self-esteem of participants is growing;
- by meeting individual needs and interests, personal and community life, environmental systems, activities of political systems are improved;



- there is genuine and sincere interest in the voluntary activity;
- the problems of the society and individual are solved in a humane way;
- creates teams in which the individuals discover their own ways in society;
- volunteers learn from other's abilities and talents;
- the possibility of each person to become a responsible and active member of society (Bax, Moens, 1997).

These features characterize the benefits of participation in voluntary activity. This shows that in voluntary activity people of different ages may participate. The adults, who become volunteers, have the opportunity to unfold, dominate and attend various teams even to learn from each other. The following expression of the adult consolidates the personal existence and quality of life. The voluntary value derives from voluntary features for volunteer as a person. Adult volunteers would always like to find out if this activity is useful for them and others.

Through voluntary activities unfold the characteristic of the motivation of voluntary activity; the importance of voluntary to volunteer and society (Table 1).

Table 1

**The characteristics of the motivation of voluntary activity**

<b>The value of voluntary to volunteer</b>	<b>The value of voluntary to society</b>
<ul style="list-style-type: none"> <li>- helps to feel useful;</li> <li>- enables to acquire missing experience, develop personal qualities to personal goals and career;</li> <li>- helps to broaden the circle of dating, make new friends;</li> <li>- achieve a new experience in different situations, which helps to know oneself;</li> <li>- develop teamwork skills, communication skills, encourage interaction;</li> <li>- opens up the opportunities for informal and non-formal learning;</li> <li>- learns to manage crisis situations;</li> <li>- acquires organizational skills;</li> <li>- makes the opportunity to insight into the world with different eyes.</li> </ul>	<ul style="list-style-type: none"> <li>- voluntary activity implementing persons or their teams draw attention to public, social, human and environmental problems;</li> <li>- fill gaps in education, environment, social work, economic areas;</li> <li>- helps to preserve the values of the society;</li> <li>- enhances citizenship;</li> <li>- arousing human values, develop tolerance;</li> <li>- contributes to economic and political welfare;</li> <li>- is an indispensable aid in various life situations.</li> </ul>

Participation in voluntary activity increases volunteer self-esteem (one of the most satisfactory upper A. Maslow (Macroy, 2008) pyramid needs – to respect).

Informal, respect based communication, free expression of opinion, emotions, the possibility to become a responsible, active member of the society – these features of voluntary activity also demonstrate that the higher human needs identified by A. Maslow: security, social needs, respect, freedom of expression, are satisfied by voluntary activities (Plužek, 1996).

The factors of satisfaction fulfil these needs: achievements, recognition, new challenges, increased responsibility, growth and development. The factors of dissatisfaction - working conditions, relationships, monetary reward do not directly affect human motivation, but if people fail it they lose their motivation (Jucevičienė, 1996).

Even if the working conditions and the atmosphere are good, but if the work is boring and irrelevant people tends to work non-creatively. In many cases, voluntary work is similar to paid work. Therefore, the leaders of the non-governmental organizations and volunteer coordinators should provide volunteer work as responsible and creative tasks in synergy with the volunteer's possibilities (Jordan, Ochman, 1998). By taking part in voluntary activity people are seeking to satisfy the needs of new challenges, achievements, recognition, increased responsibility, growth and development needs.

### Results of empirical research

Generic competences which respondents gain in voluntary activity and how many percent of the respondents believe that they acquire skills by taking part in one or other of the activities of non-governmental organisations (or not acquired these skills) (Figure 3). Social skills (communication, collaboration, learning from others, respect for different opinions, self-assessment, problem solving, understanding other people's emotions, the assumption of responsibility and resistance to stress), plus planning, leadership, search for the information and project writing skills were used to make this question.

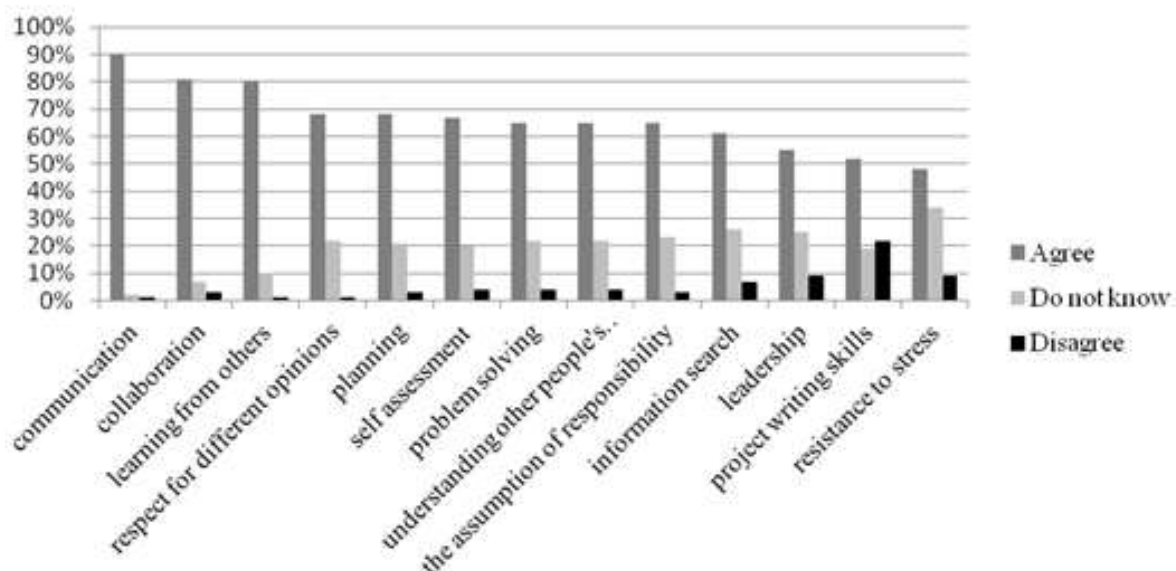


Figure 3. Generic competences, which respondents gain in voluntary activity.

Most of the respondents agree that they acquired communication (90 %), cooperation (81 % of respondents) and learning from other people (80 % of those polled) skills. This is confirmed by the statistically important difference ( $\chi^2 = 8.89$ ,  $df = 3$ ,  $p < 0.003$ ). Most of the respondents do not agree that they acquired project writing (22 %) ( $p < 0.001$ ), leadership (9 %) ( $p < 0.05$ ) and resistance to stress (9 %) ( $p < 0.05$ ) skills.

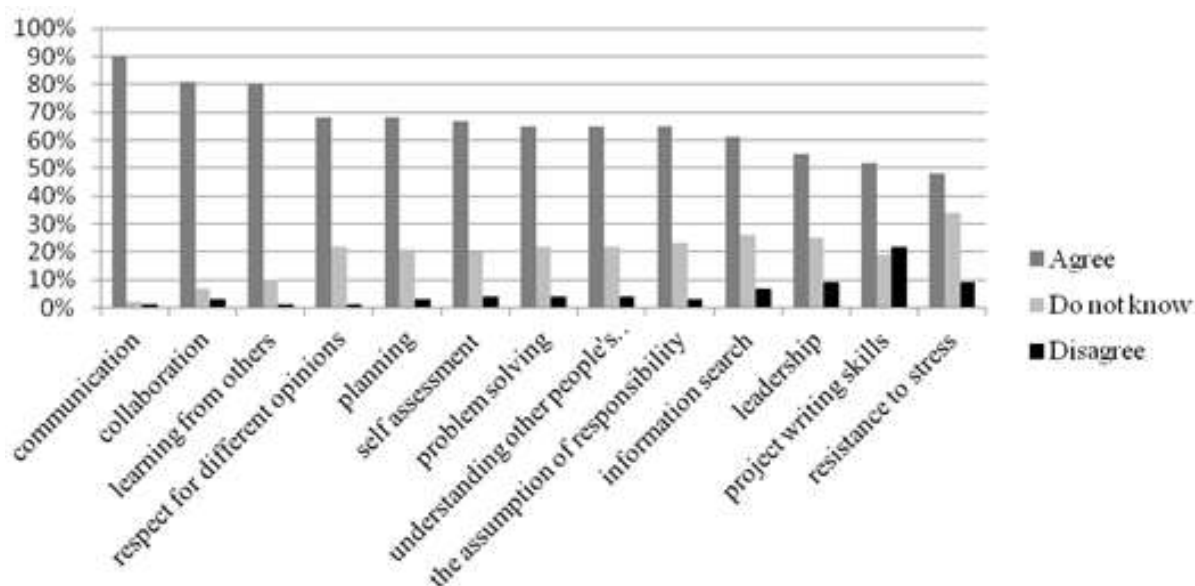


Figure 4. Men and women's acquired generic competences.

As it has been mentioned earlier, the distribution of respondents according to gender revealed that more women than men participated in the research, so the results are as distributed answers of men and women about the acquired skills. (The differences in trends are shown in Figure 4). As you can see, mostly men (90 % of respondents) have the ability to plan ( $p < 0.001$ ); at least the men claimed - the resistance to

stress ( $p < 0.001$ ) and writing projects (48 % of respondents) skills ( $p < 0.001$ ). This finding is confirmed by the statistically important difference ( $\chi^2 = 8.89$ ,  $df = 3$ ,  $p < 0.003$ ).

The research revealed that most women (81 % of respondents) have acquired the capability of understanding the emotion ( $p < 0.001$ ); at least (59 %) – resistance to stress. It could be stated that both men and women have learned to cope with stress. It is confirmed by the statistically important difference ( $\chi^2 = 8.89$ ,  $df = 3$ ,  $p < 0.003$ ).

It was relevant in the research to find out how many respondents have gained knowledge, values and social skills. It was presented the four possible answers: very much; much, neither much or nor, a little. By summarizing the results, it could be stated that most respondents gained social skills in the activities of non-governmental organizations.

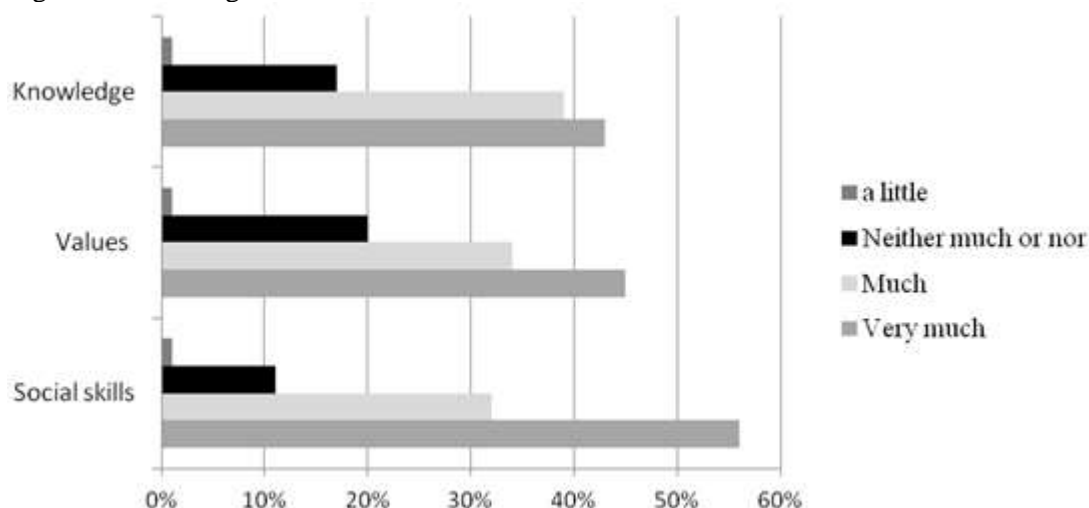


Figure 5. Knowledge, skills values purchased in volunteering.

As we can see in figure 5, social skill pointed 56 % of responds “very much” (It is confirmed by the statistically important difference,  $p < 0.001$ ), “much” pointed – 32 %, „neither much or nor“ – 11 % and “a little” – 1 %. Values “very much” choose 45 % of respondents, „much“ – 34 %, „neither much or nor“ answered 20 % and “a little” – 1 %. Knowledge “very much” pointed 43 %, „much“ – 39 %, „neither much or nor” – 17 % and „a little” – 1 %.

Analysing the results of the research it was found out that 31 % of respondents agree and 25 % fully agree with proposition “The elderly do not have an opportunity to enjoy public life and to be the part of it” ( $\chi^2 = 20.70$ ,  $df = 5$ ,  $p < 0.001$ ), 28 % of respondents disagree with this proposition “The elderly are the most discriminated people”, 32 % of respondents fully agree with this proposition “The elderly people cannot enjoy high prestige and high status in our society”, 32 % of respondents disagree with this proposition “Retired people are forgotten, nobody respects them, not interested in them”, 45 % of respondents agree with this proposition “Volunteering for elderly is opportunity to stay social active” ( $\chi^2 = 36.49$ ,  $df = 4$ ,  $p < 0.000$ ), 48 % of respondents agree with this proposition “In charitable activity time the elderly affinity group, to learn to work in a team” ( $\chi^2 = 38.069$ ,  $df = 3$ ,  $p < 0.000$ ), 37 % of respondents agree with this proposition “In charitable activity the elderly have to know how to work in a team”, 38 % of respondents do not know if “In voluntary is important to control crisis situations”, 41 % of respondents agree with this proposition “Understanding of those who are poor is important in voluntary activity”, 40 % of respondents agree with this proposition “Voluntary can be useful not only for the emotional but and physical health” ( $\chi^2 = 15.33$ ,  $df = 4$ ,  $p < 0.006$ ) (Table 2).

The respondents were asked who will stimulate them to work in voluntary activity, the data of research showed (Table 3) that 58 % of respondents will stimulate the circle of new friends, 57 % would stimulate the wish to get away from home and to share their experience, 50 % of them said that will stimulate them the wish to participate in social activities. It is confirmed by the statistically important difference ( $\chi^2 = 8.89$ ,  $df = 3$ ,  $p < 0.003$ ).

Table 2

**The opportunities of elderly of involvement in voluntary activity (%)**

Proposition	Fully agree	Agree	Do not know	Disagree	Fully disagree
The elderly do not have an opportunity to enjoy in public life, to be the part of it	<b>25</b>	<b>31</b>	17	20	7
The elderly are the most discriminated people	<b>24</b>	<b>23</b>	20	28	5
The elderly people cannot enjoy high prestige and high status in our society	<b>32</b>	<b>25</b>	11	25	7
Retired people are forgotten, nobody respects them, not interested in them	<b>25</b>	<b>28</b>	13	32	2
Volunteering for elderly is opportunity to stay socially active	<b>23</b>	<b>45</b>	22	7	3
In charitable activity time the elderly affinity group, to learn to work in a team	<b>37</b>	<b>48</b>	10	0	5
In charitable activity the elderly have to know how to work in a team	<b>28</b>	<b>37</b>	30	2	3
In voluntary activity it is important to control crisis situations	<b>20</b>	<b>37</b>	38	5	0
Understanding of those who are poor is important in voluntary activity	<b>25</b>	<b>41</b>	32	2	0
Voluntary activity can be useful not only for the emotional but physical health	<b>25</b>	<b>40</b>	28	7	0

Forty-three percent of respondents will stimulate increased self-confidence, 33 % - wish to fully use their skills and at least 20 % of the respondents pointed the surrounding respect.

Table 3

**Self –expression of elderly in voluntary activity (%)**

What stimulates to engage in voluntary activity	Percent
Bigger self-confidence	33
New circle of friends	<b>58</b>
Respect	20
Wish to improve as the person	22
Wish fully to use skills	28
Wish to share experience	<b>57</b>
Wish to escape from the daily routine	43
Wish to come out from home	<b>57</b>
Wish to participate in the social activities	<b>50</b>

Summarising we can say that for volunteers it is important to gain social skills which contribute to develop the social dialogue in a multicultural environment.

**Conclusions**

Voluntary activity is defined as a non-profit, without monetary compensation and non-business activities carried out by individuals for neighbours, community or society. A voluntary activity has a variety of forms and includes the traditional mutual assistance in the event of a crisis in community, as well as in dealing with conflicts and reducing poverty.

According to the European Economic and Social Committee the motivation underlying voluntary activity, that is the desire to make a contribution to one's own initiative to the common good and to help shape society, promotes values such as altruism and solidarity, and forms a counterweight to increasingly widespread isolation and egoism in modern societies.

Volunteering is one of the ways in which different nationalities, religions, social and economic environment and people can affect positive change. Voluntary activities promote personal development, expand social benefits, general human capacity – it is time for the benefit of other activities and the opportunity to educate themselves, improve their personal, professional and social competences.

The quantitative research revealed that voluntary work is chosen more by young people who are studying at universities, colleges, and who are younger. To young volunteers it is the most important to get practical knowledge which helps in professional activity, as well as to communicate with young people. They are more focused on a more dynamic and creative activities. Through volunteering in non-governmental organizations (NGOs) respondents got the following skills: communication, cooperation and learning from other people. At least they got – the project of writing skills, leadership and stress resistance. Most of involved in the non-governmental organizations respondents got 'a lot' and 'very much' values, social skills and knowledge.

### Bibliography

1. Bax W., Moens J. R. (1997). *Training of Volunteers: Project Report*. Vorming Training Advies Groep. [online] [06.11.2016]. Available at <http://www.vlaanderenvrijwilligt.be/bib/training-volunteers-project-report/>
2. Carlo G., Okun M.A., Knight G., de Guzman M.R.T. (2005). The Interplay of Traits and Motives on Volunteering: Agreeableness, Extraversion and Prosocial Value Motivation. *Personality and Individual Differences*, Vol. 38, pp. 1293 – 1305. [online] [06.11.2016]. Available at <https://pdfs.semanticscholar.org/c51e/c969ede610af836bbdc47ab3c16f39dd5e13.pdf>
3. Contributions to the Second DeSeCo Symposium. (2002). In Rychen D.S., Salganik L.H., McLaughlin M.E. (Eds.) *Definition and Selection of Key Competencies*. Geneva, Switzerland: Swiss Federal Statistical Office. [online] [06.11.2016]. Available at <http://www.oecd.org/edu/skills-beyond-school/41529505.pdf>.
4. *Joint Progress Report of the Council and the Commission on the implementation of the "Education & Training 2010" work programme*. (2010). Adoption of the report. Brussels: Council of the European Union. [online] [06.11.2016]. Available at <http://register.consilium.europa.eu/pdf/en/10/st05/st05394.en10.pdf>
5. Jonutytė I. (2007). *Savanorių socialinio ugdymo sistemoje (Volunteerism in the System of Social Development)*. Monografija. Klaipėda: KU leidykla. (in Lithuanian).
6. Jordan P., Ochman M. (1998). *Savanorių vadybos nevyriausybinėse organizacijose pagrindai (Volunteer management in non-governmental organizations basics)*. Vilnius: Savanorių centras. (in Lithuanian).
7. Jucevičienė P. (1996). *Organizacijos elgsena (Behavior of Organization)*. Kaunas: Technologija. (in Lithuanian).
8. Key Competences for Lifelong Learning: A European Reference Framework. (2006). The Recommendation of the European Parliament and of the Council of 18 December 2006. *Official Journal of the European Union*, Vol. 394(10). [online] [06.11.2016]. Available at <http://enil.ceris.cnr.it/Basili/EnIL/gateway/europe/EUkeycompetences.htm>
9. *Lietuvos Respublikos savanoriškos veiklos įstatymas (The Law of Voluntary Activities in The Republic of Lithuania)* (2011). Vilnius: L.R. Seimas [online] [06.11.2016]. Available at <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.402802> .(in Lithuanian).
10. Plužek Z. (1996). *Abrahamo Maslowo humanitarinė asmenybės koncepsija (Abraham Maslow Humanitarian Personality Conception)*. Vilnius. (in Lithuanian).
11. Маслоу А. (2008). *Мотивация и личность (Motivation and personality)*. (3-е изд.). С. Петербург: Питер, 352 с. (in Russian)

## Manifestation of Stakeholders' Roles in the Context of Students' Preparation for the Labour Market

Nida Kvedaraitė<sup>1</sup> Dr. ed.; Aušra Repečkienė<sup>2</sup> Dr. tech.; Renata Žvirelienė<sup>3</sup> Dr. mgmt.;  
Brigita Stanikūnienė<sup>4</sup> Dr. ed.

Kaunas University of Technology, Panevėžys Faculty of Technologies and Business, Lithuania  
[nida.kvedaraitė@ktu.lt](mailto:nida.kvedaraitė@ktu.lt)<sup>1</sup>, [ausra.repeckiene@ktu.lt](mailto:ausra.repeckiene@ktu.lt)<sup>2</sup>, [renata.zvireliene@ktu.lt](mailto:renata.zvireliene@ktu.lt)<sup>3</sup>,  
[brigita.stanikunienė@ktu.lt](mailto:brigita.stanikunienė@ktu.lt)<sup>4</sup>

**Abstract:** The scientific discussions emphasize that educating and training students as high quality professionals for future labour market calls for the active involvement of both educational institutions and other stakeholders who represent the norms and values of post-industrial, sustainability oriented society. Participation of these stakeholders is based on both rational and emotion-based interests, and the boundaries of their responsibilities differ in scope and manifestation. The aim of the paper is to identify the manifestation of stakeholders' roles (higher education institutions and labour market representatives) in the preparation of students for labour market. The qualitative research strategy employs conversation and semi-structured interview which enabled to disclose the experiences of research participants about the research question under the investigation. The sample of higher education institutions' representatives (19) consisted of deans and vice-dean of Lithuanian universities and colleges, supervisors of students' internship. The group of the labour market representatives (42) is made of the owners of business enterprises, directors and managers. The results of the research imply that both educational institutions and employers have to commit themselves to the process students' preparation for the labour market. However, the manifestation of their roles indicates the uneven distribution of the responsibilities. The educational institutions by default take the roles of educator, employer, mediator and observer while the employers tend to perform the roles of educators, partner and sponsor. However, the boundaries of their responsibility and commitment have not been clearly defined.

**Keywords:** stakeholders, students, higher education institutions, employers, labour market.

### Introduction

The goals of „Europe 2020” strategy (to aim for advanced, sustainable and integrative development) make a demand for the EU countries to increase the potential of human resources by increasing the access to education, improving the study quality in higher education institutions, and implementing the study programmes that provide graduates both academic knowledge and skills including those that are transferable, which may influence their personal development and may be applied in their future careers. The quality assurance of study programmes is the priority of higher education policy and management (Bucharest Communiqué, 2012) and the learning outcomes have to ensure the skills applicability in labour market, employability perspectives and the successful living of a human being.

As European Parliament Resolution on education, training and strategy “Europe 2020” indicates, the issues of graduates' successful integration into labour market call for maintaining the dialogue between social stakeholders – first of all, small and medium enterprises, local and regional authorities, other public interested parties - and higher education institutions. This supports the idea of developing of quality culture in higher education institutions in which all stakeholders assume responsibility for quality assurance (Europe 2020..., 2013).

The stakeholder, according to E. Freeman's now classic text “Strategic Management: A Stakeholder Approach (1984), is “any group or individual who can affect or is affected by the achievement of the organization's objectives” (1984, 46). E. Freeman's fundamental argument in his Theory of Stakeholders is that organization is managed not only by shareholders, but by all the stakeholders or their structures, and the safeguarding of their interests operates as a tool for organizational development. This paper relies on the Freeman's definition of a stakeholder and refers to J.C. Hosseini and S. N. Brenner's (1992) category of stakeholder and his interest to influence the processes and results of higher education institution.

The stakeholders in higher education are generally divided into external and internal (Pukelis, Pileičikienė, 2005). The internal group of stakeholders consists of teachers, administration staff, technical staff; while graduates, employers, trade unions, associations, society and parents (when they

pay the fee) belong to the external group. A student belongs both to internal and external stakeholders. On the other hand, the stakeholders in higher education could be divided into the following groups: individuals (students, teachers, students' parents, graduates); organizations (higher education institutions, trade unions, non-profit organizations); employers (regional and national enterprises, international corporations, employers' associations) and governance authorities (regional and national authorities, the divisions of state institutions) (Kaminskienė, 2008).

This attention to stakeholders according to L. Leišytė, F. Westerheijden and E. Epping (2013, 4) is related to the transformed concept of higher education governance and its increased accountability and relevance to society. The internal and external stakeholders in higher education system, as L. Leišytė, F. Westerheijden (2013, 16) claim, take different positions, but keep the common interest in higher education quality assurance. These are the individuals or their groups (professional associations, organizations, alumni) that wish and are able to take responsibility for study programme quality (Pukelis, Pileičikienė, 2010, 109). The Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG, 2015) emphasize the roles of students, employers and other interested parties in implementing the internal and external policy for quality assurance in higher education institutions. According to E. Weert (2011), employer engagement in higher education learning is defined as building the collaborative relationship between employers and higher education in line with meeting the interests of both academic and industries. R. Foskett (2005) argues that higher education institutions strive to improve performance quality and financial state, to develop research, to obtain data on labour market, to increase study programmes' demand, to improve reputation, while employers aim at increasing the flexibility of their employees, developing employees' understanding on company's interests, improving production quality, searching for new staff, improving the status of learners and the prestige of a company. The greater involvement of employers in the governance of higher education school has been driven by their wish to plan the necessary skills and to guarantee the increase of cheap qualified labour force (Weert, 2011).

Nevertheless, the cooperation between educational institutions and stakeholders (students, employers, public organizations) enable to assure study quality and to provide graduates with the appropriate knowledge in their professional field along with understanding of social, economic, legal issues and professional ethics and transferable skills (Pileičikienė, 2011; Bucharest Communiqué, 2012).

As K. Pukelis, I. Savickienė (2010) notices, the effectiveness of stakeholders' cooperation depends on the similarities among their values, mutual trust and the clearly defined and articulated aims to be achieved. However, the following tendency has been observed: the fundamental educational values of humanism, democracy, nationality and renewal have been accompanied by the orientation to employability, focus on universities' role in regional development (Tripl, Sinozic, 2014; Gjelsvik, Arbo, 2014; Neave, 2006) and new models of university governance in cooperation with stakeholders (Boer, Enders, 2007; Trakman, 2008). The empirical findings disclose the reasons why business do work with higher education institutions (Lee, 2000; Olssen, Peters, 2005), the stakeholders' involvement into universities governance (Amaral, Magalhaes, 2002; Boer, File, 2009), stakeholders' input into the study quality assurance (Skolnik, 2010; Tsinidou, Gerogiannis, 2010). This article refers to Lithuania's case and aims to highlight the spectrum of roles emerging for higher education institutions and the employers as stakeholders in the context of preparing students for the labour market. The qualitative research approach enables to reveal peculiarities, role overlapping and challenges.

## Methodology

Aiming to investigate the manifestation of stakeholders' roles (higher education institution and labour market representative) in preparing students for labour market, the qualitative research based on the phenomenological philosophy (Colaizzi, 1978; Kvale, 1996; Creswell, 2007). In the course of qualitative research, the relationship between the theoretical description of phenomenon (the roles of higher education schools and labour market representatives) and its manifestation in social reality has been searched.

*The procedures and instruments of qualitative research.* The qualitative phenomenological research on the manifestation of stakeholders' roles in preparing students for labour market employed the *dialogue* which helped to reveal the experiences of these individuals (Kvale, 1996; Mayring, 2000). Accordingly, the *interview method* enabled to explore the perceptions of research participants, meanings of the



phenomenon and construction of reality (Silverman, 2003a, 2003b; Creswell, 2007). The participants of research were surveyed by *semi-structured interview*, i.e. the open questions were submitted.

*The justification and selection of research sample.* The implementation of qualitative research was based on the representativeness of research sample (Silverman, 2003a, 2003b; Bitinas, 2005). The sample of interview participants was formed in accordance to research aim and the adequate criteria: *the target or criteria based selection* was used when the individuals are chosen deliberately with the aim to receive the specific important information that could not be retrieved in other ways (Kvale, 1996; Bitinas, Rupšienė, 2008).

The sample of qualitative research is made of those subjects under observation who are sufficiently informative in terms of the research and represent the population which is responsible for a particular activity relevant to the research (Bitinas, 2005). Two target groups were formed from the persons who have direct interests in successful preparation of higher education students for the labour market: 19 members of higher education institutions (universities and colleges) [E stands for education] and 42 representatives of labour market [L stands for labour]. The research was carried out in September-November 2013. In data processing stage each participant received a code with the identification of target group ([E] or [L]), a numeral meaning of case and the page number of transcribed text where the meaning context, i.e. the example of statement, was presented.

*Data analysis methods for qualitative research.* The qualitative research data on the manifestation of stakeholders' roles (higher education institutions and labour market representatives) were processed with the qualitative analysis methods of *phenomenological and content analysis*. The phenomenological analysis searched for the answers about the complex nature of phenomenon by describing it according to different approaches. Therefore, phenomenology served not only for describing, but also for interpreting the experiences of participants related to the phenomenon under investigation. The method of *qualitative content analysis* was employed for examining the texts. The meaningful units/statements were derived from the text data. They reflect the experience and the attitudes of research participants related to research issues. The units were coded into explicit categories; the frequency of their usage was calculated and the relationship among distinct elements of text and the whole information scope was evaluated.

## Results and discussion

***Roles of education institutions when solving the problem of students' preparation for the labour market.*** The informants believe the roles of higher schools in the process of preparing prospective qualified specialists for the labour market are miscellaneous, interrelated and coloured with different undertones. In the belief of the education system representatives, higher schools perform the role of an educator that commits them to "*prepare the young people for life responsibly*" [E6, 23], "*<...> develop social and personal skills of the learners; teach them to learn independently*" [E1, 286]. Simultaneously, a higher school also becomes a student, learns and "*<...> carries out the academic work*" [L2, 378], so that it could disseminate the most up-to-date knowledge and experience. Moreover, the roles of an education institution may be intertwined; for example, besides the role of an educator, a role of a mentor is also necessary to enable the young people to find the right choice, "*<...> to tell them that they chose the wrong speciality ('out of his/her element'), would you like to transfer to another speciality that <...> is close to your heart*" [L21, 213]. However, the opinions of informants on this issue: "*a university must do everything to prepare the students for the labour market in the best way possible*" [L4, 86] – single out one of the key roles befalling an education institution – preparing the students for the labour market. This shows that higher schools should commit themselves to become "*a trustworthy bridge between a young person and economy of the country*" [E7, 32], "*to search for a point of contact with employers and businesses*" [L13, 80], "*<...> joint projects, commissions are necessary*" [E14, 142]. Nonetheless, in the opinion of employers, the current situation shows an insufficient contribution of the higher schools to the strengthening of relationships with business companies: "*more involvement would be needed from the part of education system and higher schools*" [L36, 67].

Another role of higher schools of equal significance is that of an observer: "*the interest of education institutions is infinite, <...> whether we examine universities or colleges, they are sufficiently actively involved in monitoring where the young people go, how many of them find jobs*" [L13, 79]; however, that is not enough. Seeking to satisfy the needs of the constantly changing labour market, higher schools

should perform a self-assessment: *“not all specialities are necessary any more <...>, business is changing, a need arises for entirely different professions”* [L2, 382] and, while focusing on the needs of the labour market, the education institutions should *“narrow down the opportunities for the students to waste their time, i.e. reduce the number of specialities and students accepted, monitor the dynamics of the demand for them according to the labour market requirements”* [L6, 119].

The role of an education institution as an employer commits higher schools *“to feel an interest in the abilities of lecturers, one of them being – demanding that the students possess knowledge; that is a proof of their competence”* [L4, 50]. Unfortunately, too big “a stone is cast” at the lecturers working in education institutions, seeing that *“<...> currently, lecturers of higher schools are out of touch with the modern practices – the things that are relevant to the companies”* [L28, 381]. In the opinion of the representatives of the labour market, problems concerning the employment of students also arise because *“<...> higher schools first of all think about attracting the students, who bring the “darned” basket”* [L31, 488]. This proves that a higher school as an employer operates ineffectively under the market conditions and produces a non-competitive “product” – the prepared specialists face difficulties when integrating in the labour market and increase the share of unemployment, although the demand for qualified specialists remains.

The interview content analysis helped distinguishing the subcategories reflecting the contents of the qualitative category ***“Roles of education institutions when solving the problem of student’s preparation for the labour market”***: *educator and employer*.

Subcategory ***“Educator”*** (20 notional contexts) denotes the actualisation of the higher school mission in a constantly changing modern environment. Education is one of the priority objectives of a modern higher school. Its attainment would allow nurturing mature and active personalities. Participants of the interview also emphasised the importance of the mission of education institutions: *“<...> first of all, knowledge has to be provided <...> you have to convey a corresponding portion of theory and to create all possibilities for them to implement and test those in practice”* [L11, 60]. However, it is the belief of employers that the implementation of this objective encounters multiple challenges: *“recently I have been noticing that students are loaded with superficial knowledge”* [L5, 34], whereas the labour market *“requires specialisation rather than generic subjects, it requires namely professional specialisation”* [L39, 130]; in the meantime, if *“<...> the specialisation were to be significantly more narrow, at least ten times deeper, including more practical experience, then the students would face no problems getting a job”* [L42, 123]. Hence, activities of higher schools when pursuing their main mission – preparing prospective qualified young specialists receive significant criticism and reveal the unwillingness or inability of institutions to admit mistakes and search for solutions. Employers propose the following solution: *“education institutions should create a system and approve programmes according to which students could be taught, that would be attractive and necessary for the labour market, and attractive for the students”* [L7, 50]. This allows forecasting that higher schools willing and seeking to perform the roles ascribed to them face a complex systematic period of readjustment that would enable them in the future to prepare specialists in demand in the labour market thus becoming in demand themselves.

After reviewing the contents of subcategory ***“Employer”*** that revealed itself through 17 statements, it can be proposed that this role commits an education institution to acting in such a way as to rally its staff – educators (lecturers) and those being educated (students) for striving towards and implementing the objectives of their own as well as those of the institution. It is noteworthy that this category should be more emphasised as a marketing task: strengthening the positions within the rating of higher schools through attraction of talented, critically-thinking and creative students who search for solutions, and competent lecturers from Lithuania and abroad as well as supporters from business companies. However, the situation of higher schools in Lithuania, in the opinion of representatives of the labour market and education, is threatening due to several reasons. First of all, *“diplomas of Lithuanian higher schools are not recognised <...> globally”* [L12, 7], secondly, they employ *“<...> lecturers who are out of their depth in the subjects they teach, although they should be also competitive-able”* [L17, 103], *“there are still quite many professors in our higher schools <...>, who have been teaching the same subject for 15 or 20 years and all the time saying almost the same things; I have experienced that myself”* [L15, 82]. Thirdly, *“up to date subjects are being taught <...> that no longer exist in practice”* [L16, 114]; fourthly, *“the greatest problem is that we prepare master and bachelor graduates as theorists, not practitioners”* [L12, 15] and fifthly, *“it seems like <...> (higher schools) are concerned*

with themselves rather than the people they are training" [L14, 44]. Consequently, fundamental questions arise quite naturally for the employers: "<...> who prepares the students of nowadays? How well qualified are those trainers? I mean lecturers. What requirements are posed to them?" [L5, 19], "let us also think about the fact whether the students are presently prepared by some of the people who, like the students, also had been making their choice from 14 specialities and when they had no place to go they went to study wherever they had entered <...> and now they teach others? What kind of specialist is that?" [L18, 32]. Hence, higher schools, albeit aware of their shortcomings, respond to the shifts in external environment and changing needs of the labour market slackly or inconsistently, although these would allow initiating changes in the activities of universities and colleges.

**Roles of employers when solving the problem of students' integration in the labour market.** Qualitative content analysis of interviews allowed distinguishing the qualitative category **"Roles of employers when solving the problem of students' integration in the labour market"** that reflects the contribution in terms of community sense of employers when solving the problems of higher school students' integration in the labour market. The research revealed different attitudes of the representatives of the education system and labour market to the building of relations between the business and the society. A number of employers represent the position of the proponents of theoretical branch of neoclassical economics and agency theory evolved from it, which separates the relationships of business and society when solving social problems, whereas funds allocated to social projects are considered to be a waste of money: "This is not the prerogative of employers, because an employer is not interested in creating jobs (the less jobs, the higher the profits). The employers seek to make products incurring lower labour costs" [L30, 231]. Other employers, on the contrary, recognise the importance of relationships between the business and society, and support the stakeholder theory: "It depends very much on the level of employers whether they contribute to the solution of this problem or do not care about it. This means their role depends on their level" [L38, 425]. Being responsible, employers also solve the problems arising in the society together with other stakeholder groups, thus forming a setting conducive to the functioning of business and attainment of positive performance results in the future.

Following the principle of the sense of community, employers perform the *roles of educator, supporter and partner*, which reflect three fundamental qualitative subcategories.

When solving the problem of students' integration in the labour market, the role of the employer as an **"Educator"** (subcategory contains 21 notional contexts) is among the most significant ones in their relationship with the environment that reveals the employees' participation in young people's preparation for professional activities through contribution to the preparation of students for the labour market: "<...> it is popular all over the world that the corporations cooperate with higher schools, <...> send their leaders to give lectures, thus contributing to focused preparation of students for the labour market" [L10, 44]. In the meantime in Lithuania, the role of employers as educators manifests itself only at the end of studies: "I see problems when students search for a company that would accept them for an traineeship – no one accepts them" [L1, 486] as well as upon completion of studies: "after employing the students, employers provide them with additional knowledge, train and develop them as needed" [L4, 56], "<...> we teach the students who come to work the most fundamental things, which they ought to have mastered during their studies, because we are not so rich that we could hire the highest-charging engineers" [L5, 36]. However, "more initiative should be shown by the employers, they should invite young people and create project groups" [L12, 50], employers "need to input the efforts when teaching the new recruits; only then you achieve a result" [L25, 38]. As shown by experience, "the largest companies look around for the first-year students, enable them to participate in traineeships, thus checking if an individual is right for them" [L41, 75], "<...> substantially larger or perhaps financially stronger companies retrain <...> the students, <...> they have internal training courses, <...> they train the graduates of higher schools according to their specifics" [L14, 48]. This corroborates that employers who want to have good employees should "contribute to traineeships and try to mould the image of a desired employee together" [L20, 98].

An employer could contribute to the improvement of the study process in higher schools by performing the role of a **"Supporter"** (subcategory contains 10 statements): "In order to achieve an excellent final result, employers are interested not just in participation in the process, but also in supporting higher schools" [L18, 89], "students could be incentivised too, but they have to assume the initiative and in their papers solve true rather than fictitious problems of a specific company. I see a great potential

here" [L19, 30], "*companies could establish a foundation or assign bonuses, <...> motivation for the students appears that perhaps one of them will be noticed*" [L12, 52]. This is a voluntary initiative from the employers' part. If used irresponsibly, it could yield negative results, because "*recently, business has been viewed as a sack of money; it should support, sponsor, give away*" [L12, 121].

Although in our country, "*the patronage practice is not common yet, where they could contribute financially as well as give lectures from the practical point of view*" [L1, 502], the first steps, nonetheless, have already been made: employers are partners of higher schools. Content (18 notional contexts) of the subcategory "**Partner**" reveals that "*we cooperate with a number of higher schools and never refuse to help*" [L32, 122], "*we accept as many as we can for the traineeships*" [L14, 46]. However, "*the presence of business at universities*" is insufficient, because "*the initiative of employers to renovate the laboratories, introduce specific technologies and equipment is lacking, so that the students could create, solve real problems of companies proposed by employers in the course of their studies and learned to operate the equipment*" [E4, 42]. The enduring unfavourable situation on the labour market where graduates trained by higher schools find it difficult to integrate themselves in the labour market albeit vacancies are available due to the shortage of qualified specialists inspires the employers to take the initiative in solving this problem. The informants state that "*employers have to interact with the science more. Currently, this process is moving along with great difficulty. More accurately, when someone exerts some pressure, they gather together to talk <...> there should be common objectives*" [L7, 55]. Furthermore, "*an important role should be played by Chambers of Commerce, Industry and Crafts, <...> they join all employers, <...> universities and colleges are also members, let us come together and <...> talk about the specialists we need*" [E8, 38]. Territorial labour exchanges could become and serve as an intermediary between the employers and higher schools: "*we cooperate intensively with the labour exchange and search for good specialists there, however cannot find them*" [L28, 37]. Nonetheless, "*the employers should involve themselves rather more actively*" [L30, 100], because "*if you want to get a good employee you must contribute: whether to the training base or establishment of their practical skills; otherwise one should not expect a well-trained specialist*" [L5, 61].

The research results suggest that the responsibility for preparing higher education students for labour market should be shared among educational institutions and employers; their interaction, however, is negligible and the manifestation of their roles is not evenly distributed. The educational institutions by default play the roles of educator, employer, mediator and observer, while employers tend to perform the roles of educator, supporter and partner. Unfortunately, the boundaries of their responsibility and commitment are not clearly defined.

## Conclusions

The stakeholders (both the employers and educational institutions) have been performing significant roles in the process of preparing students for labour market. On the declarative level, they clearly perceive that their roles of *educator, employer, mediator, observer* and others are important and their mutual cooperation is vital.

However, the analysis of qualitative research results revealed the controversies in the manifestation of the mentioned roles. Employers' role as *partner* is limited to the oral support; their role of *supporter* is problematic because of the lack of clear understanding how the mechanisms of sponsorship for students operate. The role of *educator* is performed in the end of study process and this implies the notion of *instructor's* role when undergraduates are introduced to the workplace and are trained to perform the specific functions attributed to this workplace.

The *educator's* role performed by educational institutions is one of the essential roles; however, it is criticized by employers. This fact calls for the significant transformations of this role with the intention to prepare high quality specialists in demand by labour market. The role of *employer* implies for the educational institutions to hire and maintain the high quality teaching staff who directly influences the quality of study process and study programmes.

In conclusion, the participation of stakeholders in the preparation of students for labour market is more politically declarative than proactive and lacks the mutual dialogue and cooperation.

## Bibliography

1. Amaral A., Magalhaes A. (2002). The Emergent Role of External Stakeholders in European Higher Education Governance. In *Governing Higher Education: National Perspectives on Institutional Governance*, pp. 1 – 21. [online] [15.10.2016]. Available at [http://link.springer.com/chapter/10.1007%2F978-94-015-9946-7\\_1](http://link.springer.com/chapter/10.1007%2F978-94-015-9946-7_1)
2. Bitinas B. (2005). *Edukologinis tyrimas: sistema ir procesas (Research in Educational Sciences: System and Process)*. Vilnius: Kronta (in Lithuanian)
3. Bitinas B., Rupšienė L., Žydzūnaitė V. (2008). *Kokybinių tyrimų metodologija: vadovėlis vadybos ir administravimo studentams (Qualitative Research Methodology: Handbook for Business and Management Students)*. Klaipėda: S. Jokužio leidykla (in Lithuanian)
4. Boer H., Enders J., Schimank U. (2007). On the Way Towards New Public Management? The Governance of University Systems in England, the Netherlands, Austria, and Germany. In Jansen D. (Ed.). *New Forms of Governance in Research Organizations*, pp. 137 – 152. [online] [15.10.2016]. Available at [http://link.springer.com/chapter/10.1007%2F978-1-4020-5831-8\\_5](http://link.springer.com/chapter/10.1007%2F978-1-4020-5831-8_5)
5. Boer H., File J. (2009). *Higher Education Governance Reforms Across Europe*, Brussel: ESMU. [online] [15.10.2016]. Available at <http://doc.utwente.nl/88691/1/c9hdb101%20modern%20project%20report.pdf>
6. *Bucharest Communiqué*. (2012). Making the most of our Potential: Consolidating the European Higher Education Area. European Higher Education Area Ministerial Conference. Bucharest. [online] [07.10.2016]. Available at [http://www.eurashe.eu/library/ehea\\_2012\\_bucharest-communicue-pdf](http://www.eurashe.eu/library/ehea_2012_bucharest-communicue-pdf)
7. Colaizzi P. (1978). Psychological Research as the Phenomenologist Views. In Valle R.S., Kings M. (Eds.). *Existential-Phenomenological Alternatives for Psychology*. New York: Oxford University Press.
8. Creswell J.W. (2007). *Qualitative Inquiry and Research Design. Choosing among Five Approaches*. Thousand Oaks: Sage Publications.
9. *Europe 2020: Europe's Growth Strategy*. (2013). Luxemburg: Publications Office of the European Union. [online] [11.10.2016]. Available at [http://ec.europa.eu/europe2020/pdf/europe\\_2020\\_explained.pdf](http://ec.europa.eu/europe2020/pdf/europe_2020_explained.pdf)
10. Foskett R. (2005). Collaborative Partnership between HE and Employers: a Study of Workforce Development. *Journal of Further and Higher Education*, Vol. 29 (3), pp. 251 – 264.
11. Freeman R. E. (1984). *Strategic Management: A Stakeholder Approach*. Boston: Pitman.
12. Gjelsvik M., Arbo P. (2014). The Differentiated Role of Universities in Regional Development Paths. [online] [22.10.2016]. Available at [http://www.uis.no/getfile.php/Conferences/RIP2014/Publish\\_RIP2014%20ID1368%20Gjelsvik%20and%20Arbo.pdf](http://www.uis.no/getfile.php/Conferences/RIP2014/Publish_RIP2014%20ID1368%20Gjelsvik%20and%20Arbo.pdf)
13. Hosseini J.C., Brenner S.N. (1992). The Stakeholder Theory of the Firm. *Business Ethics Quarterly*, Vol. 2 (2), pp. 99 – 119.
14. Kaminskienė L. (2008). *Socialinė partnerystė mokyklinėje profesinio rengimo sistemoje (Social Partnership in the School Based Vocational Education and Training System)*. Doctoral Thesis, Kaunas: Vytauto Didžiojo universitetas. [online] [10.10.2016]. Available at [http://vddb.library.lt/fedora/get/LT-eLABa-0001:E.02~2008~D\\_20081202\\_100405-39903/DS.005.0.01.ETD](http://vddb.library.lt/fedora/get/LT-eLABa-0001:E.02~2008~D_20081202_100405-39903/DS.005.0.01.ETD) (in Lithuanian)
15. Kvale S. (1996). *Interviews. An Introduction to Qualitative Research Interviewing*. Thousand Oaks: Sage.
16. Lee Y. (2000). The Sustainability of University-Industry Research Collaboration: An empirical assessment. *Journal of Technology Transfer*, Vol. 25, pp. 111 – 133.
17. Leišytė L., Westerheijden F. (2013). Studentai kaip kokybės užtikrinimo socialiniai dalininkai aštuoniose Europos valstybėse (Students as Stakeholders in Quality Assurance in Eight European Countries). *Aukštojo mokslo kokybės tyrimai (Research on Quality of Higher education)*, Vol. 10, pp. 12 – 27. [online] [14.11.2016]. Available at [http://skktg.vdu.lt/downloads/AMK\\_Nr.10\\_12-27.pdf](http://skktg.vdu.lt/downloads/AMK_Nr.10_12-27.pdf) (in Lithuanian)
18. Leišytė L., Westerheijden F., Epping E., Faber M., de Weert E. (2013). *Stakeholders and Quality Assurance in Higher Education*. [online] [14.11.2016]. Available at <http://doc.utwente.nl/87677/1/Stakeholders-QA-IBAR-CHER2013.pdf>

19. Mayring P. (2000). Qualitative Content Analysis. *Forum Qualitative Social Research*. Vol. 1 (2). [online] [15.10.2016]. Available at <http://www.qualitative-research.net/index.php/fqs/article/view/1089>
20. Neave G. (2006). Redefining the Social Contract. *Higher Education Policy*, Vol. 19, pp. 269 – 286.
21. Olssen M., Peters M. A. (2005). Neoliberalism, Higher Education and the Knowledge Economy: From the Free Market to Knowledge Capitalism. *Journal of Education Policy*, Vol. 20 (3), pp. 313 – 345.
22. Pileičikienė N. (2011). Socialinių dalininkų bendradarbiavimas užtikrinant studijų programų kokybę: teorija ir praktika Lietuvoje (Stakeholders' Cooperation in the Study Programme Quality Assurance: Theory and Practise in Lithuania). *Aukštojo mokslo kokybė (The Quality of Higher Education)*, No. 8, pp. 132 – 157. (in Lithuanian)
23. Pukelis K., Pileičikienė N. (2005). Studijų kokybė: studijų rezultatų paradigma (The Quality of Higher Education: Paradigm of Study Outcomes). *Aukštojo mokslo kokybė (The Quality of Higher Education)*, Vol. 2, pp. 96 – 107. (in Lithuanian)
24. Pukelis K., Pileičikienė N. (2010). Improvement of Generic Skills Development in Study Programmes of Higher Education: The Graduates' Viewpoint. *The Quality of Higher Education*, Vol. 7, pp. 88 – 107.
25. Pukelis K., Savickienė I., Sajienė L., Danilevičius E., Šidlauskas K., Dvarionas D., Spaičienė J., Vyšniauskytė-Rimkienė J. (2010). *Studijų programų atnaujinimas studijų rezultatų pagrindu (Renewal of Study Programmes on the Basis of Learning Outcomes)*, Kaunas: VDU (in Lithuanian).
26. Silverman D. (2003a). *Doing Qualitative Research: a Practical Handbook*. London: Sage Publications.
27. Silverman D. (2003b). *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction*. London: Sage Publications.
28. Skolnik M. L. (2010). Quality Assurance in Higher Education as a Political Process. *Higher Education Management and Policy*, Vol. 22 (1), pp. 1 – 20.
29. *Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)*. (2015). Brussels, Belgium. [online] [14.11.2016]. Available at [http://bologna-yerevan2015.ehea.info/files/European%20Standards%20and%20Guidelines%20for%20Quality%20Assurance%20in%20the%20EHEA%202015\\_MC.pdf](http://bologna-yerevan2015.ehea.info/files/European%20Standards%20and%20Guidelines%20for%20Quality%20Assurance%20in%20the%20EHEA%202015_MC.pdf)
30. Trakman L. (2008). Modelling University Governance. *Higher Education Quarterly*, Vol. 62 (1- 2), pp. 63 – 83.
31. Trippl M., Sinozic T., Smith H. L. (2014). The Role of Universities in Regional Development: Conceptual Models and Policy Institutions in the UK, Sweden and Austria. [online] [10.10.2016]. Available at [http://wp.circle.lu.se/upload/CIRCLE/workingpapers/201413\\_Trippl\\_et\\_al.pdf](http://wp.circle.lu.se/upload/CIRCLE/workingpapers/201413_Trippl_et_al.pdf)
32. Tsinidou M., Gerogiannis V., Fitsilis P. (2010). Evaluation of the Factors that Determine Quality in Higher Education: An Empirical Study. *Quality Assurance in Education*, Vol. 18 (3), pp. 227 – 244.
33. Weert E. (2011). *Perspectives on Higher Education and the Labour Market*. Review of International Policy Developments. IHEM/ CHEPS Thematic report. [online] [12.11.2016]. Available at <https://www.utwente.nl/bms/cheps/publications/Publications%202011/C11EW158%20Final%20version%20Themarapport%20onderwijs%20-%20arbeidsmarkt.pdf>



## Importance of Goal-Setting Tasks in Career Counselling

Anita Racene Mg. oec., Mg. ed.

Institute of Education and Home Economics, Latvia University of Agriculture, Latvia

[arz.pluss@inbox.lv](mailto:arz.pluss@inbox.lv)

**Abstract:** The paper deals with the research results on the importance of goal-setting tasks in career counselling. The problem is urgent – setting high goals by youth influences their achievements in studies and their success in their lives. The research aim is to analyse the results of completing goal-setting tasks by vocational school students in career counselling classes. A review of theory and an analysis of the tasks completed by the vocational school students were performed to achieve the aim. The study involved 74 vocational school students aged 17-29. The study revealed that the respondents most often set the following goals: starting a family, starting up a business and becoming a good specialist in the chosen profession. The present research will contribute to the understanding of importance of goal-setting tasks in career counselling and give insight into youth's goals in their lives. Clients develop their abilities to think, plan and analyse and define their life goals owing to goal-setting tasks. The present research findings are useful for career and personnel selection specialists in the career counselling.

**Keywords:** goal, goal setting, task, career counselling, vocational education.

### Introduction

Most EU Member States have defined that career counselling is an interdisciplinary, theoretical and applied science that integrates the theories and practices of psychology, health sciences, pedagogy, economics, management, law. To help clients understand and successfully achieve their career and job goals, a career counsellor gives advice in all career guidance and development aspects through guidance, psychological counselling, coaching and advisory techniques. There are several kinds of career counselling. Based on their education, professional skills built up throughout the lifetime, experience, personal interests and goals as well as based on clients' needs, in some countries career counsellors do their practice as career pedagogues, while in other countries they are career therapists, career coaches, mentors, mediators, supervisors. The role of a career counsellor partially overlaps with the responsibilities of other professions, such as human resources manager, an employment psychologist and a job psychologist. (Karjeras konsultāciju ..., 2009).

*Career counselling* is defined as assistance to people to contribute to their self-cognition, the identification of their professional talents, a profound understanding of their own education and labour market opportunities that best fit the personalities, their own values and life goals. Career counselling may involve career planning, identifying professional adequacy, job trials and building up job-seeking and job-retention skills (Karjeras attīstības..., 2008).

The effectiveness of career counselling outcomes is important in career guidance. On the result of using any career counselling method the distressed people's lives should be improved. R.V. Peavy (1929-2002) suggested asking oneself a question when choosing some particular technique – does this technique contributes to a smart choice? Does this counselling technique helps answer a question, “How should I live my life?” (Pīvijs, 2011).

R.V. Peavy asserted that counselling was based on smartness, and this means that the “best” ideas have to be considered and evaluated. Besides, the concept of counselling based on smartness is consistent with the position that giving assistance is an activity guided by ethical decisions (Pīvijs, 2011). For this reason, a technique chosen by a career counsellor to be employed in career counselling sessions has to be reasonable.

The term “career” was derived from the Latin word “carrus”, which meant a passage, a way or a wagon. A human's carer is his/her life. In this respect, any counselling is career counselling, as the counselling relates to the human's life. Counselling itself represents signposts throughout the lifetime (Pīvijs, 2011).

R. Kochyunas (Кочюнас, 2000) classified counselling into four kinds, which may be used by a career counsellor:

1. advising;
2. informative counselling;



3. diagnostic counselling;
4. formative and corrective counselling.

Advising may be a component of individual and group counselling. Usually, advice is given to clients about where to search for information; the clients are advised on how to tackle their personal problems and how to assist their personality growth and to whom ask for help to solve the problems being beyond the counsellor's competences.

Informative counselling is a kind of counselling used when starting working with clients who have no idea of the working world or who have certain wishes, but they lack information about, e.g., basic requirements to work in the profession they are interested in, organisations and institutions where jobs in the profession are vacant (Солюмин, 2007).

Informative counselling is characterised by the counsellor's high activity. Information has to be given to the client in detail (with addresses, phone numbers, surnames).

Diagnostic counselling is usually associated with the identification of the client's professional appropriateness. The counsellor may suggest the client, e.g., how to match his/her wishes with his/her psychological and physiological possibilities; which professions he/she should avoid if his/her psychological and physiological possibilities do not meet the profession's standards; ways and techniques for developing or enhancing his/her attention, memory and spatial thinking (Kidd, 2006).

L. Bramer and E. Shostrom (1982) as well as G. Corey (1990) believe that the client has to take part in the choice of diagnostic tests. The counsellor's duty is to explain him/her that test scores show only a tendency and to tell him/her about his/her diagnostic results in an understandable way, but to interpret the results from a neutral perspective. The counsellor has to understand the client's reaction on the interpretation (Spiegel, Hill, 1989).

Formative and corrective counselling is a kind of counselling that is applied at the end of any counselling session. The expected degree of the client's satisfaction with the chosen profession, to a great extent, is associated with whether his/her expectations match the real specifics of the profession. The counsellor's corrective work takes place at the level of the client's advantages, expectations, notions and social principles, and no definite algorithm exist for it (Brown, Brooks, 1991). The counsellor usually helps the client to see and comprehend the life prospects. It requires a broader view on the client's situation, as the profession and the job are only the first link in the entire chain of life choices, in which social advancement, financial wellbeing and mental development are an important skill. The core of life prospects is one's value-orientation as well as life goals and plans. The client has to be assisted to understand both the differences and the connections among these terms.

However, when choosing advising as the kind of career counselling to be employed, three reasons have to be considered with regard to why the advising has to be treated cautiously (Pīvijs, 2011):

- 1) any advice could turn out to be incorrect;
- 2) advice can be good; yet, it could be implemented incorrectly;
- 3) if advice – either good or poor – does not yield the expected result, the taker of the advice could blame the advice giver for the poor advice. This means that advising can contribute to the fact that the advice seeker avoids his/her responsibility.

A goal is defined as a certain expected situation or result to be achieved by an individual (AkadTerm, 2016). Goal-setting tasks are very important in career counselling, as any individual has been born with his/her own specific life mission, and the identification, awareness and acceptance of this life mission are the most important actions of successful individuals (Kenfilds, Svicere, 2012). If one's life lacks a goal, the countless trials to do something about it yield no results, time and resources are wasted and the individual has not realised him/herself and feels unhappy.

The choice of a technique – owing to setting a goal, the client develops his/her ability to think, plan and analyse and to define his/her life goal.

The research aim is to analyse the results of completing goal-setting tasks by vocational school students in career counselling classes.

## Methodology

To achieve the research aim, goal-setting tasks were developed and approved at vocational education institutions in career counselling classes. The present research analysed the results of completing the mentioned tasks. A study was conducted during career counselling classes, requesting youth aged 18-29 to perform a goal-setting task. The study involved 74 young individuals. The study was conducted from 1 September 2016 to 22 November 2016.

The research aim was to analyse the results of completing goal-setting tasks. Specific research tasks:

1. To theoretically discuss goal-setting theories.
2. To analyse the results of completing goal-setting tasks by students.

An analysis of the goal-setting theories was done to perform the research tasks and achieve the research aim. To analyse statistical data, descriptive statistics was employed using MS Excel. The task method was employed to analyse goal-setting tasks. The terms for a goal-setting task were as follows: at least five goal achievement stages had to be defined in order to set a goal. The place of conducting the study: vocational education institutions in Zemgale region – Jelgava Crafts Secondary School, Zalenieki Commercial and Crafts Secondary School and Jelgava Secondary Technical School.

## Results and discussion

### Goal-setting theories

Goal-setting is an effective way of motivating oneself and others. The founders of goal-setting theory were American psychologists E. Locke and G. Latham who, based on an assumption about human rational behaviours, developed a goal-setting theory (Locke, 1968, Locke, Latham, 1990). E. Locke and G. Latham found that humans set conscious goals that, at the same time, served both as motivation and as task performance drivers. The effectiveness of achieving a goal is influenced by three aspects: proximity, difficulty and specifics. A well-defined goal fits SMART (specific, measurable, achievable, realistic, time-targeted) criteria. A goal is the form of motivation. The result of target is satisfaction with the progress made (Locke, Latham, 2006). One should set a goal that is achievable, and it has to be done within a short period. The more complicated the goal, the greater satisfaction is achieved. Besides, the higher the goal, the higher requirements have to be set for oneself. The more specific the goal, the higher performance level has to be set, compared with a general goal. J. Canfield and J. Switzer assert that any goal has to be measurable (Kenfilds, Svicere, 2012). The key principles of achieving a goal are defined by I. Melbārde (Table 1).

Table 1

**Key principles of achieving a goal**  
(Melbārde, 2004,2007)

No	Key principle	Example
1	Any goal has to be defined in a positive form.	Instead of <u>running away from</u> ..., there should be movement <u>towards</u> ... Instead of saying: "I do not want", you have to say: "I want."
2	The goal has to be dependent on the individual him/herself.	"I want me to be/ to do" instead of "I want them to be/ to do..."
3	The goal has to be clearly imagined.	It is important to precisely imagine what it will be when the goal is achieved. If we do not know what we want to achieve, it may happen that we have achieved the goal, but we do not notice it.
4	The goal has to be placed into the right context.	Where, how and what I want to achieve? Whom with I do not want to do it? „I want to be demanding.” (Always and everywhere, not only at the job?)
5	The goal has to be ecological or “friendly”.	Is the goal worth my efforts? How the achievement of the goal will influence my life and the lives of my relatives? What important thing I am going to lose if I achieve the goal? What is the price of achieving the goal? Is it beneficial for me to achieve the goal? What are the negative side effects?

No	Key principle	Example
6	The goal has to be set on a real scale.	„I wish to have success in any sphere of my life.” (Which life spheres are the most important?)
7	The goal has to be based on available resources.	What resources are necessary to achieve the goal? What resources are already at my disposal? What else is needed to achieve the goal?
8	What are potential obstacles on the way towards the goal?	What hinders me from achieving the goal? Why I had not achieved the goal earlier? What are other potential ways to achieve the goal?
9	What are the first steps on the way towards the goal?	What I am going to do first to achieve the goal? Where and when I am going to do my first steps to achieve the goal?

There are large and small goals, short-term and long-term ones. Individuals like small goals, as such goals require less efforts and time to be achieved. When achieving a goal, a risk is the easy achievability of the goal (Stabiņš, Pupiņš, 2008). The importance of achieving a small goal is quite small, therefore, the achievement of it is postponed.

Large goals are nice and attractive, and they create pleasure. The risk of setting a large goal is that individuals can make mistakes, overestimating their abilities, skills, knowledge, experience and resources, and this could result in frustration, depression and looking for the one to blame for (Stabiņš, Pupiņš, 2008). Setting high goals influences youth's achievements in their studies and success in their lives. Although, the children grow, change their goals, the success in the school is an important step for the successful selection of the wide range of opportunities offered by the future. Parents and the family make the greatest influence on a child, while youth and their parents are undoubtedly affected by the environment where they live. Mentors, parents, friends, the school and voluntary youth organisations play an important role in shaping the youth's understanding of their potential opportunities as well as in building up their skills needed for achieving their goals (Karjeras atbalsta ..., 2010). Children whose parents expect good school results from them are usually more successful than their peers whose parents do not expect good school results from them (Downey, 2002).

If there is a goal in the life, this means that the individual does what he/she likes very much and what he/she is good at; the individual does what it is important for him/her. Consequently, the individual him/herself and the surrounding community are the gainers because, if the individual acts in line with the true goal of his/her life, all his/her actions automatically serve for the whole community (Kenfilds, Svicere, 2012).

An examination of a number of cases has proved that wishes are the key driver in making decisions by youth regarding how to achieve success in their studies. However, practice shows that their choices, decisions and behaviours are influenced by a number of social, economic and situational factors (Learning and Skills..., 2009).

Traditional reasons that prevent from achieving a set goal are as follows (Stabiņš, Pupiņš, 2008):

- idleness;
- addiction to alcohol, drugs;
- addiction to computer games, serial movies;
- dependence on the opinions of others;
- uncontrolled emotions;
- lost time;
- strong emotional relationships with close individuals;
- stress;
- inability to decide;
- no confidence in oneself and one's abilities;
- low professionalism.

### Analysis of goal-setting tasks

The study was conducted from 1 September 2016 to 22 November 2016; during the individual and group career classes “Setting a goal”, 74 vocational secondary school students were asked to perform a goal-setting task. The questionnaire was developed using the matrixes available on the website [www.visidati.lv](http://www.visidati.lv) in order that the respondents could fill in their questionnaire in an easy and comfortable way. The results were processed employing the grouping method and descriptive statistics using MS Excel (Paura, Arhipova, 2002). The age indicators of the youth who participated in the study could be determined using the MS Excel tool for descriptive statistics (Table 2).

Table 2

Age indicators of the youth who participated in the study		
No	Indicator	Characteristics of the sample
1	Average	23.96
2	Mode	29
3	Median	24
4	Range	11
5	Minimum	18
6	Maximum	29
7	Number of respondents	74

After analysing the data, one can find that the youth aged from 18 to 29 years participated in the study. Their age range was 11 years, the mode was 29, the median was 24 and the arithmetic average for their age was 23.96 years. The mode is a value that appears most frequently in a series of numbers (Arhipova, Bāliņa, 2003). The most questionnaires were filled in by the students aged 29. The median is a value in the middle of a series of values sorted ascending or descending order (Arhipova, Bāliņa, 2000; 2003). The distribution of the respondents by gender was as follows: 66 % were women, 34 % were men. An example of the task with the replies given by a respondent is presented in Table 3.

Table 3

Five goal achievement stages		
No	Respondent – a man, 26 years old	
	Stage description	To achieve it, I need:
1	Higher education, a lawyer.	Money and time for studies.
2	Doctor's degree in law.	It is necessary to acquire a bachelor's or master's degree in law.
3	High job position in the profession. A job position at the Supreme Court, the Corruption Prevention and Combating Bureau or any other state administration institution.	It is necessary to have critical thinking, manager competences (or skills), accuracy at the job.
4	Financial stability, a nice house, a family.	All previous plans and goals have to be performed and achieved. It is necessary to build up one's knowledge in the field of finance.
5	Happy family, children and good education for the children.	It is necessary to have an ability to care about others and oneself and to persistently raise one's qualification.
6	My goal – a happy, prosperous and pleasant old age, assistance to children and grandchildren; no problems.	It is necessary to achieve what was mentioned above, persistently educate oneself and take care about one's health.

The study results were summarised by kind of goals (Figure 1). The goals related to starting a family were set by 15 % of the youth; the goals related to establishing one's own enterprise were set by 26 %; the goals associated with the speciality of the chosen profession were set by 27 % and the goals related

to raising one's qualification or acquiring higher education were set by 7 % of the youth; other goals were set by 25 %.

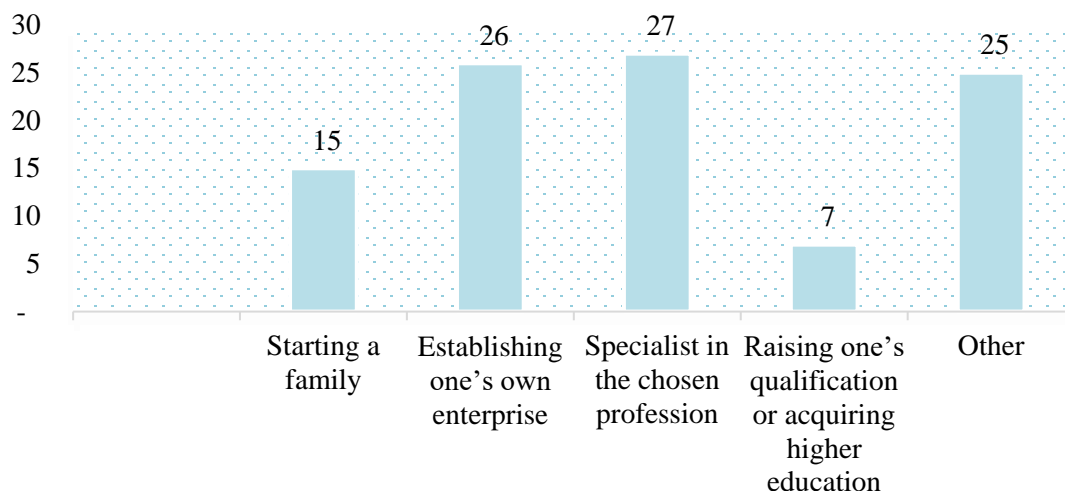


Figure 1. Percentage distribution of the goals by kind of activity [author's construction].

According to the data, the following goals related to starting a family were mentioned: starting one's own family; bringing up a child and making him/her a good person; a happy family. The goals related to establishing one's own enterprise were as follows: founding a manicure salon, one's own enterprise and a fashion salon. The goals related to becoming a good specialist in the chosen profession were as follows: becoming a chief accountant, an auto diagnostician, a visagiste, a cook, a customer service specialist. The goals related to acquiring education were as follows: starting studies at Latvia University of Agriculture, the University of Latvia or another university. Among the other goals mentioned by the respondents in their questionnaires, there were mentioned the following: doing a job that I enjoy, earning a high wage, having a highly paid and pleasant job, being rich, finding the right way to go throughout the lifetime, doing things I like, making happy close relatives and doing a job that I like.

The research data were summarised by goal achievement term: long- and short-term (Figure 2). Long-term goals were set by 78 % of the youth, while short-term goals by 22 %.

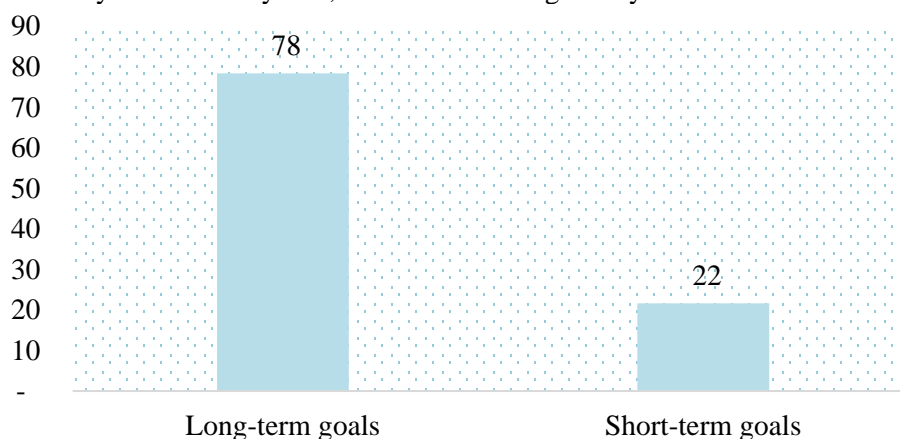


Figure 2. Percentage distribution of the goals by term [author's construction].

According to the study, the long-term goals (implementation time more than a year) were as follows:

- making the children's-professional career dream to come true and, in parallel with it, getting a stable job;
- establishing a happy family and working with pleasure at one's own or family enterprise;
- founding a manicure salon;
- establishing one's own enterprise;
- developing a successful business having great export and import opportunities;

- bringing up a child and making him/her a good person;
- keeping the native land in good shape, building a house in countryside where to spend the most pleasant moments with the family.

The study revealed the following short-term goals (implementation time to a year):

- completing a study programme in metalworking;
- acquiring a visagiste diploma;
- passing a qualification examination;
- finishing Jelgava Secondary Technical School.

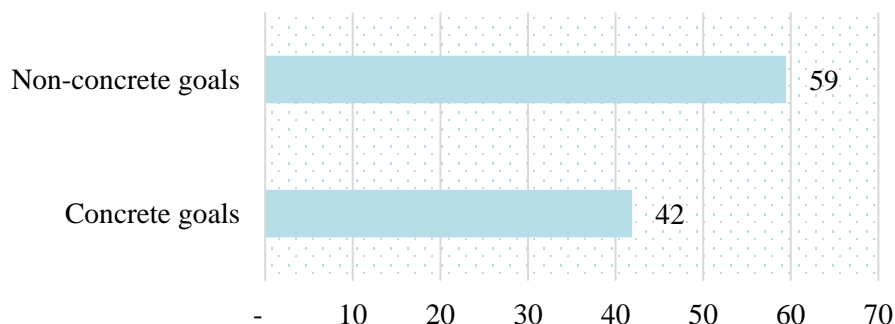


Figure 3. Percentage distribution of the goals by definition quality [author's construction]

According to the study, concrete goals were as follows (Figure 3):

- founding a manicure salon;
- taking a chief accountant position;
- having a job position at the Children Protection Association;
- completing a customer service course;
- establishing one's own shop;
- opening a fashion house in Jelgava;
- designing ball-jointed dolls;
- becoming a famous hairdresser/barber and a visagiste;
- working as an architect or a project manager at an architect bureau;
- acquiring a visagiste diploma;
- passing a qualification examination.

The study revealed the following non-concrete goals:

- doing a job that I enjoy;
- earning a high wage;
- being rich;
- creating one's own dream;
- finding a job appropriate for myself that gives satisfaction and pleasure;
- doing what I like to do in my life and being happy;
- reaching a high life quality for myself and my family!
- being happy, free from financial liabilities and the most important – living one's life instead of surviving;
- having a favourable life.

The completion of a goal-setting task in a career counselling class contributes to making a smart choice by the youth, and this counselling technique helps answer a question, "How should I live my life?" The completion of a goal-setting task by the youth develops their abilities to think, plan and analyse and to define their life goal.

## Conclusions

- An individual's career is a conscious and purposeful action aimed at achieving the personal and professional goals throughout the lifetime. Career counselling provides assistance to individuals to identify their abilities and professional talents, to plan their careers, to identify their

professional appropriateness and to build up their job-seeking skills in order that they can effectively set and achieve their goals. It is advised to use four kinds of career counselling: advising and informative, diagnostic, formative and corrective counselling.

- A goal has to be professionally set, i.e. defined positively and concretely; it has to be achievable within a quite short period (not more than 1-2 years), and it has to be dependent on oneself and available resources; it has to be ecological, i.e. friendly to the surrounding community and environment; it has to be measurable, and particular steps have to be envisaged for its implementation. The higher the goal, the greater satisfaction it brings to the individual. If the individual is satisfied with what he/she has achieved, this motivates him/her to make further achievements.
- An analysis of the study data revealed that the vocational secondary school students most often set the following life goals: starting a family, starting up a business and becoming a good specialist in the chosen profession. The completion of a goal-setting task in a career counselling class contributes to making a smart choice by the youth in respect to their future educational programme and to thinking reasonably and step-by-step about their future profession. The completion of a goal-setting task by the youth develops their abilities to think, plan and analyse and to define their life goal.
- The present research findings are useful for career counsellors and personnel selection specialists, as the findings contribute to the understanding of importance of goal-setting tasks in career counselling.

## Bibliography

1. *AkadTerm Akadēmiskā terminu datubāze (Database of Academic Terms)*. (2016). [online] [15.11.2016]. Available at <http://termini.lza.lv/term.php?term=m%C4%93r%C4%B7is&lang=LV> (in Latvian)
2. Arhipova I., Bāliņa S. (2000). *Statistika ar MS Excell ikvienam: Mācību līdzeklis 2. daļa. (Statistics with MS Excel for Everyone: Textbook. Part 2)*. Rīga: Datorzinību centrs. (in Latvian)
3. Arhipova I., Bāliņa S. (2003). *Statistika ekonomikā (Statistics in Economics)*. Risinājumi ar SPSS un Microsoft Excel. Mācību līdzeklis. (Solutions with SPSS and Microsoft Excel. Learning Tool). Rīga: Datorzinību centrs. (in Latvian)
4. Bramer L., Shostrom E. (1982). *Therapeutic Psychology: Fundamentals of Counseling and Psychotherapy* (4th ed.). Englewood Cliffs, N.Y.: Prentice Hall.
5. Brown D., Brooks L. (1991). *Career Counselling Techniques*. Boston: Allyn & Bacon.
6. Corey G. (1990). *Theory and Practice of Group Counseling* (3rd ed.). Pacific Grove, CA: Books/Cole.
7. Downey D. (2002). Parental and Family Involvement in Education. *School Reform Proposals: the Research Evidence*, pp. 113 – 134. [online] [15.11.2016]. Available at <http://nepc.colorado.edu/files/summary-06.downey.pdf>
8. *Karjeras konsultāciju pakalpojuma etalonmērījums (Bench-marking of Career Counseling Service)*. (2009). Pētījums NVA. [online] [22.11.2016]. Available at <http://www.nva.gov.lv/index.php/print.php?txt=1580> (in Latvian)
9. *Karjeras attīstības atbalsts: izglītība, konsultēšana, pakalpojumi (Guidance: Education, Counseling, Services)*. (2008). Rīga: Valsts izglītības attīstības aģentūra. [online] [22.11.2016]. Available at [http://www.viaa.gov.lv/files/news/727/karjeras\\_attiistiibas\\_atbalsts\\_2008.pdf](http://www.viaa.gov.lv/files/news/727/karjeras_attiistiibas_atbalsts_2008.pdf) (in Latvian)
10. *Karjeras atbalsta pasākumi riska grupu jauniešiem – Caur mācīšanos uz darbu (Guidance and Counselling for Risk Youth - Through Learning to the Job)*. (2010). Rīga: Valsts Izglītības attīstības aģentūra. [online] [22.11.2016]. Available at [http://www.viaa.gov.lv/files/news/727/karjeras\\_atbalsta\\_pasakumi\\_2010.pdf](http://www.viaa.gov.lv/files/news/727/karjeras_atbalsta_pasakumi_2010.pdf) (in Latvian)
11. Kenfilds Dž., Svicerē Dž. (2012). *Panākumu principi. Kā no turienes, kur esat, nokļūt tur, kur vēlaties būt. (The Principles of Success. How from there, where you are, to get to where you want to be.)* Rīga: Zvaigzne ABC. (in Latvian)
12. Kidd J. M. (2006). *Understanding Career Counseling. Theory, Research and Practice*. London, UK: Sage Publications.



13. Locke E.A. (1968). Toward a Theory of Task Motivation and Incentives. *Organizational Behavior & Human Performance*, Vol. 3, pp. 157 – 189.
14. Locke E., Latham G. (1990). *A Theory of Goal Setting and Task Performance*. Englewood Cliffs, NJ: Prentice Hall.
15. Locke E., Latham G. (2006). New Directions in Goal-Setting Theory. *Current Directions in Psychology Science* Vol. 15 (5), pp. 265 – 268. [online] [22.11.2016]. Available at <https://home.ubalt.edu/tmitch/642/Articles%20syllabus/Locke%20et%20al%20New%20dir%20goal%20setting%2006.pdf>
16. Melbārde I. (2004). *Kad sapņi piepildās. Neirolingvistiskā programmēšana (When Dreams Come True. Neuro-Linguistic Programming)*. Rīga: Zvaigzne ABC. (in Latvian)
17. Melbārde I. (2007). *Es vienmēr zinu, ko vēlos. Neirolingvistiskā programmēšana. (I Always Know what I Want. Neuro-Linguistic Programming)*. Rīga: Zvaigzne ABC. (in Latvian)
18. Paura L., Arhipova I. (2002). *Neparametriskās metodes: SPSS datorprogramma (Non-parametric Methods: Computer Program SPSS)*. Jelgava: LLKC. (in Latvian)
19. Pīvijs R.V. (2011). *Sociodinamiskā konsultēšana: praktiska pieeja nozīmes veidošanai (Socio-Dynamic Counseling: a Practical Approach to Making the Meaning)*. Rīga: Valsts izglītības attīstības aģentūra. [online] [17.11.2016]. Available at [http://viaa.gov.lv/files/news/727/38262\\_viaa\\_pivij\\_2012\\_f.pdf](http://viaa.gov.lv/files/news/727/38262_viaa_pivij_2012_f.pdf) (in Latvian)
20. Spiegel S.B., Hill C.E. (1989). Guidelines for research on therapist interpretation: Toward greater methodological rigor and relevance to practice. *Journal of Counselling Psychology*, Vol. 36, pp. 121 – 129.
21. Stabiņš J., Pupiņš M. (2008). *Darba meklēšanas un uzsākšanas noslēpumu atslēga (Secret Key for Job Search and Start)*. Rīga: Biedrība “Latvijas Pedagogu Federācija”. (in Latvian)
22. Кочюнас Р. (2000). *Психотерапевтические группы: теория и практика (Psychotherapeutic Groups: Theory and Practice)*. Москва: Академический Проект. [online] [17.11.2016]. Available at <http://psylib.org.ua/books/kociu02/index.htm> (in Russian)
23. Соломин И. Р. (2007). *Современные методы психологической экспресс-диагностики и профессионального консультирования (Modern Methods for Rapid Psychological Diagnosis and Professional Advice)*. СПб: Издательство Речь. (in Russian).

## Expatriation: Challenges and Success Factors of an International Career

**Dovilė Ročkė**, PhD student  
Vilnius University, Kaunas Faculty, Lithuania  
[dovile.rocke@knf.vu.lt](mailto:dovile.rocke@knf.vu.lt)

**Abstract:** Economic globalisation has opened new opportunities not only for business enterprises, but their employees as well. The practice of expatriation has been used increasingly for successful operations on a world scale, thus providing the employees with the opportunity to gain some international experience and develop their international career. The aim of this article is to analyse the challenges and success factors of an international career. Objectives of the article: (1) to reveal the conceptual essence of expatriation process; (2) to determine issues faced by expatriates during their international assignment; (3) to list the success factors of an international career. The methods of the article: analysis of scientific literature, synthesis, generalization. Analysis of scientific sources has revealed that expatriates (qualified employees who are usually sent to work to another branch of the same company located abroad) are usually used for three main reasons: technical competence, management development and control. Employees who agree to leave for international assignments are usually motivated by skill acquisition, opportunities of personal development, higher salary and future career prospects. Despite the advantages of expatriation practice, there are many challenges as well (for example, difficult adaptation, various problems related to expatriate's family, and difficulties during repatriation), that might be faced by people assigned to work abroad. It is noteworthy that failures of international assignments have a negative affect both on expatriates and organisations. It has been determined that the success of expatriation process and international career of employees is mostly determined by personal individual and organisational factors.

**Keywords:** expatriates, expatriation process, international career, work – related education.

### Introduction

Together with the development of business on a global level, there has been another new phenomenon coming into focus, namely, international management of human resources, the main aim of which is to enable an international company to be globally successful and thus competitive on a global scale, functioning efficiently, as well as flexible and adaptive during the shortest amount of time possible; finally, it must be able to transfer knowledge to branches located around the world (Budhwar, Florkowski, 2002). One of the key dimensions of the international management of human resources is expatriation process and management thereof (Thoo, Kaliannan, 2013). The practice of expatriation is increasingly used to implement a part of the goals of business companies related to their activities in the international market; it is also a fine opportunity for the employees to gain new experience and develop an international career.

It is noteworthy that scientific literature emphasises not only the benefits of international assignment, but also that there exists a number of challenges with negative effect on both the employees-expatriates and organisations. In order to avoid potential losses, it is beneficial to analyse relevant problems of international assignment as well as to determine what contributes to the success of expatriation process and the international career of employees.

**The aim of the article:** to analyse the challenges and success factors of an international career.

### The tasks of the article:

1. to reveal the conceptual essence of expatriation process;
2. to determine issues faced by expatriates during their international assignment;
3. to list the success factors of an international career.

### Methodology

In order to analyse the challenges and success factors of an international career, the examination of theoretical and empirical research of different scholars has been conducted. Generally it is possible to distinguish the most important aspects researched by the scholars, namely the process of expatriation and the management thereof (Stedham, Nechita, 1997; Miller, Stahl, 2002; Cizel, Ozdemir, 2007; Vögel, Van Vuuren, 2008; Lund, Degen, 2010; Bitencourt, Gallon, 2014), success factors of

international assignments/ expatriation (Goby, Ahmed, 2002; Bullock, Oswald, 2002; Cerdin, Le Pargneux, 2009; Hemmasi, Downes, 2010; Canhilal, Shemueli, 2015), failures/ challenges of an international assignment (Wu, 2008; Thoo, Kaliannan, 2013), aspects related to an intercultural assignment (Grundey, 2008; Wang, 2008; Qin, Zhou, 2009; Banerjee, Gaur, 2012), and issues of repatriation (Chew, Debowski, 2008; Arman, 2009).

*The methods of the article:* analysis of scientific literature, synthesis, generalisation.

## Results and discussion

**Conceptual essence of the expatriation process.** According to I.M. Wang (2008), expatriation can be understood as an assignment for work abroad for a particular amount of time. An expatriate might be defined as an employee of a parent company who is transferred for a particular amount of time (from several months to several years) to work in a branch of an international company located abroad (Banerjee, Gaur, 2012).

According to J. Qin and X. Zhou (2009) companies that invest abroad must manage, control, coordinate and integrate operations between their foreign branches and the parent company. In order to achieve these aims, expatriates are usually selected; they go to branches located abroad as corporate representatives and ambassadors. The expatriates are selected for the management of foreign branches of international companies located abroad, since they are better acquainted with management techniques and methods applied in the parent company than local employees (Wu, 2008).

B.M. Bitencourt and Sh. Gallon (2014) state that the main reason for international companies to use expatriation varies among different organisations and depends on the strategies thereof. It can be related to its development in new markets and more active participation in them, management of mergers and acquisition, technology transfer to the local company, innovative development of ideas. Expatriates and selection thereof must be carefully planned taking into consideration the strategic purpose of an assignment that might include coordination, control, information exchange or management development (Stedham, Nechita, 1997).

Besides the reasons for which international companies employ the practice of expatriation, it is noteworthy to mention that most of the employees treat an international assignment as an opportunity for personal and professional development and an opportunity for positive changes in their career (Miller, Stahl, 2002). According to B.M. Bitencourt and Sh. Gallon (2014) the planning of expatriation process must consist of three stages: (1) the preparation for the mission; (2) the mission itself; (3) the return from the mission – repatriation. This categorisation is supplemented by other scholars (Cizel, Ozdemir, 2007) who have prepared a theoretical model (Figure 1):

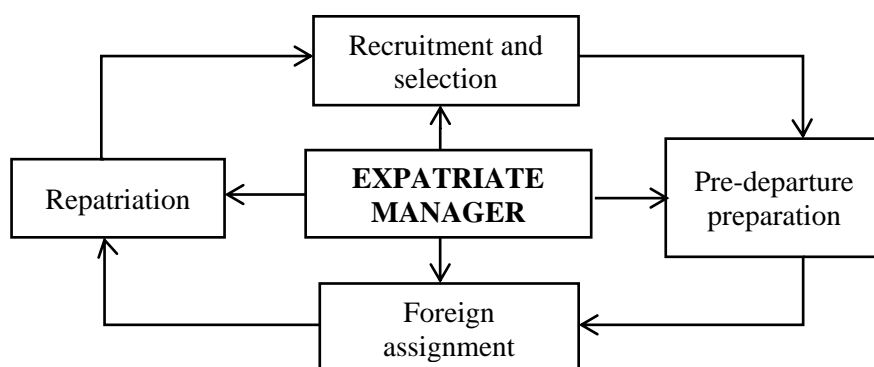


Figure 1. Expatriate management process (Cizel, Ozdemir, 2007).

According to the information provided in the model, expatriation process can be summarised as consisting of four stages. First of all, recruitment and selection of candidates for international assignments takes place, followed by pre-departure training, foreign assignment which includes both expatriate's adaptation to the new culture or environment and the activities of expatriates, carrying out the tasks they have been assigned to do. The authors of this model note that it is the most difficult stage in expatriate management process. Finally, repatriation takes place: return to one's native country and

the main unit of an international company. It is noteworthy that in order to implement the expatriation process successfully, one must pay sufficient attention to all of these stages.

**Challenges of an international career.** The analysis of scientific resources has revealed that despite the already mentioned advantages to the expatriation practice, there are many challenges and actual problems faced by the expatriates during their assignments abroad. One of the most frequent problems of expatriation process addressed by the scholars on the most frequent basis is related to the problems and difficulties of the foreign assignment arising during the repatriation stage.

When expatriates move to work and live abroad, they find themselves in a new cultural environment. According to V.P. Goby and Z.U. Ahmed (2002), expatriates encounter a cultural shock, differences related to work norms, isolation, home-sickness, different system of healthcare protection and children education, different language, cuisine, other costs of living. In most cases expatriates face problems related to both their work and personal adaptation; if unsolved, these problems can result in stress for an employee, have a negative effect on his/ her professional career and the success of the entire foreign assignment (Qin, Zhou, 2009).

According to D. Grundey (2008), the success of a foreign assignment mostly depends on the effectiveness of the intercultural training, because this precise intercultural training can help to reduce the psychological stress and intercultural shock that frequently determines the failure of expatriates. Successful application of intercultural training model can help the employees to become familiarised with the values, rules, beliefs, work style and other aspects of a foreign country and thus facilitate the adaptation of employees during the foreign assignment. The model itself could be improved taking into consideration the difficulties experienced by employees or their family members who still are or have been on a foreign assignment. The same approach is supported by P. Banerjee and J. Gaur (2012), who also note that the adaption of expatriates might be affected by individual, work- and family-related factors.

Historically, the failure of expatriates during a foreign assignment is related to premature repatriation (Hemmasi, Downes, 2010). However, it can also be related to an inefficient completion of one's task or leaving organisation after repatriation (Stedham, Nechita, 1997). It is noteworthy that if problems are encountered during an assignment abroad, direct and indirect losses for both organisations and their employees are possible. P. Banerjee and J. Gaur (2012) add that the failure of expatriates means great financial loss for international companies and has impact on the career of expatriates. A.J. Vögel and J.J. Van Vuuren (2008) have observed that when expatriates remain for their assignment but distance themselves psychologically, it might result in indirect losses for companies. The said losses might include the reduction in productivity, market share and competitive position, damaged relationship with employees, clients and suppliers as well as negative impact on company's image and reputation.

Besides the adaptation during the international assignment, another difficult process is the final stage of expatriation process, namely, the repatriation. According to J. Chew and Sh. Debowski (2008), the final stage of expatriation process (repatriation) usually attracts significantly less attention because of a prevailing attitude that this process should not cause great difficulty, since local language and culture are well known, the work-related skills are the same, home environment and people with whom the expatriate will communicate will probably be same as well. However, the actual situation reveals slightly different experience.

It is noteworthy that during their foreign assignment, not only do employees carry out the tasks that have been assigned to them, they also gain new knowledge and new international experience; it is expected that later they will transfer and use their newly gained knowledge during their activities in the parent company of their international company (Arman, 2009). However, the repatriation stage is not always fluent. There are usually difficulties arising during reintegration to the former work or residential environment; not all companies are capable of appreciating the newly gained international experienced of their employees who have returned.

Implementation of a successful repatriation process requires provision of repatriation strategies, preparation of effective repatriation programmes that would be revised on a regular basis (Chew, Debowski, 2008). It is also important for an international company to pay attention to the employee and his/ her family members. It is important to show that the employee is appreciated and that he/ she shall receive support during the repatriation period.

According to Y.Sh. Lee (2011), the occurrence of international human resources management problems might be also determined by the fact that companies sometimes lack an international experience. Infrequent international assignment, insufficient attention to knowledge gained in a different cultural environment or the fact that divisions managing human resources do not always take advantage of the opportunity to learn from the experience of the expatriates who have returned back and thus complicate the development of company's development of international competence.

**Success factors of an international career.** Having discussed the most relevant challenges for international career, it is noteworthy to analyse the success factors of expatriation process as well. Research conducted by V.P. Goby and Z.U. Ahmed (2002) has revealed that the success of expatriates during foreign assignments are related to these main aspects: expatriate selection criteria, training, teaching techniques, family and social support, support from organisation and compensation.

Results of research conducted by S.K. Canhilal and R.G. Shemueli (2015) support the fact that success of expatriation process is determined by the combination of individual, organisational and context-related factors. It has been revealed that the most significant factors are the following: cross-cultural competences, spousal support, motivational questions, time of assignment, emotional competences, previous international experience language fluency, social relational skills, cultural differences, and organizational recruitment and selection practices.

According to Ch. Bullock and Sh. Oswald (2002), it is possible to distinguish four criteria that must be taken into consideration when selecting expatriates qualified for a foreign assignment: 1) technical competences; 2) human relational skills; 3) spouse and family adaptability; 4) desire to work abroad. In order for expatriation process to be implemented successfully, it is important for an expatriate to possess cultural empathy, emotional stability, flexibility, cross-cultural communication skills and necessary administration skills, knowledge on domestic operations, domestic managerial talent and technical expertise. It is also important for the future expatriate to be motivated, interested in working abroad and in culture of the host country, also to expect that the foreign assignment will have positive effect on expatriate's career. Moreover, it is important for employee's family members to be able to adapt, support each other and nurture stable relationship.

Analysis of scientific sources conducted by J.L. Cerdin and M. Le Pargneux (2009) has assessed success of foreign assignment through career variables before, during and after expatriation. It is noteworthy that before expatriation, the success of foreign assignment is determined by motivation to go abroad and free decision to choose the expatriation. During the time abroad and repatriation, success is determined by the following aspects of career: career anchors, careerist orientation, protean attitude and boundaryless attitude. It is noteworthy that success of foreign assignment contributes to the success of repatriation. The success of expatriate's career is related to career satisfaction, promotion and pay increase.

According to Y.Sh. Lee (2011), it is important to provide help for future expatriates to form a comprehensive image of work and life abroad and to provide them with all necessary support. Another positively evaluated aspect is communication between new expatriates and their colleagues who have been and are still working in the destination country and who can share their experience. Another highly important aspect is for the employees themselves to be interested in the destination country, as well as its culture and for them to familiarise themselves with organisational structure, procedures and business strategy abroad. According to D.W. Lund and R.J. Degen (2010) a well-prepared expatriate selection, their preparation, support and reintegration programme help to increase the overall efficiency of expatriate assignment and avoid large costs related to failure.

It can be summarised that the most significant factors for successful implementation of foreign assignment include factors on individual and organisational level. It is very important to select suitable employees who would possess necessary experience, knowledge and skills; to envision and implement targeted training that would help with successful implementation of the tasks assigned and deal with various challenges arising during the foreign assignment. It is also important to take the family situation into consideration as well, because support from family members, motivation for foreign assignment, and ability to adapt in new cultural environment has contributed significantly to the success of employee's international career.

## Conclusion

- According to the analysis of scientific sources, it has been determined that expatriates are usually selected because of three main reasons: technical competence, management development and control. In their turn, employees are stimulated to choose expatriation by a desire to gain international experience and opportunity of positive career changes. There are four stages of expatriation process distinguished: recruitment and selection, pre-departure training, foreign assignment and repatriation.
- It has been determined that problems frequently faced by expatriates occur in the stages of cross-cultural adaptation and repatriation. Difficulties during the adaptation process are related to employee's exposure to a different cultural, social and work environment, while difficulties of repatriation are related to reintegration to the previous home environment, failure to appreciate the international experience of an employee and failure to meet the existing expectations.
- It has been revealed that factors that influence the success of expatriation process and international career of employees the most include both individual and organisational factors. Both, expatriate's personal qualities, experience, skills, family situation as well as the attention from organisation for implementation of foreign assignments (a well-considered selection of candidates for expatriation, their preparation for foreign assignment, assessment of employee's family situation, continuous communication and collaboration throughout the entire assignment and well-planned implementation of the repatriation process) are important.

## Bibliography

1. Arman G. (2009). Repatriation Adjustment: Literature Review. *Journal of European Psychology Students*, Vol. 1, pp. 1 – 6.
2. Banerjee P., Gaur J., Gupta R. (2012). Exploring the Role of the Spouse in Expatriate Failure: A Grounded Theory-Based Investigation of Expatriate Spouse Adjustment Issues from India. *The International Journal of Human Resource Management*, Vol. 23 (17), pp. 3559 – 3577.
3. Bitencourt B. M., Gallon Sh., Scheffer, A. B. B. (2014). Expatriation and its Strategic Role in Internationalised Companies. *Review of International Business*, Vol. 9 (3), pp. 36 – 52. [online] [20.11.2016]. Available at <http://internext.espm.br/index.php/internext/article/viewFile/194/214>
4. Budhwar P. S., Florkowski G. W., Schuler R. S. (2002). International Human Resource Management: Review and Critique. *International Journal of Management Reviews*, Vol. 4 (1), pp. 41 – 70.
5. Bullock Ch., Oswald Sh., Wang J. (2002). Expatriate Selection: The Key to International Success. *International Business & Economics Research Journal*, Vol. 1 (11), pp. 69 – 78.
6. Canhilal S.K., Shemueli R.G., Dolan S. (2015). Antecedent Factors for Success in International Assignments: The Case of Expatriates in Peru. *Journal of Global Mobility*, Vol. 3 (4), pp. 378 – 396.
7. Cerdin J.L., Le Pargneux M. (2009). Career and International Assignment Fit: Toward an Integrative Model of Success. *Human Resource Management*, Vol. 48 (1), pp. 5 – 25.
8. Chew J., Debowski Sh. (2008). Developing an Effective Repatriation Strategy for MNC: a Model and Tools for International Human Resource Management. *Journal of Comparative International Management*, Vol. 11 (2), pp. 3 – 21. [online] [20.11.2016]. Available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.921.7647&rep=rep1&type=pdf>
9. Cizel R.B., Ozdemir B. (2007). International Hotel Manager as an Emerging Concept: a Review of Expatriate Management Literature and a Model Proposal. *Journal of Hospitality and Tourism Management*, Vol. 14 (2), pp. 170 – 187. [online] [20.11.2016]. Available at [https://www.researchgate.net/publication/257587104\\_International\\_Hotel\\_Manager\\_as\\_an\\_Emerging\\_Concept\\_A\\_Review\\_of\\_Expatriate\\_Management\\_Literature\\_and\\_a\\_Model\\_Proposal](https://www.researchgate.net/publication/257587104_International_Hotel_Manager_as_an_Emerging_Concept_A_Review_of_Expatriate_Management_Literature_and_a_Model_Proposal)
10. Goby V.P., Ahmed Z.U., Annavarjula M., Ibrahim D.N., Osman-Gani A. (2002). Determinants of Expatriate Success: An Empirical Study of Singaporean Expatriates in the Peoples Republic of China. *Journal of Transnational Management Development*, Vol. 7 (4), pp. 73 – 88.
11. Grundey D. (2008). Internationalisation and Cross-Cultural Business Environment: Modelling the Training Process of Expatriates. *Transformations in Business & Economics*, Vol. 7 (2), pp. 114 – 129.

12. Hemmasi M., Downes M., Varner I.I. (2010). An Empirically-Derived Multidimensional Measure of Expatriate Success: Reconciling the Discord. *The International Journal of Human Resource Management*, Vol. 21 (7), pp. 982 – 998.
13. Lee Y.Sh. (2011). Developing International Human Resources Firms. *International Journal of Business and Social Science*, Vol. 2 (9), pp. 37 – 41. [online] [20.11.2016]. Available at [http://ijbssnet.com/journals/Vol. 2 No. 9 \[Special Issue - May 2011\]/6.pdf](http://ijbssnet.com/journals/Vol. 2 No. 9 [Special Issue - May 2011]/6.pdf)
14. Lund D.W., Degen R. J. (2010). Selecting Candidates and Managing Expatriate Assignments in China. *Global Business and Organizational Excellence*, Vol. 30 (1), pp. 60 – 72. [online] [20.11.2016]. Available at [http://www.ism.edu/images/stories/publications/dlund\\_rjdeggen\\_expatriates\\_china.pdf](http://www.ism.edu/images/stories/publications/dlund_rjdeggen_expatriates_china.pdf)
15. Miller E.L., Stahl G.K., Tung R.L. (2002). Toward the Boundaryless Career: a Closer Look at the Expatriate Career Concept and the Perceived Implications of an International Assignment. *Journal of World Business*, Vol. 37, pp. 216 – 227.
16. Stedham Y., Nechita M. (1997). The Expatriate Assignment: Research and Management Practice. *Asia Pacific Journal of Human Resources*, Vol. 35 (1), pp. 80 – 89. [online] [20.11.2016]. Available at <http://journals.sagepub.com/doi/pdf/10.1177/103841119703500107>
17. Thoo L., Kaliannan M. (2013). International HR Assignment in Recruiting and Selecting: Challenges, Failures and Best Practices. *International Journal of Human Resource Studies*, Vol. 3 (4), pp. 143 – 158. [online] [20.11.2016]. Available at <http://www.macrothink.org/journal/index.php/ijhrs/article/viewFile/4610/3783>
18. Qin J., Zhou X. (2009). A Study on Cross-Cultural Adjustment of Japanese and American Expatriates in China. *International Journal of Business and Management*, Vol. 4 (12), pp. 197 – 206.
19. Vögel A.J., Van Vuuren J.J., Millard S.M. (2008). Preparation, Support and Training Requirements of South African Expatriates. *South African Journal of Business Management*, Vol. 39 (3), pp. 33 – 40. [online] [20.11.2016]. Available at [http://www.repository.up.ac.za/bitstream/handle/2263/9433/Vogel\\_Preparation%20\(2008\).pdf?sequence=1](http://www.repository.up.ac.za/bitstream/handle/2263/9433/Vogel_Preparation%20(2008).pdf?sequence=1)
20. Wang I.M. (2008). The Relations Between Expatriate Management and the Mentality and Adjustment of Expatriates. *Social Behavior and Personality*, Vol. 36 (7), pp. 865 – 882.
21. Wu J. (2008). An Analysis of Business Challenges Faced by Foreign Multinationals Operating the Chinese Market. *International Journal of Business and Management*, Vol. 3 (12), pp. 169 – 174.



## **Integrating Transferable Skills into the Curriculum in the Framework of the Management of Study Programmes in Higher Education Institutions of Latvia**

**Antra Roskosa**<sup>1</sup> Dr.sc.admin.; **Yulia Stukalina**<sup>2</sup> Dr.sc.admin.

Riga Technical University, Latvia<sup>1</sup>; Transport and Telecommunication Institute, Latvia<sup>2</sup>

[Antra.Roskosa@rtu.lv](mailto:Antra.Roskosa@rtu.lv)<sup>1</sup>; [Stukalina.J@tsi.lv](mailto:Stukalina.J@tsi.lv)<sup>2</sup>

**Abstract:** In the agenda of globalization and the related integration of markets in the world economy, the main concern for modern universities is to provide their graduates with a wide range of skills necessary for launching and managing their professional career. This is directly associated with the overall academic quality of the study programme. In this context, higher education institutions of Latvia should develop a clear policy for integrating transferable skills in their academic programmes. As programme directors manage all pedagogical and administrative issues affecting the programme, and introduce modifications in accordance with the changing requirements of students, they need some information about their students' opinion on promoting transferable skills in the university. Later, this information will be used in the course of the management of a study programme for updating it and making it more competitive in the international education market. In the paper, it is argued that integration of transferable skills into the curriculum can be regarded as an essential aspect of the management of study programmes in a university, which is vital in the context of providing more career opportunities to graduates. The aim of the research presented in the paper was to identify what transferable skills (those that can be used across different fields and jobs) would appeal to potential employers and contribute to a successful career from the point of view of university students. The paper is based on 1) the analysis of theoretical literature and official EU documents on higher education; 2) a survey conducted in two higher education institutions of Latvia – Riga Technical University (RTU) and Transport and Telecommunication Institute (TSI). The results of the study performed in the paper suggest that the formation of students' transferable skills should be integrated in a corresponding study programme and promoted over the whole period of studies. Education managers should favour the development of a wide assortment of skills, which are vital for their graduates' professional growth and career development.

**Keywords:** higher education, transferable skills, study programme management.

### **Introduction**

Today, European universities face serious challenges (The role of..., 2003; European Higher..., 2013) which is particularly topical in the context of the implementation of the European strategy for Smart, Sustainable and Inclusive Growth (Europe 2020..., 2010).

As both skills and human capital are now the pillars of economic prosperity and social well-being, it requires nations to maintain their competitiveness by developing and sustaining a skilled workforce (Tremblay, Lalancette, 2012). Thus, higher education, being a crucial factor in innovation and human capital development, plays an essential role in the success and sustainability of the knowledge economy (Dill, Van Vught, 2010).

In view of the above, the main concern for modern universities is to provide their graduates with a wide range of skills necessary for launching and managing their professional career in the knowledge-based economy. This is directly associated with the overall academic quality of study programmes. In this context, higher education institutions of Latvia should develop a clear policy for integrating transferable skills in their academic programmes. As programme directors manage all pedagogical and administrative issues affecting the programme, and introduce modifications in accordance with the changing requirements of students, they need some information about their students' opinion on promoting transferable skills in the university. Later, this information will be used in the course of the management of a study programme for updating it and making it more competitive in the international education market. In the paper, it is argued that integration of transferable skills into the curriculum can be regarded as an essential aspect of the management of study programmes in a university, which is vital in the context of providing more career opportunities to graduates.

The aim of the research presented in the paper was to identify what transferable skills (those that can be used across different fields and jobs) would appeal to potential employers and contribute to a successful

career from the point of view of university students. The paper is based on the analysis of theoretical literature and official EU documents on higher education, and a survey conducted in two higher education institutions of Latvia.

## **Methodology**

The paper is based on 1) the analysis of theoretical literature and official EU documents on higher education; 2) a survey conducted in two higher education institutions of Latvia – Riga Technical University (RTU) and Transport and Telecommunication Institute (TSI). The research population included the students studying the following programmes: Computer Science, Telecommunications, Transport and Logistics, Management and Economics.

An original questionnaire was developed by the authors. A list of transferable skills was developed on the basis of ESF's list of 17 transferable skills identified for researchers (Research Careers in Europe, 2009, 48); it was adapted to the higher education context. A discussion "What are the 21<sup>st</sup> century skills students need?" was also organized by the authors prior to conducting the survey. 202 students from the above study programmes participated in the discussion and expressed their point of view on the topic. The information obtained in the discussion was used to create the questionnaire.

Eventually, the following variables (transferable skills) were chosen for empirical analysis: S1 - Communication skills, S2 - Analytical skills, S3 – IT skills, S4 - Flexibility/adaptability, S5 - Interpersonal skills, S6 - Language skills, S7 - Teamwork skills, S8 - Organizational and planning skills, S9 - Self-management skills, S10 - Problem-solving skills, S11 - Critical thinking skills, S12 - Presentation skills, S13 – Leadership skills, S14 - Intercultural skills.

Students were asked to rate the above items on a five-point Likert scale, as follows: 1 = not important, 2 = somewhat important, 3 = sufficiently important, 4 = rather important, 5 = highly important.

The obtained data were processed using SPSS software package.

## **Results and discussion**

### **1. Analysis of literature and official EU documents on education**

Modern European universities face new challenges associated with creating the European Higher Education Area and providing quality higher education (Bologna Declaration, 1999; Standards and Guidelines for..., 2009; Bergen Communiqué, 2005; London Communiqué, 2007; The European Higher Education..., 2012) in the context of the implementation of the European strategy for Smart, Sustainable and Inclusive Growth (2010).

It is vital that European students have access to the best possible higher education learning environment (Modernisation of Higher Education..., 2014), the European Union's higher education institutions being crucial for generating new knowledge, educating critical thinkers and problem-solvers", and Europe's graduates being the "most effective channels for transferring knowledge" from higher education institutions to the society because of "enriching the individual, the family, the community, the workplace, the nation, the EU and the wider world" (High Level Group on..., 2013). The European strategy for Smart, Sustainable and Inclusive Growth (Europe 2020..., 2010) is based on the following mutually supporting priorities: developing an economy based on knowledge and innovation, promoting a more resource efficient, greener and more competitive economy, fostering a high-employment economy delivering social and territorial cohesion.

The goals posed to European education and training include both professional development of Europeans and their personal development for a better life and active citizenship in democratic societies respecting cultural and linguistic diversity (Detailed work..., 2002). The Lisbon agenda for economic growth emphasizes the importance of giving EU citizens the opportunity to develop their skills for managing their careers (Career development..., 2008).

In this context, to better anticipate the labour market's needs the Commission has adopted a new and comprehensive "Skills Agenda for Europe" aimed at 1) assuring that EU citizens develop a wide assortment of transversal skills necessary to improve their chances in life; 2) making the most of Europe's human capital, which will finally increase employability, competitiveness and growth in

Europe (Ten Actions..., 2016). These new basic skills should be provided through lifelong learning, and they are associated with the key competences defined in the Recommendation of the European Parliament and of the Council on key competences for lifelong learning (2006):

- communication in the mother tongue (developing skills related to the ability to communicate orally and in writing in different communicative situations);
- communication in foreign languages (developing skills related to mediation and intercultural understanding);
- mathematical competence and basic competences in science and technology (skills related to the ability to handle technological tools and scientific data);
- digital competence (skills related to the ability to gather and process information, and use it in an organized way);
- learning to learn (literacy, numeracy and ICT skills needed for further learning);
- social and civic competences (skills related to the ability to communicate productively in different environments, to demonstrate tolerance and understanding of different viewpoints);
- sense of initiative and entrepreneurship (skills related to the ability to plan, organise, manage, lead and delegate, analyse and assess, as well as the ability to work in teams);
- cultural awareness and expression (skills associated with the ability to connect one's own creative and communicative opinions with the opinions of others, and understand social and economic opportunities in cultural activity).

There can be a diversity of approaches to the integration of skills into the curriculum. Most higher education institutions choose to develop their own list of desirable skills (Fallows, Steven, 2000) depending on institutional priorities and practices. For example, students learning a laboratory-based science subject have to develop additional skills necessary for operating professionally in their specialist environment (Ibid.). Such skills are characterized as transferable skills – the skills “learned in a particular context that can be useful in another context”, as they can be applied in a variety of work situations and areas (Transferable Skills ..., 2012).

Today, educational managers face the challenge of embedding various skills provision within a curriculum so that it will make its contribution to their students' overall development. As economic and social transformations are constantly occurring in the global environment, they have to review their study programmes in order to bring it in line with these transformations, integrating the 21<sup>st</sup> century skills provision within a curriculum being an important aspect of the programmes' management, development and improvement. This can be done in the framework of the management of study programmes; programmes can be tuned to discipline requirements due to considerable autonomy being given to a particular department for meeting the needs of different disciplines areas. In this context, the role of a programme director increases. Study programme directors supervise a study programme, representing an “interface” between students, academic staff and the university administration. So, they manage pedagogical, operational, and administrative issues that affect the programme implementing program necessary modifications. Education markets are complex as they comprise many different stakeholders, university students being among them. The stakeholders perceive educational quality differently depending on their requirements and expectations. The increased competition in higher education makes universities employ more customer-oriented approach in delivering their services (Kara, DeShields, 2004); and a faculty that supports this customer-oriented attitude would be responsive to its students' interests and opinions (Hemsley-Brown, Oplatka, 2010). If educators have sufficient understanding of their students' needs and expectations, they could manage them, the information they collect assisting education managers to create novel managerial and pedagogical tools (Voss, 2009). Education managers can successfully use student evaluations in several contexts – student evaluations of a study course, of a study programme (Stukalina, 2012).

In view of the above, students' perceptions (evaluation) of their skills development should be obtained by the programme director in the agenda of the management of study programmes. Education managers can successfully use this information in different contexts:

- for initiating activities in the department to address some urgent issues in undergraduate education;
- for monitoring and implementing the study programme;
- for modifying the programme and adding (or deleting) some courses;

- for providing students with essential information on their programme and their progress through it;
- for advising students how to solve problems that may arise in the course of studies;
- for providing assistance to the academic staff involved in the programme's implementation;
- for establishing efficient communication channels among the participants of the educational process (faculty, students, academic and attending staff).

## 2. Analysis of the empirical study

The study findings are presented in Table 1 and Figures 1, 2, 3 and 4. The results of the study show that the importance of various transferable skills is evaluated differently by different students – some skills students consider to be of the highest importance, whereas some skills are regarded to be less significant, though of a high importance too. So the skills can be categorized according to how they are perceived by students from their career development perspective.

Table 1

**Summary statistics: Means (M), Standard Deviations (SD) and Medians (Mdn)**

Variables	Students of Computer Science			Students of Telecommunications			Students of Transport and Logistics			Students of Management and Economics		
	M	SD	Mdn	M	SD	Mdn	M	SD	Mdn	M	SD	Mdn
Communication and people skills	3.9	0.9	4	4.0	1.3	4	4.7	0.6	5	4.9	0.3	5
Analytical skills	4.3	0.9	5	4.2	0.9	4	4.2	0.7	4	4.2	0.8	4
IT skills	4.7	0.8	5	4.3	1.1	5	3.8	0.7	4	3.6	1.0	4
Flexibility/adaptability	4.0	0.9	4	4.0	0.9	4	4.0	0.9	4	4.3	0.8	5
Interpersonal skills	3.5	0.9	3	3.6	1.1	4	4.0	0.9	4	4.2	0.8	4
Language Skills	4.1	1.1	4	4.1	1.3	5	4.7	0.6	5	4.6	0.7	5
Teamwork skills	4.3	0.9	5	3.8	1.2	4	4.2	0.8	4	4.4	0.9	5
Organizational and planning skills	4.1	0.9	4	4.2	1.0	4	4.4	0.8	5	4.7	0.6	5
Self-management skills	3.8	1.0	4	4.1	1.0	4	4.2	0.9	4	4.3	0.9	5
Problem-solving skills	4.4	0.9	5	4.3	1.0	5	4.4	0.8	5	4.5	0.7	5
Critical thinking skills	4.2	0.9	4	4.2	1.1	5	4.2	1.0	4,5	4.0	0.9	4
Presentation skills	3.2	1.2	3	3.4	1.2	4	3.9	0.9	4	4.0	0.9	4
Leadership	3.4	1.2	3	3.7	1.2	4	3.9	1.1	4	3.8	1.1	4
Intercultural skills	3.1	1.2	3	3.2	1.3	3	3.9	1.0	4	3.6	0.9	4

As seen in Table 1, more than half of the students of Computer Science think that analytical skills/IT skills, teamwork skills and problem-solving skills are of the highest importance. However, communication skills, flexibility/adaptability, language skills, organizational and planning skills, self-management skills, critical thinking skills are also regarded by students as very important for their professional growth.

As seen in Table 1, more than half of the students of Computer Science believe that analytical skills, IT skills, teamwork skills and problem-solving skills are of the highest importance. Moreover, students also consider communication skills, flexibility/adaptability, language skills, organizational and planning skills, self-management skills and critical thinking skills to be significant in the agenda of their career development. The obtained data also prove that more than half of the students of Telecommunications think that IT skills, language skills, problem-solving skills and critical thinking skills are of the highest importance. According to the students' opinion communication skills, analytical skills, interpersonal skills, organizational and planning skills, teamwork skills, leadership skills and presentation skills are also essential in the context of their career development (Table 1).

The data also show that more than half of the students of Transport and Logistics think that communication skills, language skills, organizational and planning skills, problem-solving skills are of the highest significance. The critical thinking skills and all other skills are also very important for the students (Table 1).

The results indicate that more than half of the students of Management and Economics believe that communication skills, flexibility/adaptability, language skills, teamwork skills, organizational and planning skills, self-management skills, critical thinking skills and problem-solving skills are of the highest importance. The students consider other skills also to be very important as well (Table 1).

According to the opinion of students one of the most important transferable skills for their professional career are communication skills. However, students of diverse study programs assess these skills in a different way: for example, for the students of Management and Economics and Transport and Logistics such skills are extremely important – 4.9 and 4.7 points respectively (Figure 3, 4). Whereas, for the students of Computer Science and Telecommunications these skills are not so significant – 3.9 and 4 points (Figure 1, 2).

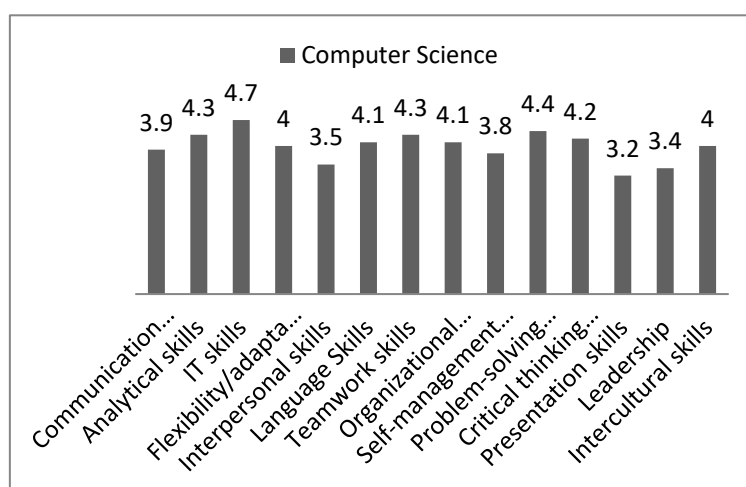


Figure 1. Importance of transferable skills as perceived by students from their career development perspective (*Means*): Students of Computer Science.

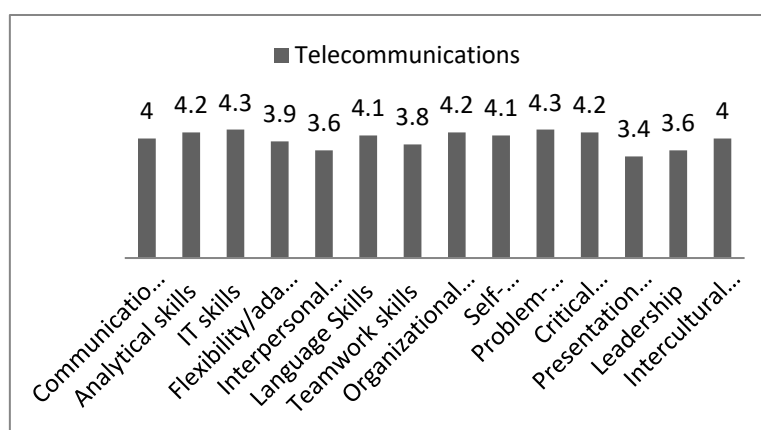


Figure 2. Importance of transferable skills as perceived by students from their career development perspective (*Means*): Students of Telecommunications.

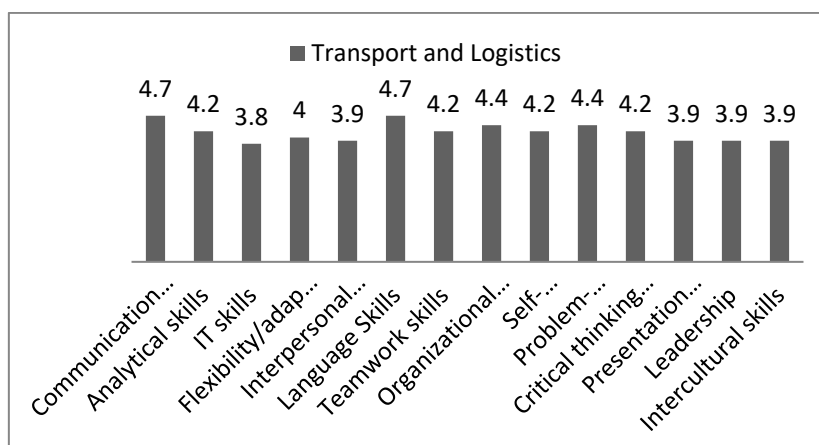


Figure 3. Importance of transferable skills as perceived by students from their career development perspective (*Means*): Students of Transport and Logistics.

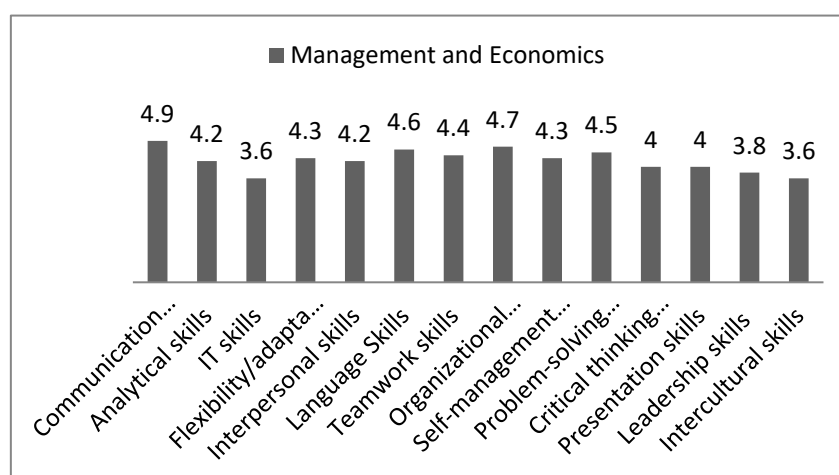


Figure 4. Importance of transferable skills as perceived by students from their career development perspective (*Means*): Students of Management and Economics.

The difference in students' opinions could be explained by the fact that the students of Management and Economics and Transport and Logistics are more tended to communicate and cooperate with people, and the communication and cooperation are of a vital importance for their professional career development in comparison with the students of Computer Science and Telecommunications. However, in the circumstances of globalization, the students of the Computer Science and Telecommunications also have to take into consideration that communication skills can be applied in a variety of working areas, this way assisting them to perform in a multicultural environment. That is why as a positive tendency is worth mentioning that the students of Computer Science, Telecommunications and Transport and Logistics evaluate the importance of intercultural skills quite highly – 4.4 and 3.9 points respectively (Figure 1, 2, 3) in comparison with the students of Management and Economics – 3.6 points (Figure 5). Nevertheless, when analyzing the students' opinion about interpersonal skills, it should be mentioned that the students of Computer Science and Telecommunications (3.5 and 3.6 points respectively) consider them to be less important compared to the students of the Management and Economics (4.2 points) and Transport and Logistics (3.9 points) (Figure 1, 2, 3, 4). The intentions of students to enter the global labour market prove their attitude towards the importance of language skills. The highest evaluation of language skills is characteristic for the students of Transport and Logistics and Management and Economics – 4.7 and 4.6 points respectively (Figure 3, 4). The students of Computer Science and Telecommunications evaluate language skills a little lower – 4.1 points (Figure 1, 2). However, there is a tendency among students to put more emphasis on language learning as good language skills would provide sharp edge in the international labour market.

Communication skills are also closely related to teamwork skills. The data of the research provide some interesting findings – the students of Computer Science demonstrate quite high evaluation of team work

skills – 4.3 points in spite of the fact they are not very active communicators (Table 1). The students of Management and Economics and Transport and Logistics also consider teamwork skills to be significant – 4.4 and 4.2 points (Figure 4, 5). Whereas the students of Telecommunications believe that having good teamwork skills is less important – 3.8 points (Figure 2).

Flexibility/adaptability could also be mentioned as transferable skills which being important in communication and cooperation process, can help students promote their professional career. The students of Management and Economics assess these skills highly – 4.3 points (Figure 4). The students of Computer Science, Transport and Logistics and Telecommunications also have expressed a positive attitude towards the acquisition of these skills – 4 and 3.9 points (Figure 1, 2, 3), which means that students have a positive attitude towards the communication. Moreover, there are other transferable skills which are also connected with communication and cooperation process. These are problem-solving skills and organizational and planning skills. The research results indicate that the students of Management and Economics consider problem-solving skills (4.5 points – Figure 4) and organizational and planning skills (4.7 points – Figure 3) to be vital for them to succeed in different working areas. It is worth mentioning that the students from other programs – Telecommunications, Transport and Logistics and Computer Science also evaluate problem-solving skills (4.3 and 4.4 points – Figure 1, 2, 3) and organizational and planning skills (4.2, 4.4 and 4.1 points – Figure 1, 2, 3) to contribute much to their professional career development.

Besides, the results of the research show students' attitude towards the other transferable skills related to the communication and cooperation process, namely self-management skills and leadership skills. However, it should be noted that the students evaluate the importance of these skills differently. The students of the Transport and Logistics (4.2 points), Management and Economics (4.3 points) and Telecommunications (4.1 points) considered self-management skills to be more significant in comparison with the students of Computer Science (3.8 points – Figure 1, 2, 3, 4). A similar tendency is seen in the evaluation of leadership skills – the students of Transport and Logistics (3.9 points), Management and Economics (3.8 points) and Telecommunications (3.6 points) assess the importance of leadership skills a little higher than the students of Computer Science (3.4 points – Figure 1, 2, 3, 4). Though, according to the students' evaluation, these skills are of less importance for students' professional career compared to other transferable skills.

The data of the research also prove that students have an opinion that skills connected with the development of their thinking process are of a high value for their professional career advancement. These are the following transferable skills – critical thinking skills and analytical skills. The students of all programmes evaluate these skills as very important (4 and 4.3 points – Figure 1, 2, 3, 4).

The transferable skills closely connected with students' professional development are IT skills. It is obvious that the students of Computer Science assess these as the most important skills of all analysed – 4.7 points (Figure 2). The students of Telecommunications also highly evaluate IT skills – 4.3 points (Figure 2). Whereas the students of Transport and Logistics (3.8 points) and Management and Economics (3.6 points) are of an opinion that IT skills are not so essential for their professional career development (Figure 4, 5). When evaluating other transferable skills related to the students' professional career – presentation skills, the results show that the students of Management and Economics (4 points) and Transport and Logistics (3.9 points) believe these skills to be quite important for their professional growth (Figure 3, 4). In turn, the students of Computer Science (3.2 points) and Telecommunications (3.4 points) think that these transferable skills are not to a large extent significant for their successful future career (Figure 1, 2).

In general, the results of the empirical study clearly indicate that a set of transferable skills have to be developed in the academic settings making an allowance for the students' future career perspective, since building such skills can greatly expand the students' career options and opportunities. This corresponds to the presupposition that the management of students' professional career should start early (Roskosa, Stukalina, 2016).



## Conclusions

- As the situation in the modern international labour market is dynamic and turbulent, students need transferable skills, which they can use in different areas and professional situations.
- The formation of students' transferable skills should be integrated in a corresponding study programme and promoted over the whole period of studies. Education managers should favour the development those of skills, which are vital for their graduates' professional growth and career development.
- Favouring the development of transferable skills it is recommended that educators employ such learning and teaching methods and formats, which can improve students' ability to work in a team, motivate students to take responsibility for their work and actions and promote their adaptability and flexibility in the constantly changing global environment.
- Since the importance of various transferable skills is evaluated differently by different study programme students, it is highly recommended that education managers operating in the area of career guidance and counselling perform regular analysis of the current situation in the local and international labour markets, at the same time staying tuned for their students' expectations. For this purpose, student surveys and interviews can be used.
- Education managers responsible for career guidance and counselling in a university should work in close cooperation with the programme director (manager) who is responsible for the pedagogical and administrative issues affecting the programme.
- A limitation of this study is the small sample size (two higher education institutions), and further research is planned using a larger population.

## Bibliography

1. *Bergen Communiqué: The European Higher Education Area - Achieving the Goals*. Communiqué of the Conference of European Ministers Responsible for Higher Education. (2005). [online] [11.11.2016]. Available at [http://media.ehea.info/file/20050412-13\\_Mondorf/67/6/BFUG5\\_8\\_Draft\\_579676.pdf](http://media.ehea.info/file/20050412-13_Mondorf/67/6/BFUG5_8_Draft_579676.pdf)
2. *Bologna Declaration*. (1999). Joint Declaration of the European Ministers of Education. [online] [07.11.2016]. Available at [http://media.ehea.info/file/Ministerial\\_conferences/02/8/1999\\_Bologna\\_Declaration\\_English\\_553028.pdf](http://media.ehea.info/file/Ministerial_conferences/02/8/1999_Bologna_Declaration_English_553028.pdf)
3. Career Development at Work: A Review of Career Guidance to Support People in Employment. (2008). *Cedefop Panorama series*, Vol. 151, Luxembourg: Office for Official Publications of the European Communities. [online] [22.09.2016]. Available at <https://goo.gl/g7ii4P>
4. Detailed Work Programme on the Follow-up of the Objectives of Education and Training Systems in Europe. (2002). *Official Journal C* 142, 14/06/2002 P. 0001 – 0022. [online] [27.10.2016]. Available at [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52002XG0614\(01\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52002XG0614(01))
5. Dill D.D., Van Vught F. (Eds.). (2010). *National Innovation and the Academic Research Enterprise; Public Policy in Global Perspective*. Baltimore: Johns Hopkins University Press.
6. *Europe 2020 - A European Strategy for Smart, Sustainable and Inclusive Growth*. (2010). Brussels: European Commission. [online] [14.09.2016]. Available at <http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>
7. *Ten Actions to Help Equip People in Europe with Better Skills – Frequently Asked Questions* (2016). European Commission - Fact Sheet. Brussels: EC. [online] [26.10.2016]. Available at [http://europa.eu/rapid/press-release\\_MEMO-16-2020\\_en.htm](http://europa.eu/rapid/press-release_MEMO-16-2020_en.htm)
8. European Higher Education in the World – Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. (2013). *European Higher Education in the World*, COM/2013/0499 final. [online] 12.09.2015]. Available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2013:0499:FIN>
9. Fallows S., Steven Ch. (Eds.). (2000). *Integrating Key Skills in Higher Education. Employability, Transferable Skills and Learning for Life*. London: Kogan Page, pp. 3 – 14.
10. Hemsley-Brown J.V., Oplatka I. (2010). Market orientation in universities. A Comparative Study of Two National Higher Education Systems. *International Journal of Educational Management*,

- Vol. 24(3), pp. 204 – 220. [online] 12.09.2015]. Available at [http://epubs.surrey.ac.uk/7279/2/Market\\_Orientation\\_in\\_Universities\\_submitted.pdf](http://epubs.surrey.ac.uk/7279/2/Market_Orientation_in_Universities_submitted.pdf)
11. *High Level Group on the Modernisation of Higher Education*. (2013). Report to the European Commission on Improving the Quality of Teaching and Learning in Europe's Higher Education Institutions. Brussels: European Commission. [online] [18.10.2016]. Available at [http://ec.europa.eu/dgs/education\\_culture/repository/education/library/reports/modernisation\\_en.pdf](http://ec.europa.eu/dgs/education_culture/repository/education/library/reports/modernisation_en.pdf)
  12. Kara A., DeShields O.W. (2004). Business Student Satisfaction, Intentions and Retention in Higher Education: An Empirical Investigation, *MEQ*, Vol. 3. [online] [20.06.2016]. Available at [http://www.marketingpower.com/Community/ARC/gated/Documents/Teaching/MEO/student\\_satisfaction.pdf](http://www.marketingpower.com/Community/ARC/gated/Documents/Teaching/MEO/student_satisfaction.pdf)
  13. *London Communiqué: Towards the European Higher Education Area: Responding to Challenges in a Globalised World*. (2007). Bologna Process. [online] [21.10.2016]. Available at [http://media.ehea.info/file/2007\\_London/69/7/2007\\_London\\_Communique\\_English\\_588697.pdf](http://media.ehea.info/file/2007_London/69/7/2007_London_Communique_English_588697.pdf)
  14. *Modernisation of Higher Education in Europe: Access, Retention and Employability*. (2014). Eurydice Report. Brussels: Education, Audio-visual and Culture Executive Agency. [online] [20.05.2016]. Available at [http://eacea.ec.europa.eu/education/eurydice/documents/thematic\\_reports/165EN.pdf](http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/165EN.pdf)
  15. *Recommendation of the European Parliament and of the Council on key competences for lifelong learning*. (2006). 962/EC [online] [10.09.2016]. Available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32006H0962>
  16. *Research Careers in Europe: Landscape and Horizons. A report by the ESF Member Organisation Forum on Research Careers* (2009). European Science Foundation (ESF). Strasbourg: IREG. [online] [10.09.2015]. Available at [http://archives.esf.org/fileadmin/Public\\_documents/Publications/moforum\\_research\\_careers.pdf](http://archives.esf.org/fileadmin/Public_documents/Publications/moforum_research_careers.pdf)
  17. Roskosa A., Stukalina Y. (2016). The New Challenge for Higher Education Institutions of Latvia: Directing Students' Professional Career Development. In *The Proceedings of International Scientific Conference Rural Environment. Education. Personality (REEP)*, Vol. 9. pp. 239 – 246. [online] [10.11.2016]. Available at <http://ilufb.llu.lv/conference/REEP/2016/Latvia-Univ-Agricult-REEP-2016proceed2255-808X.pdf>
  18. *Standards and Guidelines for Quality Assurance in the European Higher Education Area*. (2009). (3<sup>rd</sup> ed.). Helsinki: European Association for Quality Assurance in Higher Education (ENQA). [online] [10.11.2016]. Available at [http://www.enqa.eu/wp-content/uploads/2013/06/ESG\\_3edition-2.pdf](http://www.enqa.eu/wp-content/uploads/2013/06/ESG_3edition-2.pdf)
  19. Stukalina Y. (2012). Addressing Service Quality Issues in Higher Education: The Educational Environment Evaluation from the Students' Perspective. *Technological and Economic Development of Economy: Baltic Journal on Sustainability*, Vol. 18(1-3), pp. 84 – 98.
  20. *The European Higher Education Area in 2012: Bologna Process Implementation Report*. (2012). [online] [14.06.2016]. Available at [http://eacea.ec.europa.eu/education/eurydice/documents/thematic\\_reports/138EN\\_HI.pdf](http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/138EN_HI.pdf)
  21. *The Role of the Universities in the Europe of Knowledge*. (2003). COM (2003) 58 final. [online] [22.06.2016]. Available at: [http://europa.eu/legislation\\_summaries/education\\_training\\_youth/lifelong\\_learning/c11067\\_en.htm](http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11067_en.htm)
  22. *Transferable Skills Training for Researchers: Supporting Career Development and Research*. (2012). Paris: OECD Publishing. [online] [20.05.2015]. Available at [http://www.keepeek.com/Digital-Asset-Management/oecd/science-and-technology/transferable-skills-training-for-researchers\\_9789264179721-en#.WKCC7vI97cs](http://www.keepeek.com/Digital-Asset-Management/oecd/science-and-technology/transferable-skills-training-for-researchers_9789264179721-en#.WKCC7vI97cs)
  23. Tremblay K., Lalancette D., Roseveare D. (2012). *Assessment of Higher Education Learning Outcomes, AHELO Feasibility Study Report*, Vol. 1: Design and Implementation. Paris: OECD. [online] [20.05.2015]. Available at <http://www.oecd.org/education/skills-beyond-school/AHELOFSReportVolume1.pdf>
  24. Voss R. (2009). Studying Critical Classroom Encounters: The Experience of Students in German College Education, *Quality Assurance in Education*, Vol. 17(2), pp. 156 – 173.

## Purposeful Development of Career Management Skills in the Podologists' Study Process

Mārīte Saulīte<sup>1</sup> Mg. ed.; Aelita Koha<sup>2</sup> Mg. ed.

University of Latvia, Latvia

[mmsaulite@inbox.lv](mailto:mmsaulite@inbox.lv)<sup>1</sup>, [aelitakoha@inbox.lv](mailto:aelitakoha@inbox.lv)<sup>2</sup>

**Abstract:** Improvement of the quality and attraction of vocational education is one of the priorities of education policy in the European Union; as a result demands also to the education of the health care specialists, including podologists, increase, paying more attention to purposefully set aims of the study programme, the organization of the study process and the planned learning outcomes. A study programme actually is the planning of the study process and content. Therefore the aims of the study programmes are closely connected with the processes and topicalities taking place in the society among which there is also the need for each specialist's abilities to manage his/her own life career. The aims set in the study programme are implemented during the study process. At present the career management skills are considered to be the leading individual skills that help to plan, organize, manage and control the effective use of the internal and external resources of the individual in order to attain the aims set in life. This refers not only to the skills necessary to choose the direction of education and future work but also in the professional development and successful management of the personal life. The professional formation of the podologist's career and the acquisition of the career management skills is topical already during their study process which is one of the planned learning outcomes. At present the formation of the career management skills in the study process of podologists is integrated indirectly. In order to explore the formation of podologists' career management skills in a purposefully organized study process the aims, methods and the planned learning outcomes of the study programme "Podology" implemented in P. Stradiņš medical college of University of Latvia and two European podologists' study programmes have been compared paying attention to the development of career management skills as the outcome of a purposeful pedagogical process. The aim of the article is to analyse the formation of podologists' career management skills in the frame of a purposefully organized study process. Research shows that the main stress in podology education is put on study process that has been directed to practice, which allows students to acquire the knowledge and skills that has been defined in study programmes, and as well promotes development of career management skills that are necessary in further professional development.

**Key words:** the study process of podologists, career management skills, purposefulness, higher education.

### Introduction

One of the priorities of the education policy in the European Union is the improvement of the quality and attraction of vocational education which leads to increased demands to the education of the health care specialists paying attention to the professional development of the specialists, including podologists (Cedefop, 2014). The professional formation of the podologist's career and the acquisition of the career management skills is topical already during their study process because the career management skills are considered to be the leading individual skills that help to plan, organize, manage and control the effective use of the internal and external resources of the individual in order to attain the aims set in life (VIAA, 2009). This refers not only to the skills necessary to choose the direction of education and future work but also in further professional development and successful formation of the personal life. The acquisition of the career management skills is underlined as a significant issue also in several topical guidelines of the European Union education, employment and social inclusion policy (Mūžilga karjeras..., 2012; Izglītības politikas..., 2013; Cedefop, 2014; OECD, 2014; UNESCO-UNEVOC, 2013). The European Union member countries have worked to establish the infrastructure (career development support system) that would support lifelong acquisition, application and further improvement of the career management skills of all its citizens (VIAA, 2012). However, there are some intrinsic differences that are connected to the extent to which the development of these skills has been worked out in education and employment. The acquisition of career management skills has to be integrated effectively in the education process and the link with the knowledge and those skills that are necessary in work and in life activity in general has to be ensured (Latvijas ilgtspējīgas ..., 2010).

The curriculum actually is the planning of the study process and the study content; the aims of the curricula, in their turn, are closely bound to the societal values (Andersone, 2007). Therefore the content of the podologists' career management skills and the promotion of their development, taking into consideration the knowledge-based economy approach, the rapid change of technologies and the requirements of the labour market, should be envisaged as a weighty component already in the study process and the planned learning outcomes. Also A. Schleicher, the executive director of the education department of OECD (Organisation for Economic Co-operation and Development) in the annual report of 2014 "Education and skills for life" expresses the following: „*The world economy no longer pays for what people know but for what they can do with their knowledge*”, demonstrating that it is necessary to think about skills maintenance not only about the quality of education at every stage of education (PEARSON, 2014).

The article analyses the formation of podologists' career management skills as a set of planned measures integrated in the study process that helps the young specialists to acquire and develop skills for coordinating one's interests, abilities and possibilities, for setting the aims of one's career and career management, and that gives knowledge and understanding not only about the world of work but forms the link with education, career planning and development throughout one's life.

### Methodology

*The theoretical substantiation when analysing purposeful formation of the career management skills is found in the holistic approach to education (Miller, 2000; Rudge, 2008). It treats education as the process of personal development and the individual as part of the wholeness. The holistic approach (Forbes, 2003, Rudge, 2008) has a philosophical view on the challenges of teaching and learning that relates to today's pedagogical practice and student-centred approach in university pedagogy as well as human pedagogy theories which accept both the importance of the individual ability and individuality, and the creation of new pedagogical approach depending on the concrete circumstances (Амонашвили, 1989; Сенько, 2000; Huitt, 2011; Roth, 2006; Schnotz, 2006; Dauber, 2009); the above said fully refers to the podologists' study process. The ideas of human pedagogy can be used corresponding to the social environment, students' needs and pedagogical possibilities that envisage continuous advancement to the quality of education, continuous exploration of students' needs and the use of pedagogical possibilities (e.g., e-environment, simulation equipment, technologies) in the changing situations. Didactics of medicine (Fabry, 2012; Dahmer, 2007) explores with what content, what ways and what goals the key aim is attained- what skills and knowledge the graduates have acquired. The problem actually is that certain skills and qualification does not guarantee the ability to solve problems and challenges in work and life (Fabry, 2012). Thus, creativity and critical thinking, decision making and problem solving skills, entrepreneur and interaction skills, understanding of values and culture, humanism and civil consciousness that help students to attain the aims, promote the personality development and allow developing career management skills in today's changing world have to be developed along with the knowledge, skills and professional competences necessary in the profession (Saulīte, Andersone, 2016).*

In order to explore the formation of podologists' career management skills the aims, methods and the planned learning outcomes of the study programme "Podology" implemented in P. Stradiņš medical college of University of Latvia and two European podologists' study programmes have been compared paying attention to the development of career management skills as the result of planned tasks of the pedagogical process. It has to be added that in Europe podologist's education is implemented on several qualification levels, for example, in Germany, Switzerland and Latvia the podologist has the 4<sup>th</sup> professional qualification level while in several other European countries podologists receive education on the 5<sup>th</sup> and even 6<sup>th</sup> qualification level, as it is in the United Kingdom. The present study analyses information about three podologists' study programmes corresponding to the 4<sup>th</sup> qualification level gained from the home pages of the colleges - P. Stradiņš medical college of the University of Latvia, New College Durham, United Kingdom and Sozialpflegeschulen Heimerer, Germany (Table 1).



Table 1

*Comparative analysis of the podologists' study programmes*

<i>Education institution</i>	<i>P.Stradiņš medical college of the University of Latvia</i>	<i>New College Durham, United Kingdom</i>	<i>Sozialpflegeschulen Heimerer, Germany</i>
<i>Education level</i>	Full time first level higher professional education, 4 <sup>th</sup> qualification level (EQF-120 ECTS)	Full time higher professional education, 4 <sup>th</sup> , 5 <sup>th</sup> and 6 <sup>th</sup> qualification level (EQF - 120 ECTS, plus 60 ECTS in every next level)	Full and part time professional education/Berufsausbildung, in German/, 3000 hours corresponding to education system of Germany
<i>Aim of the programme</i>	To prepare highly qualified, contemporarily educated, competent and competitive in the labour market specialists in podology.	To prepare high quality podologists for ensuring excellent care of patients.	<i>To prepare podologists as the cooperation partners between patients, doctors and technical orthopaedists.</i>
<i>Organization of the study process, methods</i>	The compulsory content of the first level professional higher education study programme comprises study courses, practice in health care institutions and development of the qualification work.	The programme integrates theory and practice, allowing developing one's clinical skills in assessment, diagnosis and treatment, as well as expanding one's knowledge of the normal and pathological processes in patients.	Theoretical and professional practical training in accordance with the study and examination regulations.
<i>Planned learning outcomes</i>	<i>To perform the professional activities in podologists' profession in accordance with the standard of the profession, professional competences, knowledge and skills determined in it.</i>	<i>By putting the patients' needs at the centre of our teaching, we equip graduates with the knowledge and skills required to provide the best possible service.</i>	<i>To perform the professional activity that ensures excellent podological care, rehabilitation and preventive measures.</i>
<i>Cooperation with employers</i>	Cooperation between the college, professional association, foreign specialists, employers and providers of career development services.	<i>Cooperation with the clinic, university and professional association.</i>	<i>Further partners: Ministry of Education, Labour Agencies, European Social Funds, the Professional Integration Program from the German Army as well as various institutions for rehabilitation.</i>

Taking into consideration the general nature of the information content displayed in the college home pages (Heimerer Schulen, 2017; Ausbildung Podologie, 2017; New College Durham, 2014; P.Stradins Medical College, 2017; Podology, 2017) which is defined by the privacy protection regulation of the information content, in order to reach the aim of the article the express survey of 20 second year students of the study programme "Podology" has been performed. The questionnaires were prepared and filled in during a face-to-face session. The questionnaires were anonymous, they comprised closed questions with the list of offered answers as well as the students had a possibility to add their own opinions and comments. The importance of career management skills, conditions promoting their formation, the applied teaching/learning methods and decisive factors related to the formation of career management skills in the study process were assessed on the 4 point scale.

The survey found out students' opinion about the aim the attainment of which requires career management skills. This, mainly, reflects the necessity of the career management skills in the

podologist's further professional development and self-development. The education guidelines that present a contemporary understanding of the career (PEARSON, 2014; OECD, 2014; Izglītības politikas..., 2013) also stress that career management skills incorporate not only the professional growth but the whole changing life context of man and the personality as a whole (Figure 1).

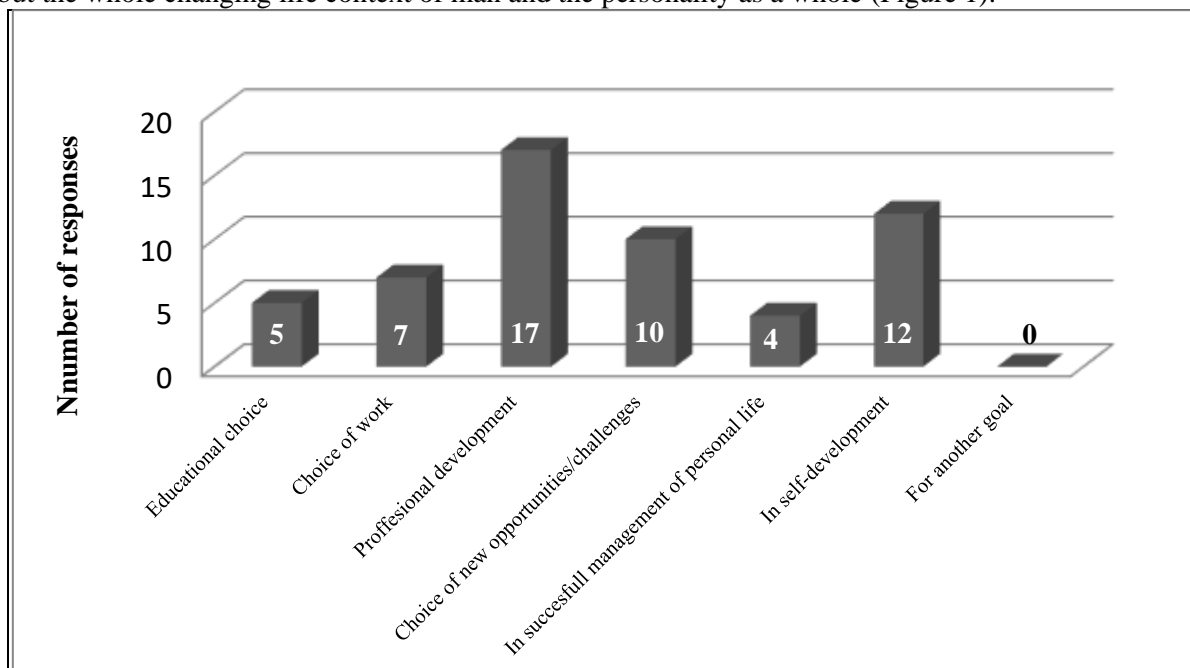


Figure 1. The purposes for which the career management skills are necessary.

Students' opinion about the factors promoting the development of career management skills in the study process has been found out. The person's maturity and the content of the study programmes were mentioned as the main factors which promote the formation of career management skills (Figure 2). This relates to D. Super's (Super, Super, 2001) career development theory in which the core concept is the career maturity (vocational maturity) that is explained as a successful and harmonious development of the career throughout the life and is based not only on the internal need to improve intellectually as one of the main individual factors but also the necessity caused by such external factors as a purposefully organized (student-centred) study process to gain and continuously supplement one's knowledge and skills.

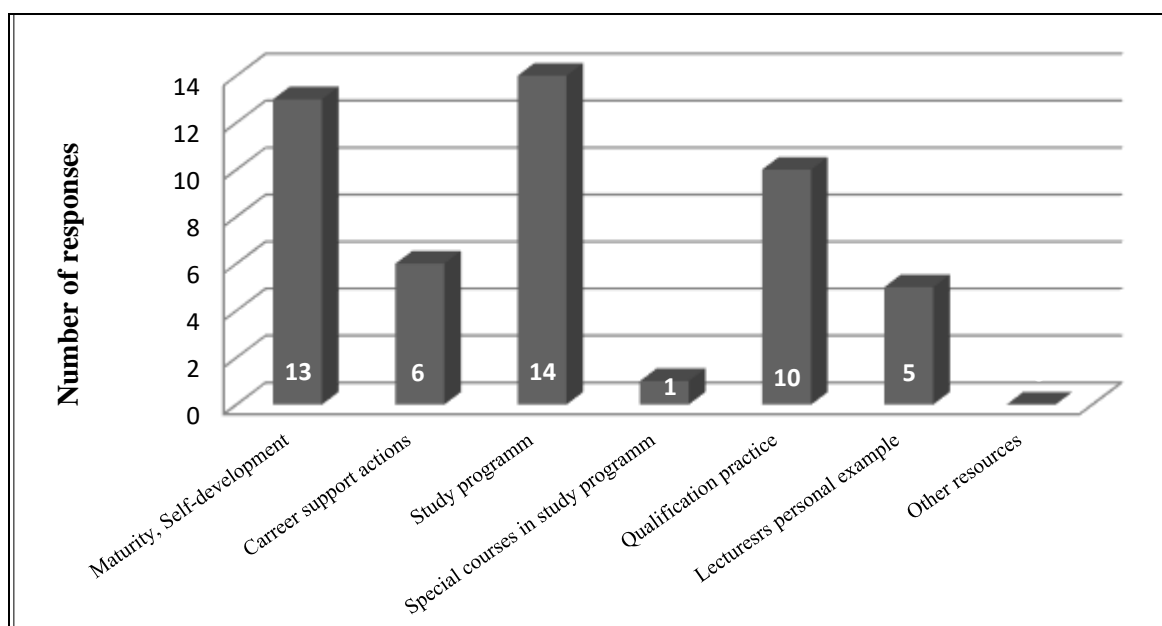


Figure 2. Factors promoting the formation of career management skills in the study process.

The most important study methods (Figure 3) that promote the formation of career management skills in a purposefully organized study process mentioned by students are practical classes, the solution of non-standard situations and the study practice outside the college that allow applying the latest ideas and developments in science in the care for patients, solving successfully the problem situations and prepare the new specialists for starting independent professional activity.

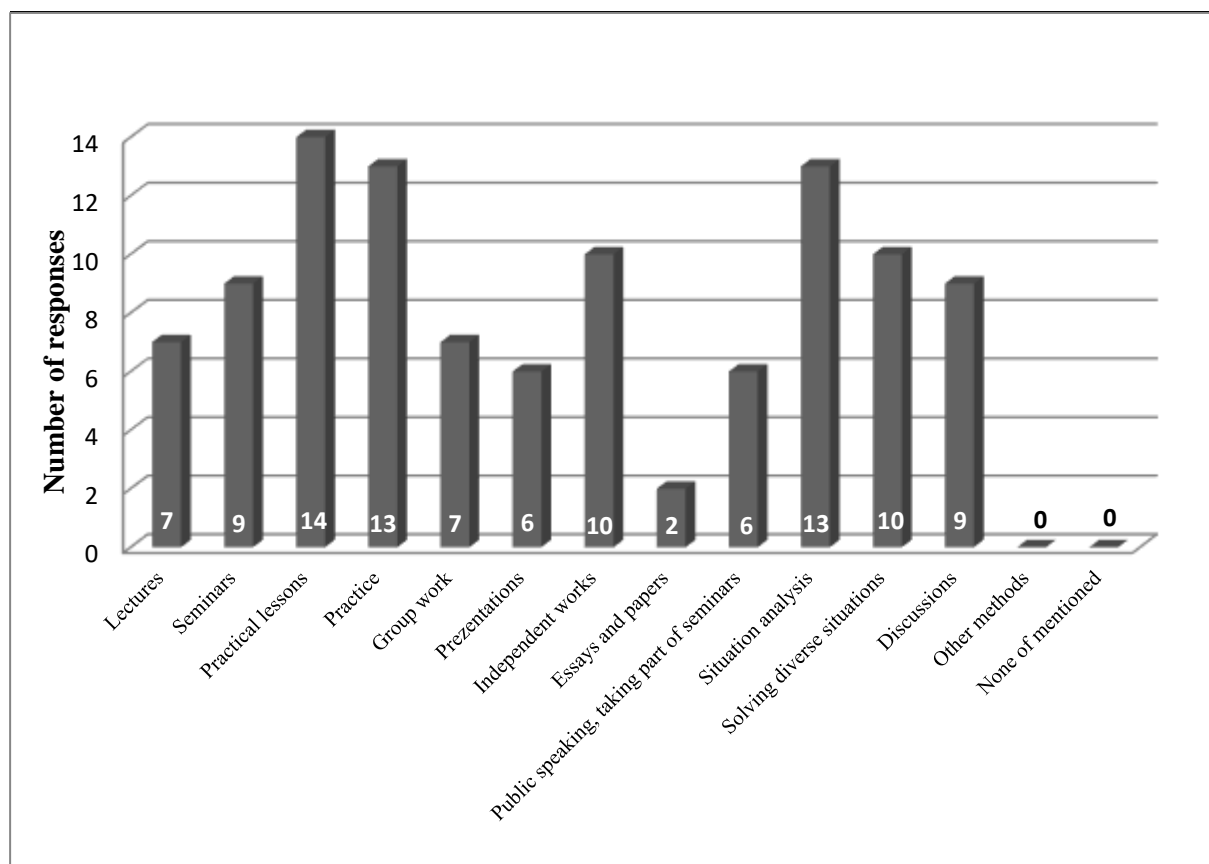


Figure 3. Study methods promoting the formation of the career management skills.

## Results and discussion

The results of the comparative analysis demonstrate that according to the information given in the home pages of the above mentioned colleges the main emphasis in the education of podologists is laid on organizing a practice-based study process that includes interactive lectures and practical classes both in two-year and three-year programmes. The formation of career management skills, in its turn, is not envisaged directly either in the aim of the programmes of the planned learning outcomes; it can be understood from the use of such key words that characterize the career management skills as - competitiveness, cooperation, adjustment to the change of conditions (patients' needs) and professionalism.

The analysed study programmes of podologists of the three above mentioned colleges combine theory and practice that consolidates the clinical skills, diagnostics and treatment as well as broadens students' knowledge about physiological and pathological processes and which are mentioned as the most important study methods (Figure 2) that promote the formation of career management skills in a purposefully organized study process by the majority (14 of 20) of respondents from P. Stradiņš medical college of the University of Latvia. Students parallel to lectures attend seminars and clinical practises. The results of the analysis of the organization of college study programmes and the way of studies prove that students have a possibility to acquire the knowledge and skills defined in the study programmes as well as to improve and develop communication skills, presentation skill, critical thinking skill, the skill of working in a group and to follow the principles of a multidisciplinary health care team necessary for the labour market. Also students' opinion (Figure 3) reflects a similar situation because the majority of the new podologists (13 of 20) mention the study practice outside the college and the solution of non-standard situations as intrinsic methods promoting the formation of podologists' career management skills. The comparatively big number of practices in the podologists' study programmes ensures students' readiness for the professional



activity, e.g., in Germany or the United Kingdom, similarly as in Latvia the study practices are organized in students' groups both in the pre-clinic rooms of the educational institutions and the health care institutions. The cooperation with employers and the formation of the new podologists' career starts already in the study process during the clinical practices when students find themselves in a real work environment both in out-patient institutions, senior homes and in-patient departments (clinics) where the practice mentors perform their professional work in the speciality and involve students in the health care team as it is proved by the information provided by the study programmes of P. Stradiņš medical college of the University of Latvia, "Sozialpflegeschulen Heimerer", Germany and "New College Durham", the United Kingdom.

Although the professional development of new podologists initiates already in the study process it is still a continuous, the advancement-based process which is necessary both in the professional development and self-development and which is also demonstrated by the survey results where almost all respondents (17 of 20) indicate that career management skills are needed in the professional activity and more than a half (12 of 20) point out career management skills are needed in self-development thus acknowledging that modern understanding of career envisages that career management skills incorporate not only the profession but the whole changing life context of man and the personality as a whole.

## Conclusions

One of the planned learning outcomes of a purposefully organized pedagogical process is the formation of the whole changing life context of man and the personality as a whole that at present is integrated indirectly in the podologists' study process which is confirmed by the aims of the analysed study programmes and the results of students' survey.

The formation of the podologist's the whole changing life context of man and the personality as a whole is determined by the study process and personality maturity that help to achieve the professional development, self-development, new challenges and educational aims.

The content of the study programme which is ensured by purposefully organized practical classes, study practices and situational tasks promote the formation of career management skills in the study process.

The college programmes combine theory and practice that consolidates not only the clinical skills, diagnostics and treatment but also promote the development of the professional career which is defined by a purposeful organization of the study process and is directed towards the development of career management skills.

## Bibliography

1. Andersone R. (2007). Mācību programmu izveides pedagoģiskie principi (The Pedagogical Principles of Curriculum Making). Latvijas Universitātes rakstu krājumā *Pedagoģija un skolotāju izglītība*. LU raksti Nr.715. Rīga: LU, 7. – 14.lpp. (in Latvian)
2. Ausbildung Podologie (Education Podology). (2017). Heimerer Schulen in Döbeln. [online] [02.11.2016]. Available at <http://www.heimerer-schulen.de/ausbildung/podologie/> (in German)
3. Cedefop Work programme. (2014). Luxembourg: Publications Office of the European Union. [online] [06.11.2016]. Available at <http://www.cedefop.europa.eu/en/publications-and-resources/publications/4129>
4. Dahmer J. (2007). *Didaktik der Medizin. Professionelles Lehren fördert effektives Lernen (Didactics of Medicine)*. Stuttgart: Schattauer. (in German)
5. Dauber H. (2009). *Grundlagen humanistischer Pädagogik: Leben lernen für eine humane Zukunft (Basics of Humanistic Pedagogy: Life Learning for a Humane Future)*. Klinkhardt: Bad Heilbrunn: Klinkhardt. (in German)
6. Fabry G. (2012). *Didaktik der Medizin (Didactics of Medicine)*. In: Krukemeyer M.G. (Hrsg): *Aus- und Weiterbildung in der klinischen Medizin. Didaktik und Ausbildungskonzepte*. Stuttgart: Schattauer, S. 3 – 18. (in German)
7. Forbes S.H. (2003). *Holistic Education: An Analysis of Its Ideas and Nature. The Foundations of Holistic Education Series*, Vol. 8.
8. Heimerer Schulen. (2017). Seiten der Heimerer Schulen in Döbeln (Home Page of the Heimer Schools in Döbeln). [online] [02.11.2016]. Available at <http://www.heimerer-schulen.de/orte/doebeln/> (in German)

9. Huitt W. (2011). *Why Study Educational Psychology? Educational Psychology Interactive*. Valdosta: Valdosta State University. [online] [11.11.2016]. Available at <http://www.edpsycinteractive.org/topics/intro/whyedpsy.html>
10. *Izglītības politikas attīstības risinājumu plānotās ietekmes novērtējums (Assessment of Planned Impact for Education Policy Development Solutions)* (2013). Latvijas Republikas Izglītības un zinātnes ministrija. Rīga: Dynamic University SIA. [online] [16.10.2016.]. Available at <http://www.izm.gov.lv/images/statistika/petijumi/36.pdf> (in Latvian)
11. *Latvijas ilgtspējīgas attīstības stratēģija 2030 (The Strategy of Sustainable Development of Latvia Until 2030)*. (2010). Rīga: Latvijas Republikas Saeima. [online] [30.11.2016.]. Available at [http://www.liepaja.lv/upload/attistibas\\_planosana/lia\\_2030\\_10jun2010\\_saeima\\_apstiprina.pdf](http://www.liepaja.lv/upload/attistibas_planosana/lia_2030_10jun2010_saeima_apstiprina.pdf) (in Latvian)
12. Miller R. (2000). Beyond Reductionism: The Emerging Holistic Paradigm in Education. *The Humanistic Psychologist*, Vol. 28(1-3), pp. 382 – 393. [online] [08.11.2016.] Available at <http://dx.doi.org/10.1080/08873267.2000.9977003>
13. *Mūžilga karjeras atbalsta politikas izstrāde: Eiropas metodiskie ieteikumi (Development of Lifelong Guidance Policy)*. (2012). European Lifelong Guidance Policy Network (ELGPN). ELGPN Tools No.1. Talsi, Latvija: Talsu tipogrāfija. [online] [20.11.2016.]. Available at [http://www.elgpn.eu/publications/browse-by-language/latvian/LV\\_Resource\\_Kit\\_web.pdf/](http://www.elgpn.eu/publications/browse-by-language/latvian/LV_Resource_Kit_web.pdf/) (in Latvian)
14. New College Durham. (2014). BSc (Hons) Podiatry. [online] [04.11.2016.] Available at <http://www.newcollegedurham.ac.uk/bsc-hons-podiatry-cl684/>
15. OECD. (2014). *Skills Beyond School: Synthesis Report*, OECD Reviews of Vocational Education and Training. Paris: OECD Publishing. [online] [06.01.2016.]. Available at <https://www.oecd.org/edu/skills-beyond-school/Skills-Beyond-School-Synthesis-Report.pdf>
16. PEARSON. (2014). *Education and skills for life*. Pearson PLC [online] [12.09.2016.]. Available at <http://thelearningcurve.pearson.com>
17. P.Stradins Medical College of the University of Latvia. (2017). Home page. [online] [02.11.2016.] Available at <http://www.psk.lu.lv/?langs=1062>
18. Podology. (2017). P.Stradins Medical College of the University of Latvia [online] [02.11.2016.] Available at <http://www.psk.lu.lv/study-programms/podology>
19. Roth W. (2006). *Sozialkompetenz fördern: In Grund- und Sekundarschulen, auf humanistisch-psychologischer Basis (Promoting Social Competences: In Primary and Secondary Schools, on Humanistic-Psychological Basis)*. Klinkhardt: Julius. (in German)
20. Rudge L. (2008). *Holistic Education: An Analysis of its Pedagogical Application*. Doctoral Thesis. USA: University of Ohio. [online] [23.11.2016.] Available at [http://www.academia.edu/1293004/Rudge\\_L.\\_2008\\_.Holistic\\_education\\_An\\_analysis\\_of\\_its\\_pedagogical\\_application.Ph.D.Dissertation\\_The\\_Ohio\\_State\\_University\\_Columbus\\_Oh\\_U.S.A](http://www.academia.edu/1293004/Rudge_L._2008_.Holistic_education_An_analysis_of_its_pedagogical_application.Ph.D.Dissertation_The_Ohio_State_University_Columbus_Oh_U.S.A)
21. Saulīte M., Andersone R. (2016). Karjeras vadības prasmju attīstības identificēšanas problēmas podologu studiju procesā (Identification of Career Management Skills Related Problems in the Study Process of Podologists). Starptautiskās zinātniskās konferences *Society, Integration, Education* rakstu krājumā. Rēzekne: RA, 221. – 230.lpp. (in Latvian)
22. Schnotz W. (2006). Humanistische Ansätze (Humanistic approaches). In W. Schnotz, *Pädagogische Psychologie*, pp. 13 – 19. Weinheim: Psychologie Verlags Union. (in German)
23. Super C.M., Super D.E. (2001). *Opportunities in Psychology Careers*. Illinois: VGM Career Books. [online] [23.11.2016.] Available at <http://oksana.home.mruni.eu/wp-content/uploads/2010/09/Super-Super-2001Opportunities-in-Psychology-Careers.pdf>
24. UNESCO-UNEVOC. (2013). *Revisiting Global Trends in TVET: Reflections on Theory and Practice*. Bonn: UNESCO. [online] [20.05.2016.]. Available at [http://www.unevoc.unesco.org/fileadmin/up/2013\\_epub\\_revisiting\\_global\\_trends\\_in\\_tvet\\_book.pdf](http://www.unevoc.unesco.org/fileadmin/up/2013_epub_revisiting_global_trends_in_tvet_book.pdf)
25. VIAA. (2009). *Karjeras izglītība skolā (Career Education in Schools)*. Rīga: VIAA. [online] [16.11.2016.]. Available at [www.viaa.gov.lv/lat/karjeras\\_atbalsts/euroguidance\\_sadala/karjeras\\_specialistiem/](http://www.viaa.gov.lv/lat/karjeras_atbalsts/euroguidance_sadala/karjeras_specialistiem/) (in Latvian)
26. VIAA. (2012). *Mūžilgs karjeras atbalsts Eiropā: politikas attīstības pamatnostādnes (Lifelong Guidance in Europe: Guidelines of Policy Development)*. Rīga: VIAA. (in Latvian)
27. Амонашвили Ш. А. (1989). *Чтобы жизнь учителя состоялась. Педагогика наших дней (Pedagogy of Nowadays)*. Москва: Просвещение. (in Russian)
28. Сенько Ю. В. (2000). *Гуманитарные основы педагогического образования (Basics of Humanities of Teacher Education)*. Москва: Академия. (in Russian)

## Academic Performance of Students and Difficulty of University Education

Lucie Smékalová<sup>1</sup> PhDr., Ph.D. et Ph.D.; Karel Němejc<sup>2</sup> Ing., Ph.D.

Czech University of Life Sciences Prague, Institute of Education and Communication, Czech Republic  
[smekaloval@ivp.czu.cz](mailto:smekaloval@ivp.czu.cz)<sup>1</sup>; [nemejc@ivp.czu.cz](mailto:nemejc@ivp.czu.cz)<sup>2</sup>

**Abstract:** The paper is focused on two selected factors of university education, i.e. on the academic performance of students and on the difficulty of university studies. The target group consists of university students of distance form of study programme “Teaching of Practical Vocational Training” observed in the period of their three-year studies. The aim of the paper is: (1) to determine the level of academic performance of students in relation to the Gaussian distribution in each of the past five academic years in order to assess whether their studies are optimal, easy or difficult; (2) to find out the subjective degree of difficulty of studies in two academic years with an interval of five years; (3) to compare these two academic years from the perspective of subjective difficulty and achieved academic performance. The academic performance of students is represented by their grade point average for all the years of studies. The grade point average is then categorized into ECTS grading scale with the categories A, B, C, D and E. These categories are compared with the evaluation based on the Gaussian distribution in order to draw objective conclusions on the difficulty of university studies. The survey is completed by a questionnaire summarizing the subjective responses of students about the difficulty of their studies in the form of mode value of the given numerical scale. The results of the survey of the analysed target group showed that: the difficulty of studies through the academic performance of students over the past five years in comparison with the Gaussian distribution appeared to be low, however the difficulty of studies through the subjective evaluation of students seemed more likely to be high. This implies that subjectively the students evaluate the difficulty of their studies rather more critically than their achieved academic performance is.

**Keywords:** academic performance, difficulty of studies, university education, vocational education.

### Introduction

Academic performance of students has recently become a very topical issue as the quality of the results of university education is monitored. For this purpose, the following points grow in importance: (a) statistics on the level of academic performance of students, (b) search of causes and measures against so called unfinished studies of university students, (c) evaluation of difficulty of studies via a subjective view of students.

The above mentioned reasons are confirmed theoretically, for instance, in the efficiency of the educational process. Specifically, in so called resultative efficiency which focuses on educational outcomes (Kulič, 1980). Therefore, the paper highlights resultative efficiency in the form of achieved level of academic performance of students. Finding the causes of failure of students and promoting measures of universities which would reduce the proportion of unsuccessfully finished (i.e. unfinished) students is a priority of education policy in the Czech Republic (Strategie vzdělávací ..., 2014, 21) which reflects the priorities of the EU education policy (Strategie Evropa 2020..., 2015). In order to implement such measures, the universities must first know the current academic performance of their students. They are also often associated with so called academic adaptation which includes various aspects of adaptation to the new system of study and organization of education, and especially they are related to motivation and performance of students (Hrehová, Rác, 2015, 90). To evaluate the quality of education in the university environment there is the system of internal evaluation of university education which is declared, at the national level in the Czech Republic, in the Amendment to the Higher Education Act, effective since September 1st, 2016 (Vysokoškolský zákon, 1998). In this respect the paper includes a view of the results of the evaluation of students who evaluated the difficulty of their studies.

Academic performance acts as an indicator of many aspects of the quality of education in the university environment. That is why *the aim of the paper* reflects the following survey questions: (1) What is the level of the academic performance of students over the past five years in relation to the Gaussian distribution? The answer will reveal the finding about whether the study of the selected sample in the university environment is recognized as rather difficult or rather easy. (2) Based on a subjective evaluation survey, what degree of difficulty of studies the students attribute to their studies, namely in

the comparison of the academic years 2011-2012 and 2015-2016. (3) Are there any differences between the two academic years 2011-2012 and 2015-2016 in the subjective perception of the difficulty of studies and will such differences be also reflected in the academic performance of the students?

The survey is rather the first insight into the current examined issues, therefore the results cannot be compared with previous research of the authors of the paper. However, the advantage is that the survey provides data on academic performance which are transferred to the ECTS grading scale, and this offers an opportunity for comparison with other researches with similar methodology. The above mentioned may be an incentive for further research, for example, for a comparative survey the subject of which is the academic performance of university students.

## Methodology

*The target group* consists of students of the Institute of Education and Communication of the Czech University of Life Sciences Prague of distance form of study of bachelor study programme “Specialization in Pedagogy”, in the field of study “Teaching of Practical Vocational Training”. The selection of respondents corresponds with the special methodology of evaluation processes that are carried out regularly at the university. Given the fact that relevant data from evaluation surveys from the years 2011-2012 and 2015-2016 covering all three classes within the year of study were available the following selection of respondents from other academic years (2012-2013, 2013-2014, 2014-2015) was intentional. It is thus possible to observe: (a) five consecutive academic years to identify the academic performance of students, (b) to compare the first and the last academic year in terms of subjective perception of the difficulty of studies. In other words, the survey focused on subjective difficulty of studies is based on regular questionnaire surveys (i.e. a special methodology using a random selection of respondents) carried out during the evaluation processes of the university, whilst the survey of academic performance is based on a special database programme keeping records of the students (i.e. an intentional selection).

*The research sample for the determination of the academic performance* (i.e. for the survey question No. 1) consists of 291 respondents. Always they are students of the third classes in particular academic years where their academic performance for all the years of study is observed. The individual academic years then represent a dividing line of the data collection in graduate classes.

*The research sample for finding out the subjective difficulty of studies* (i.e. for survey questions No. 2 and 3) consists of 215 respondents, of which 116 respondents are for the academic year 2011-2012 (i.e. the 1st, 2nd and 3rd classes) and 99 respondents for the academic year 2015-2016 (i.e. the 1st, 2nd and 3rd classes). The number of respondents for both observed academic years is relatively balanced and will not cause distortion of the results.

The following were chosen *as the methods of data collection*: (a) a questionnaire, (b) a database keeping records of the students. The questionnaire was distributed to students of the 1st, 2nd and 3rd classes during both winter semester (December 2011 and December 2015) and summer semester (April 2012 and April 2016), with a return rate of 100 % since it was a personal distribution. When sorting the data, no questionnaire was excluded since only one item of the questionnaire which was answered in accordance with the prescribed way was used for the purposes of the survey. On the contrary, students who did not participate in the evaluation survey were excluded from the results of the database keeping records of the students for the years 2011-2012 and 2014-2015 (only in case of survey questions No. 2 and 3) so that the data could be compared. Although the evaluation survey was anonymous, based on the attendance list it was possible to exclude students from the database who were absent on the day of the data collection. In other words, only the names of students who did not participate in the evaluation survey were known and these were excluded from the database.

*As the methods for analyses of the data* the following were used: (a) the arithmetic average (grade point average) for the results of academic performance for individual academic years (see survey question No. 1), (b) the mode, for the difficulty of studies and for the results of academic performance only for the academic years 2011-2012 and 2015-2016 (see survey questions No. 2 and 3).

The difficulty of studies was measured through the answers to one questionnaire item (“My studies and their completion were difficult for me”) with response options within the numerical scale of 1 - 6 (1\_min, 6\_max). Academic performance was classified according to the arithmetic average (grade point average)

of the individual scales (Table 1). These scales correspond to the ECTS grading scales in order to compare these results internationally in the future, which means according to European standards.

*The methodological question* was how to provide a comparison of academic performance of students in the academic year, respectively in several academic years. What can be considered as the indicator of measurement among the grading scales (A, B, C, D, E, F)? How then identify through academic performance whether the study was rather difficult or rather easy? Which procedure will allow an objective measurement? Answers to these questions are provided by the Gaussian distribution of the data and by the EU recommendations for the distribution of percentage of awarded grades. There are two methods of the distribution of percentage of the grades: (a) from 2009 (ECTS Users'...2009), (b) from 2015 (ECTS Users'...2015).

Methodology from 2009 which includes a Gaussian distribution of the data has been chosen for the purpose of the paper, see Table 1.

Table 1

**Identification of academic performance through ECTS grading scale in the context of Gaussian distribution**

Gaussian distribution	ECTS grading scales		Academic performance_grade point average	
	Symbol	Interpretation	From	To
10	A	Excellent	1.0	1.4
25	B	Very good	1.5	1.9
30	C	Good	2.0	2.4
25	D	Satisfactory	2.5	2.9
10	E	Sufficient	3.0	3.9
-	F	Fail	4.0	-

The "F" grade was included in the survey, but because the average of the academic performance for the entire duration of the studies was observed then the "F" grade spread in the values. In neither case the academic performance of students reached the "F" grade therefore it was no longer included in the graphs.

The average values of academic performance for each student were obtained from the database keeping records of the students, subsequently frequencies were calculated for each of the grading scales A, B, C, D, E, and these were plotted on the graphs (Figure 1 to Figure 5). Of the total number of students in the academic year the likely proportion of students for each grading scale was calculated using the Gaussian distribution. The graph (figure) therefore enables comparison of the optimal distribution of the data by a Gaussian curve to the real measured values of the academic performance of the students.

If the measured data (academic performance of students) copy the distribution of the Gaussian curve, then the difficulty of university study shows an adequate difficulty of the studies. If the measured data are rather of the "L" shape curve it means that the study is too easy. If the measured data are rather of the "J" shape curve it signifies that the study is too difficult (Slavík, 1999, 58). Of course, this interpretation is of indicative character since the evaluation process can be influenced by many factors (IQ of the students, their docility, criteria for the assessment of the test, the low objectivity of the academic staff during the oral examination). However, the results are important because they highlight the level of the difficulty of studies through academic performance.

A questionnaire item focusing on the subjective perception of the difficulty of studies as seen by the students was also used to illustrate the data. Here, the data were measured using the scale and the mode of the scale was recorded. The interpretation of the data then indicates the degree of the difficulty of studies as viewed by the students in individual classes. Here, the data are presented transversely, i.e. through individual classes. In these students the academic performance was observed so that it was recorded its mode. This all enables to compare the academic years 2011-2012 and 2015-2016, and then to discuss the results (Table 2, Figure 6).

## Results and Discussion

Frequencies of each of the grading scales A, B, C, D and E were identified for each academic year and the Gaussian distribution was calculated according to the prescribed percentage (Table 1). The results are plotted in the following graphs (Figure 1 to Figure 5).

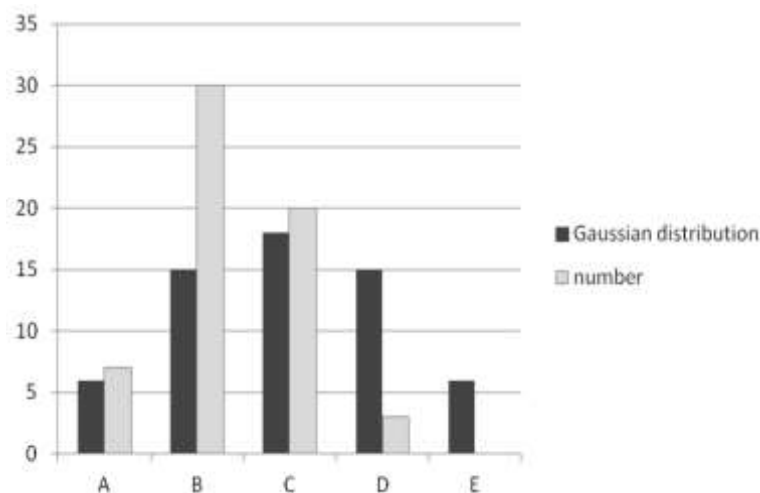


Figure 1. Academic performance of students in the academic year 2011-2012.

In the academic year 2011-2012 (Figure 1) the results (the light colour) do not correspond with the Gaussian curve (the dark colour). The results of “A” and “C” grades approach the Gaussian distribution the most. The grade “B” is exceeded by a half of the frequencies which means that the “B” grade was reached by more students than is optimal. The opposite example is shown in the “D” grade as it was reached by 1/5 less students than would correspond to the optimal distribution. “E” grade did not appear at all in the assessment of the students. It can be pointed out that *the study is rather simple for the university students* as they achieve mostly favourable grades within the scale, i.e. grades A, B and C. In addition, frequencies of these grades exceed the prescribed Gaussian distribution. Less favourable grade (i.e. grade “D”) appears only in a small number of frequencies. “E” grade does not appear at all.

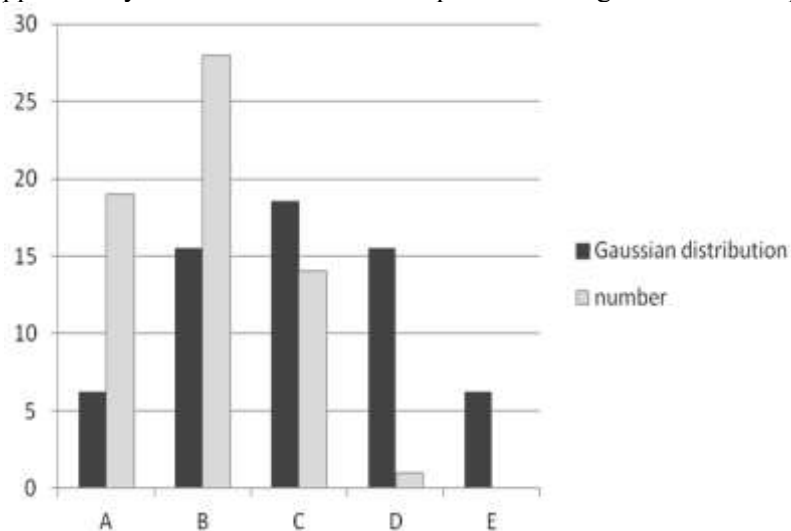


Figure 2. Academic performance of students in the academic year 2012-2013.

Again, in the academic year 2012-2013 (Figure 2) it can be also stated that *the study is rather simple for students*. In this case “A” grade even exceeds the prescribed ratio of the distribution of frequencies by 1/3. Also “B” and “D” grades show a large deviation. Almost the same results were obtained in the evaluation of the academic year 2014-2015 (Figure 4).

In the results of the academic years 2013-2014 (Figure 3) and 2015-2016 (Figure 5) there is even a steep curve downwards. This curve is denoted as the “L” curve (Slavík, 1999, 58) and it indicates that *the study is too easy*. No grades of the grading scale correspond to the prescribed distribution that includes

a Gaussian distribution. Where there should be lower frequencies of grading scales they are higher actually, and contrary where there should be higher ones they are lower. See the above mentioned figures.

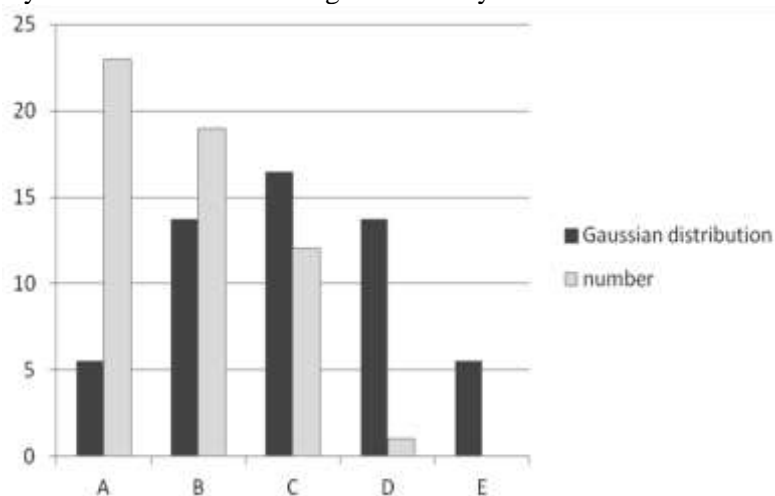


Figure 3. Academic performance of students in the academic year 2013-2014.

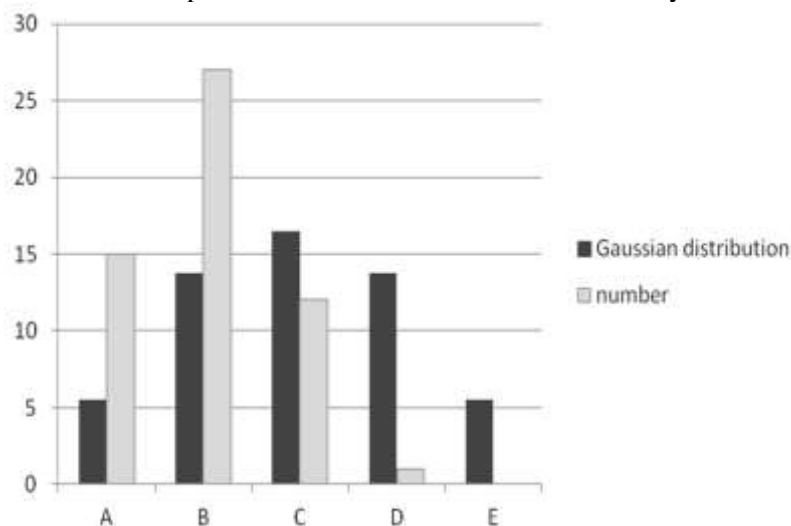


Figure 4. Academic performance of students in the academic year 2014-2015.

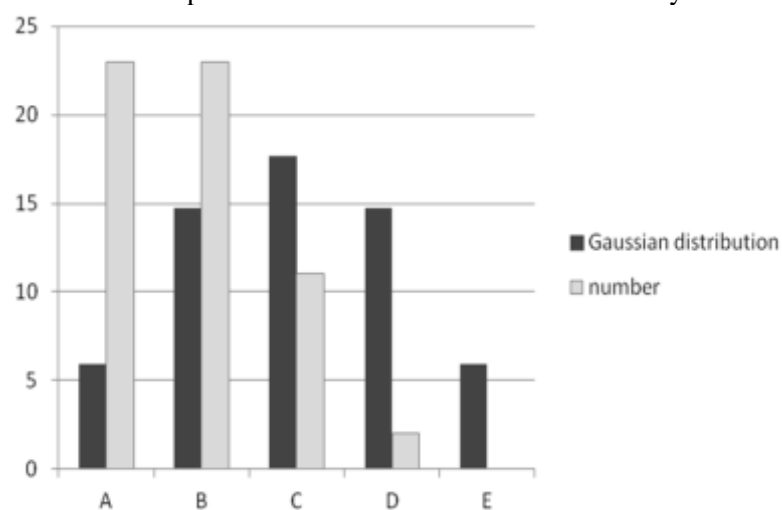


Figure 5. Academic performance of students in the academic year 2015-2016.

The question is: why? What could be the cause of this all? The answers have already been suggested. For example, more talented students can start their academic studies, they are more gifted and their studies become easy for them. The answer may also be hidden in the evaluation criteria or in the



curriculum itself. The structure of the subjects of the field of study must be very close to the students as they have already been working as teachers of practical training and they only complete their education and qualifications. The causes may also be on the side of the objectivity of the academicians. Finally, the trend in which universities are financially dependent on the number of their students may play a certain role. Then, a university teacher may take into account during the assessment not only the students' knowledge, but also the interests of the university or some empathy to students in the sense of not spoiling the quality of their lives (Bomba, Trbalíková, 2015, 142). For these respondents the failure to obtain the necessary education would mean the loss of their jobs.

So far, the difficulty of studies has been investigated by quantification of the academic performance. For completion it is also appropriate to examine the subjective view of the respondents of the difficulty of studies and to compare it with the level of their academic performance. In this context data from the evaluation surveys in the observed field of study for two academic years, i.e. 2011-2012 (Miller, Němejc, 2012) and 2015-2016 (Němejc, 2016) are available.

The comparison of the difficulty of studies and academic performance in all the classes of the given field of study for the mentioned academic years is shown in the following table through the mode (Table 2).

Table 2

**The comparison of the difficulty of studies and academic performance in the academic years 2011-2012 and 2015-2016**

<b>2011-2012</b>	<b>1st class</b>	<b>2nd class</b>	<b>3rd class</b>
Difficulty of studies_mode (1_min, 6_max)	6	4	6
Academic performance_mode (1.0_min, 4.0_max)	2 (B)	2 (B)	2 (B)
<b>2015-2016</b>	<b>1st class</b>	<b>2nd class</b>	<b>3rd class</b>
Difficulty of studies_mode (1_min, 6_max)	4	5	4
Academic performance_mode (1.0_min, 4.0_max)	2 (B)	1 (A)	1 (A)

Students in the first and third classes assess the difficulty of their studies exactly the same across the academic years 2011-2012 and 2015-2016. In the second class their studies appear to them to be more difficult in the academic year 2015-2016 than in 2011-2012, while the academic performance of students is very favourable, reaching grades 2 (i.e. "B") and 1 (i.e. "A"). In comparison of the academic years the "A" grade appears even more in favour of the academic year 2015-2016. It is interesting that the students subjectively perceive their studies to be more difficult than their achieved academic performance is. Then, the more interesting is the difference of the results i.e. higher values are identified on the scale of the difficulty of studies and lower values on the scale of academic performance. Comparison of the difficulty of studies is provided by the Figure 6.

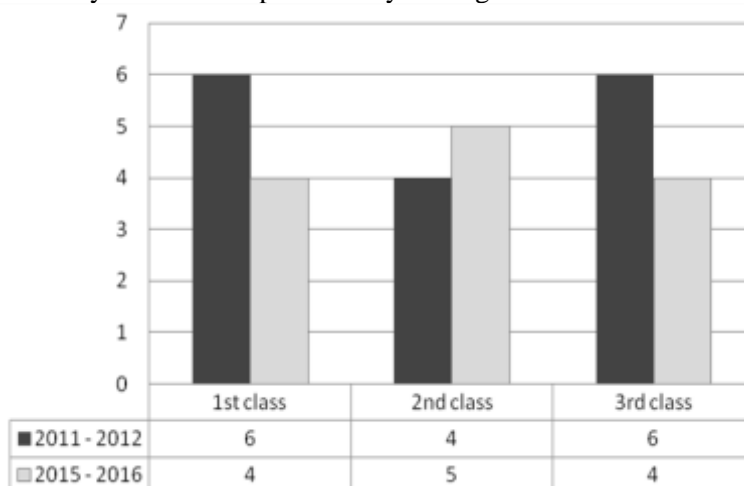


Figure 6. The difficulty of studies: the comparison between the years 2011-2012 and 2015-2016.

Overall, the figure shows the mode of the scale of the difficulty of studies for the indicated classes of both academic years. The first and third classes have the same assessment of the difficulty of studies,

even with the difference by two points on the scale. In the second class of the studies there is a difference by one point on the scale only. Students therefore assess the academic year 2015-2016 to be less difficult to study wherein it should be noted that the values of the scale range from 4 and above. In other words, the difficulty of studies is still considered by the students to be high. However, their academic performance does not comply with this. This implies that the subjective evaluation of the studies is more critical than the achieved academic performance of the students.

The survey revealed interesting findings and indicated the direction of future research. This quantitative survey should be complemented by a qualitative one to investigate the following: (a) the causes of critical evaluation of the difficulty of studies compared to favourable academic performance, (b) the causes of factors of evaluation of the academic performance, especially of those where the unevenly distributed data against the Gaussian distribution have been demonstrated.

## Conclusions

The results of the survey of the analysed sample responded to the survey questions as follows: (1) the level of academic performance of students over the past five academic years does not correspond to the Gaussian distribution (see the survey question No. 1); (2) the students identify the difficulty of their studies on the scale of 4 and 6 for the academic year 2011-2012, and on the scale of 4 and 5 for the academic year 2015-2016 (see the survey question No. 2); (3) there are differences in the subjective evaluation of the difficulty of studies of the academic years 2011-2012 and 2015-2016 and namely it is also reflected in the achieved academic performance (see the survey question No. 3).

Specifically, the results of the survey showed that:

- the difficulty of studies through the academic performance of students over the past five academic years appears to be **low**;
- in the years 2013-2014 and 2015-2016 the study can be classified as **too easy** because the data achieve the “L” shape curve;
- the difficulty of studies through subjective evaluation of students appears to be **high**, i.e. values from 4 to 6 of the maximum value 6;
- the study in 2015-2016 seems to be more difficult to the students than in 2011-2012;
- the academic performance of students in 2015-2016 reaches also the value of “A” grade.

Overall it can be concluded that the study is easy for students and that their subjective evaluation of the difficulty of studies is rather more critical than their achieved academic performance is. The above mentioned may be attributed to the fact that the students have already been working as teachers of practical training and the issue of the curriculum is very close to them, which can affect their academic performance.

## Bibliography

1. Bomba L., Trbalíková J. (2015). Plasticnosť vytvárania hodnotenia z pohľadu študenta vysokej školy (The Plasticity of Formation of Evaluation from the Perspective of University Students). *Pedagogika. SK*, Vol. 6 (3), pp. 141 – 159. (in Czech)
2. *ECTS Users' Guide*. (2009). Brussels: [online] European Communities. [online] [12.11.2016]. Available at [http://ec.europa.eu/dgs/education\\_culture/repository/education/tools/docs/ects-guide\\_en.pdf](http://ec.europa.eu/dgs/education_culture/repository/education/tools/docs/ects-guide_en.pdf)
3. *ECTS Users' Guide*. (2015). European Union. Luxembourg: Publications Office of the European Union. [online] [12.11.2016]. Available at [http://ec.europa.eu/dgs/education\\_culture/repository/education/library/publications/2015/ects-users-guide\\_en.pdf](http://ec.europa.eu/dgs/education_culture/repository/education/library/publications/2015/ects-users-guide_en.pdf)
4. Hrehová D., Rác I. (2015). Adaptácia na vysokoškolské štúdium – teoretické východiská a čo o tom hovorí prieskum medzi študentmi (Adaptation to the University Education – Theoretical Background and what About It Says a Survey Among Students). *Pedagogika. SK*, Vol. 6 (2), pp. 86 – 111. (in Czech)
5. Kulič V. (1980). Někteří kritéria efektivit učení a vyučování a metody jejího zjišťování (Some of the Criteria of Effectiveness of Learning and Teaching and the Methods of their Detection). *Pedagogika. SK*, Vol. 30 (6), pp. 667 – 698. (in Czech)

6. Miller I., Němejc K. (2012). *Souborná zpráva: Analýza názorů studentů a pedagogů na výuku a podmínky výuky na ČZU v Praze v akademickém roce 2011/2012 (A Comprehensive Report: The Analysis of Opinions of Students and Teachers on Teaching Process and Teaching Conditions at the CULS Prague in the Academic Year 2011/2012)*. Prague: ČZU. (in Czech)
7. Němejc K. (2016). *Souborná zpráva: Analýza názorů studentů a pedagogů na výuku a podmínky výuky v bakalářských a navazujících magisterských studijních programech a v celoživotním vzdělávání na ČZU v Praze (A Comprehensive Report: The Analysis of Opinions of Students and Teachers on Teaching Process and Teaching Conditions in Bachelor and Master Study Programmes and in Lifelong Learning at the CULS Prague)*. Prague: ČZU. (in Czech)
8. Slavík J. (1999). *Hodnocení v současné škole (Evaluation in the Contemporary School)*. Praha: Portál. (in Czech)
9. *Strategie Evropa 2020 - stručné shrnutí (Europe 2020 Strategy - A Brief Summary)*. (2015). [online] [12.11.2016]. Available at: [http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index\\_cs.htm](http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index_cs.htm) (in Czech)
10. *Strategie vzdělávací politiky České republiky do roku 2020 (Strategies of the Education Policy of the Czech Republic until 2020)*. (2014). Praha: MŠMT. (in Czech)
11. *Vysokoškolský zákon (The Law of Higher Education)*. (1998). Zákon o vysokých školách č. 111/1998 Sb., v platném znění (novela 2016). (in Czech)

## Evolution of Dialogue for Students' Career Guidance in Secondary Vocational Education

Inita Soika Mg. paed.

Latvia University of Agriculture, Institute of Education and Home Economics, Latvia

[Inita.Soika@llu.lv](mailto:Inita.Soika@llu.lv)

**Abstract.** Dialogue has always been used to address the relevant issues and assist to survive in uncertain and unpredictable world, as it is now. Due to the own unique nature, dialogue helps explain the complex processes through the context in which we are live, challenge the reflection and express encountered thoughts. Experience of career guidance has shown that the meanings constructed through dialogue, develops an understanding of career planning and life designing. The use of dialogue in career guidance of students of secondary vocational schools helps to build and develops their professional identity. However, shows practice, not always the conversations among students and career professionals develop a dialogue. The scientific article is answered to the following questions: How to form and developing a dialogue? What are the stages of the conversations need to be overcome for getting to the dialogue? Is there a dialogue between the student and career counsellor in secondary vocational education? How to ensure that student is willing to look for an assistance of career counsellor? The aim of the study is to explore the development of dialogue and evaluate which developmental stages are prevailing in dialogue of student's career guidance in secondary vocational education. Objectives: 1) to describe developmental stages of dialogue; 2) to analyse the use of dialogue in students' career guidance at the secondary vocational education. The study summarizes and analyzes theoretical cognitions, as well as semi-structured interviews, which justified necessity of dialogue in student's career guidance of secondary vocational education.

**Keywords:** dialogue container, talking, debates, reflecting, generative dialogue, vocational education.

### Introduction

At the moment it is observed that significance of career guidance is increasing in vocational education of Latvia. However, it can be described as a set of campaign-package where activities of career guidance often do not give desired result - encourage the students to think and act in order to achieve their stated career goals. One solution is to use a varied dialogue, because in its essence it is a set of techniques of knowingly sequential cognition and exploration. The consequences of that is not sufficiently harnessed for dialogue in students' career guidance in secondary vocational education. The problem what repeats year by year is that high and constant proportion of students (~18 %) dropping out of school prematurely without a diploma (Izglītājamo skaits..., 2016). Part of the students has low learning motivation; they do not have understanding of deliberate further education and direction of own career choice (Par Karjeras..., 2015). Dialogue is a bilateral. Therefore, it should be viewed from the perspective of both students and career professionals, because it is the issue of ability to build, maintain and develop a dialogue between two parties. Researchers of dialogue (Isaacs, Senge, 1992; Isaacs, 1993; 1999) are convinced that dialogue includes a movement of meaning of the communication process with a series of changes and reactions, and it is also an important way how to achieve thinking of individual and group and also change of behaviour. Case study on this issue in Europe (Kuijpers, Schyns, 2006; Kuijpers, Meijers, 2011) and in Latvia (Soika, 2013; 2015) shows that there must be purposefully focused and directed conversation between a student and trusted persons - teachers, career counsellors, educators, who can help to find answers to the questions of young person about their life and career.

Currently situation about the vocational education in Latvia is similar with The Netherlands situation few years ago. The Netherlands scientists K. Mittendorff, B. den Brok and M. Beijaard (2010) had recognized that career conversations are an essential element of career guidance, because the students have difficulties to reflect on their own learning and to construct meaning of their careers. The study results showed that career conversations had more academic character. In addition, a number of secondary vocational schools did not have enough competencies how to build and maintain career conversations (Mittendorff, den Brok, 2010). According to the Regulations of the Cabinet of Ministers No. 484 (Kārība, kādā..., 2016), career guidance is being actualized and integrated into the secondary vocational education in which transition on work-based learning is being started. It means that student

will have to assume more responsibility to acquire the theory and practice at the school or enterprise to use these knowledges in accordance with their individual plan.

Such kind of training contributes to students' personal development and professional identity (Vondracek, Portfeli, 2006) or career identity (Winters, Meijers, 2012). It is achieved if students are provided with a context (different information, materials, educational environment) in which they are exploring own ambitions, strengths and weaknesses, as well as clarifies the plans for the future (Meijers, Kuijpers, 2013). Therefore, it is important to stimulate both the internal dialogue about students' personal significance and the external dialogue with the various support persons. To succeed a good dialog, a positive attitude and undivided attention among the participants of the dialogue are required; there should be mutual trust for finding the best solution; conversations should focus not as much to a problem as to its solution.

Dialogue is varied and it can be viewed, first of all, as a human relations form - as a *face to face* communication act or individual communication into groups, which includes a variety rules of behaviour and which is fundamentally linked to an individual's personal development (Bakhtin, 1984; Бунин, 1985; Hermans, 2001). Secondly, the dialogue is as a cultural form (Bauman, 2005), because it is influenced by the context. Thirdly, as comprehension and interpretation of the text where dialogue is viewed as a way of thinking and questioning (Senge, 2010; Isaacs, 1999). To a large extent the dialogue is a matter of relationships and communication patterns, which has a lasting maintained quality of communicative relationship. The individual attitude is important under which he or she engage in communication with others. Communication begins with ourselves, because, first of all, individual finds himself in the presence of others, where caused the conversations leading to the irrevocable change. Contemporary dialogue researchers P. Senge (2010), W. Isaacs (1999), R.C. Arnett and K. Cissna (1994) recognize let's to participate in the genuine dialogue, the parties are not necessary to consider the relationship among selves and others, because approval of each other is a key for dialogue relations – a process by which individuals are validated and recognized by others, because it promotes a greater understanding of themselves, each other and develops the capacity of the new behaviour.

The aim of the study is to explore the development of dialogue and evaluate which developmental stages are prevailing in dialogue of student's career guidance in secondary vocational education.

## Methodology

The research was done by studying scientific literature and guidelines, as well interviewing career counsellors of secondary vocational schools about the development of students' career dialogue. The data were collected during *face to face* interviews with vocational schools' career counsellors in November, 2016. The 6 respondents from 6 secondary vocational schools were involved in survey, representing regions of Zemgale, Riga and Kurzeme. The semi-structured individual interviews were used in this study, which gave a picture of dialogue in students' career guidance in secondary vocational education. The evaluated analytical data of the study shows that small number of students reaches the dialogue. The research results are important because they confirm: if a dialog develops between student and career counsellor, it is a safe space for mutual trust, which changes the student's thoughts and behaviour.

## Results and discussion

The dialogue of career guidance can take many forms, such as conversations and debates on both the internal and external dialogue and reflecting of personal experience. While these techniques are self-evident, they are not used effectively. As a reason for that is mentioned that the part of students and teachers are not fully aware of necessity of systematic and qualitative career guidance. All surveyed career counsellors note, that schools have developed career education and guidance programs, the school strives to provide this processes with the necessary resources (for example, rooms and methodology), but that does not contribute significantly to students' interest in their fulfilment of career expectations. As demonstrated results of the semi-structured interviews, still several years ago only a few secondary vocational education schools had the staff of career counsellor. Only after the recent alignment of Latvia legislation it is possible to put forward specific requirements of qualitative and systematic career guidance in education (Grozījumi Izglītības..., 2013; Iekšējie noteikumi, 2015). It led schools' teachers to obtain relevant qualifications in the field of career counselling. Therefore, experience of the majority

of secondary vocational schools' career counsellors is still limited, which also points to the fact that their professional capacity still should be developed. As shown by the interview data, now a career counsellors of secondary vocational schools are more involved in the planning, implementation and management of career guidance than in practical advising and counselling. Usually their organized activities have informative character; those are designed for the large groups; for individual consultations remain little time. The responsiveness of the students to attend these consultations is very low - on average 14 - 16 throughout the school year. Moreover, they attend those students who are active in both learning and extracurricular activities.

The surveyed career counsellors recognized that a large proportion of first-year students are not acquired skills or afraid to express their views not only publicly, but also *face to face* with a career counsellor. It occurs only in the third and fourth year when students, supported by their teachers has overcome learning difficulties at school and work environment and has understood significance of learning. It will take time for student to talk confidently and freely about individual career issues.

What is needed for participation in dialogue? Scientists W. Isaacs (1999), J. Habermas (1984) and O. C. Scharmer (2016) believe that aspiration on the *whole* provides a dialogue. It means that what was said in the speech text can be understood in relation to the body language and in the wider context. The *whole* constitute space or *container for dialogue*, in which occurs transformation of persons' thoughts, words and behaviours. W. Isaacs (1999) writes that *container of dialogue* is psychological security space that keeps potential of dialogue. Development of conversations depends from the quality and nature of the *container*. The *container* comprises various qualities of *voltage, energy, ideas and knowledge* (Isaacs, 1999, 255). This space of dialogue develops through major inflection points or crises, because it is able to maintain individual's experience in increasingly rich and more complexity ways, making it lawful through many approaches and styles (Isaacs, 1999, 256). The *container* can be in various forms, such as the human body; mutual relations; a specific space where some things can be said and done, which in turn cannot happen anywhere else. In our case, it may be group of students in diverse learning environment.

It's always been a challenge – to open up, to engage in dialogue, to change own mind and behaviour; it is a time consuming and complicated process which must go through several fields of conversations. Order to do so, it has to be develop a variety of essential skills such as attentive listening (to be here and now). It means to be able to individual listening, respecting others, suspending own judgments and do not voicing them in dialogue (Isaacs, 1999, 242). W. Isaacs (1999) believes that there are two forms of dialogue: *reflexive dialogue* is to think about what person has done but-not noticing; and *generative dialogue* in which person creates completely new ideas and opportunities. Practice shows that not everyone is ready and able to engage in dialogue and not everyone knows the benefits of dialogue. If it were so, then there would not be a lot of unresolved issues and problems. C. O. Scharmer (2016, 115-215) writes that the first of all individual has to start with opening of own mind and heart for conversation with themselves and others, through which reveals own good will to engage in dialogue.

Author of this article urges to look on functioning fields of conversations through three forms of expression: 1) students' conversation with themselves; 2) student' conversation *face to face* with career counsellor; 3) conversation between students' group and career counsellor. Hereinafter the four different but logical fields of conversation will be described in detail that leads to the *creative dialogue* (Figure 1).

**The first field:** *politeness in the container*. This field initiated the conversation process. W. Isaacs (1999, 157-164) describe it as unstable and insecure; there the shared monologues take place. When the career counsellor for the first time meet with group of students or *face to face* with a student, then either they know each other very well or not. Basically, they do not have a safe *container* - space that would allow feeling mutually confidently and trustworthy. The individuals arrive, taking along inherited set of rules on how to interact. For example, if students have come to lecture, then they know that they have to sit down and listen, they have well-validated and acquired forms of interaction, self-evident assumptions about the situation and the rules how to think and act. But they enter in conversation' process with quite different expectations and they do not reveal what they think and feel. P. Senge (2010) considers that in this field of conversation observant scanning of participants is taking place, which allows to get information on the opinions of the other members and to understand conversational techniques. C. O. Scharmer (2016, 115-117) found that it is a place where dominates norms and regulations governing everything that is more important than what is desired by any of these individuals.

They do not intend to discuss with them or find out what to do with them. Therefore, the main feature of the first field is the lack of reflection. This field is characterized by the combination of words *more to follow*, which means that there some individuals are moving, some of which follow, but no one is in opposition. Usually, the emotional component of the first field is *fear to express*. C. O. Scharmer (2016, 115) has called the first field as *Downloading*, autistic system where individuals speak what people around wants to hear; they used correct routine and empty phrases. Attention is structured as *I-In-Me* position (Scharmer, 2016, 117) in which the person senses what he/she knows (Senge, Scharmer, 2008, 35). Energy what is invested in conversation is low, so individuals adapts to each other, because a lot of that is based on customary patterns of behaviour and thoughts (Scharmer, 2016, 119).

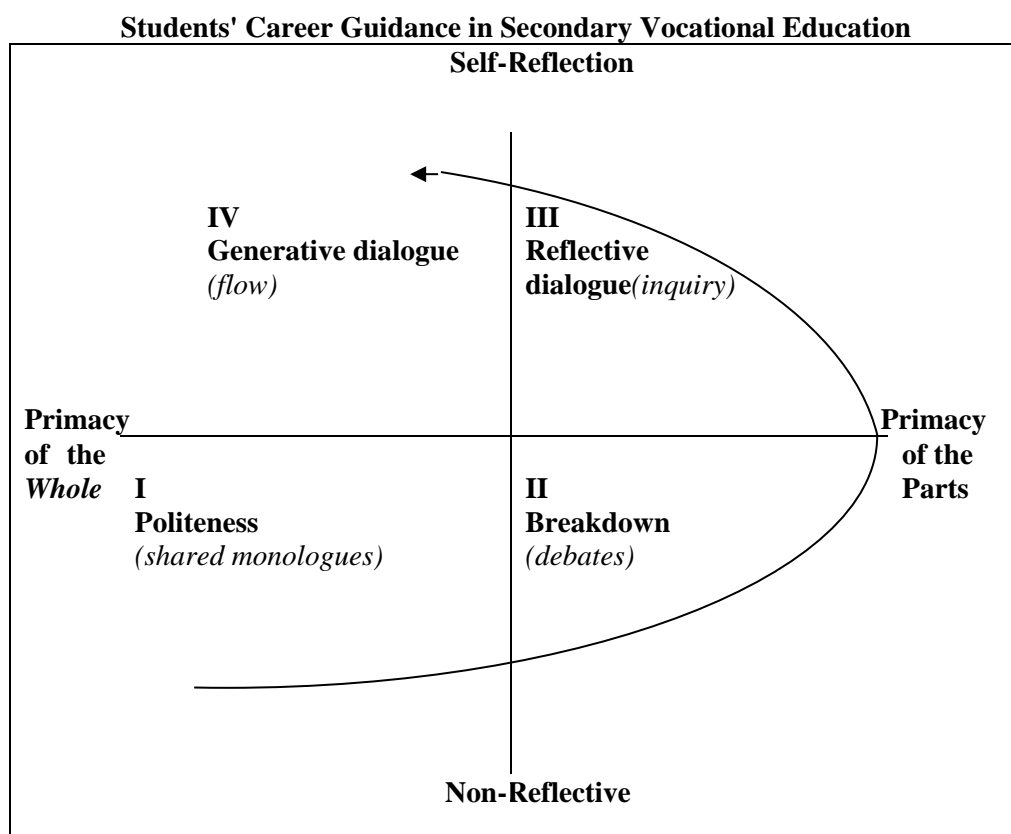


Figure 1. Development of the conversation fields of dialogue in students' career guidance in-secondary vocational education (adapted from Isaacs, 1999).

In order to promote the desertion of the *download field*, negotiator - in this case - a career counsellor helps the student to begin to pay attention on new circumstances. C. O. Scharmer (2016, 124) notes the four obstacles that hamper the transition to the next field of conversation and hinder to see the reality: 1) do not recognize what is obvious; 2) does not say what they think; 3) does not do what they say and 4) does not to see what to do.

**The second field:** *to engage in debate*. W. Isaacs (1999, 265-271) is calling it *instability* or *breakdown* in field of conversation. That is because the individuals have the instability of the idea and enough of the insufficiently full *container*, which would allow to see their functions. The individuals, who previously had been adopted under the authority of social norms, begin to say what they think. It means that they begin to adapt in a given environment. The individuals hold *I-In-It* position (Scharmer, 2016, 136) and open own senses without judgment (Senge, Scharmer, 2008, 29). The participants of conversations have desire to take own position. P. Senge (2010, 57-58) recognizes that everyone has own point of view, but anyone view does not solve the problem in this field. The typical feature of the second field of conversation is: if someone says something, others must be answered. When individuals begin to express own standpoint, the *debate* is enhanced with a variety of views that challenge the common perception. When different opinions are assessed approvingly, then *cooperation begins to form conversational container, which can provide the intensity and pressure* (Isaacs, 1999, 256). There is



a little or no real reflection of what is happening. Each member of dialogue defends their positions, but they do not stop to inquire of what prompted them to think in the way they do. Data of semi-structured interviews revealed that there are cases in career guidance when the crisis of the second field was not overcome and students leave the conversation process or return to the first field. W. Isaacs (1999), P. Senge (2010) and C. O. Scharmer (2016, 125-139) emphasizes that the *debates* consist of a *container* for the new agreement. C. O. Scharmer (2016, 274) notes that for facilitating the change-away from *own positions*, individuals need to feel safe to change their minds. D. Bohm (2004) suggests to help them to stop their views. If it does not occur, then they return back to the first conversation field, because it is the only alternative what they know. Unfortunately, these situations are also observed in secondary vocational educational environment where students' career management occurs of its own accord, without support of school's career counsellor. Usually individuals experiencing this field when they encounter the problems. They begin to interpret what is going on in the light of personal discomfort; they are starting in less to stick to their point of view. It is driven individuals to begin to discover what they really think and feel. This resulting-break is a necessary step in the revelation process of how hard it is to resolve the persistent problems. During the *debates* students in collaboration with career counsellor becomes aware that it is possible to come to the reflection about the processes which encourage seeking solutions together and stopping the difficulties and going to the next conversation field. The essence of stopping of the crisis for an individual is to begin to understand that so far he/she has not had own point of view. The crisis ends only when individuals are willing to listen to each other. The prevailing emotion in this field tends to be anger, because individuals discover that they do not only to create the dialogue, but they cannot even to get any points of contact during a conversation. Going through the difficulties are motivating individuals to make changes. It means that the *debates* provide a change of meaning of anger and frustration (Isaacs, 1999, 269). Usually the second field is an incoherent *container*; it contains internal contradictions and inconsistencies, and it must pass with different types of pressures. During the dialogue, the *container* provides individuals with energy, opportunities and security. And the individual may ask himself: Is this place safe? Does it give opportunities and energy? If the answer is *no*, then the result of what he/she hoped to get, will be limited (Isaacs, 1999, 244).

The student can choose to lose their power over own position and to accept entry into a deeper field of conversation - reflection area, which previously he did not like; and he has done it together with a career counsellor.

**The third field: *reflective dialogue*.** This field is recognizable by the different types of conversations and changing of energy (Isaacs, 1999, 272-276). The individuals hold the position of *I-in-You* (Scharmer, 2016, 142-148) and begin to sense the *whole* (Senge, Scharmer, 2008, 42). It is the movement from the third-person's stories about other people and other places to the first-person's exploration about how things look from the place where *I am* located. Here people are starting to think about what they are doing and what are affecting them; here prevailing *spirit of curiosity*. It means that individuals begin to notice and are ready to explore their assumptions. C. O. Scharmer (2016, 255-262) writes that in this field, individuals begin to be surprised - not only from the reactions what they get from others about what is said, but the fact that they are forced to operate and think slowly. It means that individuals see themselves as a part of the *whole* during conversation. C. O. Scharmer (2016) describes this position as a *rule reflecting*, which determines how they act. They are willing to explore the character of the structure that drives their behavior and actions, and they do it more openly. It means that individuals develop thinking from different perspectives. They do not feel forced to be united in any opinion. Ideas tend to flow freely, usually grounded on what they are now talking about themselves. Individuals do not feel an imperative requirement of others respond or to be agree with their point of view. The participants of conversation are trying to respect everyone's opinion. This space of conversation is marked by the increasing ability to speak across different views, until they begin to speak and to listen in a way that allows to connect with individuals who have very different viewpoints. Individuals involved in a common flow of thoughts, got to the point when are being construct new changes. Till now, the individuals are usually focused on their viewpoints and own personal contribution to the inquiry. Influencing each other's judgments, understanding of the individuals becomes a more complete and clearer. This crisis of fragmentation allows go out of isolated identity and gradually moving away from own judgments (Scharmer, 2016, 246).

The third field of conversation can be compared with an intentional, internal dialogue (Brockbank, McGill, 2006, 45-46), in which internally are discussed and explored concerns issues what are caused by the experiences that create and clarifies meaning for them, as a result is changed the conceptual point of view. A. Brockbank and I. McGill (2006, 53) characterize reflexive dialogue as a deliberate process, where is considered social context and experience in which individuals are active, fully present, collaborate with others, adopted challenges and which results is related to the student's own transformation and improvement. Reflexive dialogue with themselves and dialogue with other ensures transformative learning at all levels of learning: from the reflective learning (maintenance learning), what allow to improve thinking, then through reflexive learning (developing learning), what allow to transform thinking and experience, in the broader of learning context, to the third level of learning - reflexive learning about learning. Author agree with A. Brockbank and I. McGill (2006, 54) that the internal dialogue usually happens when the person's mind is overloaded with all sorts of questions and thoughts. When occurs internal dialogues, an individual focus on the issue of qualitative solving of own problem. Consideration of the problem often cause a significant understanding and comprehension. When students engage in generative dialogue, they strive for the possible foreseeable future. *Reflexive dialogue* would also perform changes between career counsellor and students: they become more reliable, what also contributes to the development of own professional identity and meaningful learning.

**Fourth field:** *generative dialogue* what develops something new, more qualitatively and authentic, based on the relationships of meaning flowing (Isaacs, 1999, 279-285). If there are three conditions for flow of dialogue: safety, energy and opportunity, then it is clear that there are at least five generative activities: 1) devotion to listening process; 2) respect of each other; 3) any suspension of judgment; 4) to come up with an authentic voice; 5) takes the collective search for truth. The fourth field of conversation is fully justified by W. Isaac recognition that *dialogue....is a conversation with a centre, not sides. It is a way of taking the energy of our differences and channelling it toward something that has never been created before* (Isaacs, 1999, 19).

One of the most powerful tools in deep and generative dialogue is *active listening*, which includes a series of cross-skills: open and closed questioning, rewording and recognition of the sense, non-verbal encouragement and aggregation. It is a commitment to listen the unique experience of another person's, to hear and listen not only spoken words, but to feel and respond on the occurred feelings and unmanifested meanings that are located behind the words. C. O. Scharmer (2016, 161-185) describes this conversation field as a *generative flow*. Individuals hold *I-In-Now* position. It is sensing of possible future (Senge, Scharmer, 2008). The qualitative criteria of the fourth field are *stillness, collective creativity and flow*. There exists a creative system in which changes of the identity occur towards to self-authenticity. Author can agree to dialogue researchers that *container* of the fourth field is rare. C. O. Scharmer (2016, 161-185) recognizes that individuals are holistically looking at the things in this field. It is a space where individuals create new rules for interaction; where they personally fit into and fully aware self-impersonal participation in the collective flow. Here more often develops synchronicity of dialogue. Silence is necessary to gain access to themselves and start to cause individual changes. D. Bohm (2004) writes that this space creates a level of harmonization and connection among the people that they are no longer situated nor the opposition, nor the interaction, rather they participate in the common flow of meaning and they are able to transform continuously. At that stage the mood and climate of group switches from the objectives and responsibilities of dialogue participants to the common goals and responsibilities of the team (Senge, 2010, 139). It is no longer an individual importance of the conversations; the group is a reason to talk. There is the freedom and the time to investigate ideas that would develop the team's goals further. Decision making comes later, because first of all here people are getting rid of the prejudices relating to the problems and try to discuss freely about the alternatives.

Progression through all fields of conversations is a progression from the self-defence to the suspension, with the key points of decision that determine the nature of the outcome of conversation. Learning occurs when the negotiator - in this case, a career counsellor helps students to understand their progression through informed decision-making and how they act and think of the outcome.

## Conclusions

- Generally, individuals are aware and they have the experience how to operate in the first (*politeness in the container*) and second fields (*to engage in debate*) of conversation, but they have only a limited experience how to communicate in the third and fourth fields of conversation. Getting in these fields of conversation helps students to overcome the crisis: it includes a diverse learning, which evoke changes in both-the students' thinking and action.
- The dialogue develops step by step; for this to occur, the involved persons – students and career counsellor - must be interested and minded on the topic as well as ready to cooperate. Dialogue requires mutual trust, but to obtain it, time and systematic support of adults including the school' career counsellor is required, who tries to encourage student's career thinking and behaviour with appropriate methods and techniques.
- All conversation fields are found in students' career guidance of secondary vocational education. However, the first and second fields of conversation are more strongly dominated. If students and career counsellor communicate in the third field (*reflexive dialogue*), then students are thoroughly encouraged to reflect on their career plans and to take responsibility themselves for their own career development.

## Bibliography

1. Anderson R., Cissna K., Arnett R.C. (Eds.). (1994). *The Reach of Dialogue: Confirmation, Voice, and Community*. New York: Hampton Press Communication.
2. Bakhtin M. (1984). Problems of Dostoevsky's Poetics. *Theory and History of Literature*, Vol. 8. Minneapolis, London: University of Minnesota Press. [online] [11.12.2016]. Available at [https://monoskop.org/images/1/1d/Bakhtin\\_Mikhail\\_Problems\\_of\\_Dostoevskys\\_Poetics\\_1984.pdf](https://monoskop.org/images/1/1d/Bakhtin_Mikhail_Problems_of_Dostoevskys_Poetics_1984.pdf)
3. Bauman Z. (2005). *Liquid Life*. Cambridge: Polity Press.
4. Bohm D. (2004). *On Dialogue* (2<sup>nd</sup> ed.). London, New York: Routledge Classics.
5. Brockbank A., McGill I. (2006). *Facilitating Reflective Learning through Mentoring & Coaching*. London: Kogan Page
6. Grozījumi Izglītības likumā (Amendments to the Education Law). (2013). LR Saeima. *Latvijas Vēstnesis*, Nr. 142 (4948). [online] [11.12.2016]. Available at <https://likumi.lv/ta/id/275053-grozijumi-izglitibas-likuma> (in Latvian)
7. Habermas J. (1984). *The Theory of Communicative Action*. Vol. 1. *Reason and the Rationalization of Society*. Boston: Beacon Press. [online] [11.12.2016]. Available at [http://www.dphu.org/uploads/attachements/books/books\\_2795\\_0.pdf](http://www.dphu.org/uploads/attachements/books/books_2795_0.pdf)
8. Hermans H.J.M. (2001). The Construction of a Personal Position Repertoire: Method and Practice. *Culture & Psychology*, Vol. 7(3), pp. 323 – 365.
9. *Iekšējie noteikumi*. Izglītības iestāžu, eksaminācijas centru darbības un izglītības programmu īstenošanas kvalitātes vērtēšanas metodika (*The Internal Regulations. Quality Evaluation Methodology of Educational Establishments, Operation of Examination Centres and Implementation of Educational Programs*). (2015). IKVD Nr. 14. Grozījumi Izglītības kvalitātes valsts dienesta 2011. gada 24. maija iekšējos noteikumos Nr. 5. [online] [11.12.2016]. Available at [http://www.ikvd.gov.lv/assets/files/2013/2015/nor\\_akti/18.05.2015.Ieksejie\\_noteikumi\\_Nr.14.pdf](http://www.ikvd.gov.lv/assets/files/2013/2015/nor_akti/18.05.2015.Ieksejie_noteikumi_Nr.14.pdf) (in Latvian).
10. Isaacs W. (1993). Taking Flight: Dialogue, Collective Thinking and Organizational Learning. *Organizational Dynamics*. Vol. 22 (2), pp. 24 – 39.
11. Isaacs W. (1999). *Dialogue and the Art of Thinking Together: A Pioneering Approach to Communicating in Business and in Life*. New York: Doubleday.
12. *Izglītojamo skaits izglītības iestādēs, kuras īsteno profesionālās izglītības programmas 2015./2016.m.g.* (*The Number of Students in Educational Institutions Implementing Vocational Education Programs in 2015/2016. Academic Year*). (2016). Rīga: IZM. [online] [17.11.2016]. Available at <http://www.izm.gov.lv/lv/publikacijas-un-statistika/statistika-par-izglitibu/statistika-par-profesionalo-izglitibu/2015-2016-m-g> (in Latvian).
13. *Kārtība, kādā organizē un īsteno darba vidē balstītas mācības* (*Procedures by which The Work-Environment Based Learning is Organized and Realized*). (2016). MK Noteikumi Nr. 484 no

- 15.06.2016. Rīga: LR MK. [online] [06.11.2016]. Available at <https://www.vestnesis.lv/op/2016/140.11> (in Latvian).
14. Kuijpers M., Meijers F., Gundy C. (2011). The Relationship between Learning Environment and Career Competencies of Students in Vocational Education. *Journal for Vocational Behavior*, Vol. 78 (1), pp. 21 – 30.
  15. Kuijpers M., Schyns B., Scheerens J. (2006). Career Competencies for Career Success. *Career Development Quarterly*, Vol. 55(2), pp. 168 – 178.
  16. Meijers F. Kuijpers M., Gundy C. (2013). The Relationship between Career Competencies, Career Identity, Motivation and Quality of Choice. *International Journal for Educational and Vocational Guidance*, Vol. 13 (1), pp. 47 – 66.
  17. Mittendorff K., den Brok P., Beijaard B. (2010). Career Conversations in Vocational Schools. *British Journal of Guidance & Counselling*, Vol. 38 (2), pp. 143 – 165. [online] [11.12.2016]. Available at <http://www.cdanz.org.nz/files/Symposium%202013/Career%20conversations%20in%20vocational%20schools.pdf>
  18. *Par Karjeras izglītības īstenošanas plānu valsts un pašvaldību vispārējās un profesionālās izglītības iestādēs 2015.-2020. gadam (About the Career Education Implementation Plan for State and Municipal General and Vocational Education Institutions for 2015–2020)* (2015). MK Rīkojums Nr. 821 no 30.12.2015. Rīga: LR MK [online] [26.09.2016]. Available at <http://likumi.lv/ta/id/278999-par-karjeras-izglitibas-istenosanas-planu-valsts-un-pasvaldibu-visparejas-un-profesionalas-izglitibas-iestades-2015-2020> (in Latvian).
  19. Scharmer C. O. (2016). *Theory U: Leading from the Future as It Emerges*. (2<sup>nd</sup> ed.). Oakland, California: Berrett-Koehler Publishers.
  20. Senge P. (2010). *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Crown Publishing Group.
  21. Senge P. M., Scharmer C. O., Jaworski J., Flowers B. S. (2008). *Presence: Human Purpose and the Field of the Future*. New York: Crown Business.
  22. Soika I. (2013). Constructivist Approach to Dialogical Career Counselling in Vocational Secondary Schools. In Proceedings of the International Scientific Conference *Rural Environment. Education. Personality (REEP)*, Vol. 6. Jelgava: Latvia University of Agriculture, pp. 146 – 154. [online] [11.12.2016]. Available at <http://llufb.llu.lv/conference/REEP/2013/Latvia-Univ-Agricult-REEP-2013-ISSN-2255-808X.pdf>
  23. Soika I. (2015). Entity of Dialogue in Career Guidance of Secondary Vocational Schools. In Proceedings of the International Scientific Conference *Rural Environment. Education. Personality (REEP)*, Vol. 8. Jelgava: Latvia University of Agriculture, pp. 338 – 346. [online] [11.12.2016]. Available at <http://llufb.llu.lv/conference/REEP/2015/Latvia-Univ-Agricult-REEP-2015proceedings.pdf>
  24. Vondracek F. W., Portfeli E. J. (2006). The World of Work and Careers. In Adams G. R., Berzonsky M.D. (Eds.). *Blackwell Handbook of Adolescence*. Oxford: Blackwell publishing Ltd, pp. 109 – 128.
  25. Winters A., Meijers F., Kuijpers M., Baert H. (2012). Can Training Teachers Stimulate Career Learning Conversations? Analysis of Vocational Training Conversations in Dutch Secondary Vocational Education. *Journal of Vocational Education and Training*, Vol. 64(3), pp. 333 – 350.
  26. Бун Г. (1985). *Диалогика и творчество (Dialogue and Creativity)*. Riga: Avots (in Russian).