Rural Environment. Education. Personality. (REEP)

Proceedings of the 14th International Scientific Conference

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Chairman of the conference committees: associate professor, Dr. paed. **Vija Dislere**

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Content

COMPETENCE DEVELOPMENT IN ADULT
AND HIGHER EDUCATION

EDUCATION FOR SUSTAINABLE DEVELOPMENT

DESIGN AND CRAFTS

DEVELOPMENT OF PROFESSIONAL EDUCATION AND CAREER

Foreword

The Institute of Education and Home Economics of the Faculty of Engineering, Latvia University of Life Sciences and Technologies organizes the annual international scientific conference **Rural Environment. Education. Personality (REEP-2021).** The authors of the articles are from 8 countries – Czech Republic, Kazakhstan, Latvia, Lithuania, Poland, Republic of Belarus, Russia, and Slovenia. Totally 34 educational establishments are represented in the proceedings.

Aim of the Conference: to find out solutions, exchange ideas or highlight topical problems on the 21st century education tendencies in university and adult education, competence, education for sustainable development, design and crafts, career development and vocational education. Thematic groups of the articles:

- problems and solutions for nowadays school, university and adult education,
- competence development in adult and higher education,
- education for sustainable development,
- design and crafts,
- development of professional education and career.

The focus of the conference is on paradigm change in higher education, strategic development of lifelong learning, an increase of online training during a pandemic, new learning strategies, students' motivation and self-reflection.

The first section **Problems and solutions for nowadays schools, university and adult education** includes researches in the fields of education, psychology, language learning and use of information technologies in education.

Articles covering conducted researches in **the field of education** talk about the increasing role of branding in the higher education sector, which is closely associated with the enhanced marketing orientation of a modern university. You can read about that in the article "Exploring Brand Personality in Higher Education". Lithuanian colleagues write about the strategic development of lifelong learning in the context of the Bologna Process in the article "The Pros and Cons of Online Learning Environment from the Students' Perspective". According to the researchers, technologization facilitates teaching/learning and makes it more attractive, accessible, individual and efficient. About commercialization of educational services including further educational programs read the article "Further Education as an Integrative Pivot of Lifelong Learning".

Two articles discuss the philosophical aspects of pedagogy. For the topicality of the existentialist approach in modern humanistic pedagogy, in which the emphasis is on the personal significance of the learning process, read the article "Learning Self-Reliance and Responsibility from the Point of View of Existentialism". For the seven key insights identified on how Stoic philosophy can make a valuable contribution to learning through context, role models, and Stoicism itself, read the article "Applicability of Stoic Philosophy to Character Education".

Learning issues in the context of the pandemic situation in **university education** are discussed in the paper "Learning Challenges During Pandemic Situation: Lithuanian University Case". The article reflects on the difficulties of distance learning and various socio-psychological problems. The article "Peculiarities of the First-Year University Students' Motivation for Learning in Samples of Riga and Smolensk" presents the results of an international study of freshman motivation, identifying the dominant motives and assessing the impact of the psychological atmosphere of a students' group on their motivation.

Science, technology, engineering, and mathematics (STEM) education nowadays is considered a priority in **school education**. The article "Trends in STEM Teaching and Learning within the Context of National Education Reform" introduces with examples of real-life and project work that increases students' interest in science subjects so that they can creatively solve problems by integrating the content of all STEM subjects. Two articles reflect on the didactic aspects of **preschool education**: "Preschool Teachers' Understanding about Children's Self-Directed Learning" and "The Independence of Primary School Students in Learning Music at a Distance during Covid-19 Pandemic".

In two articles, scientists study the **psychological aspects**. About consumer psychology read the article "Measuring the Affective and Cognitive Bases of Implicit and Explicit Attitudes Towards Domestic and Foreign Food Brands". The attitude of offenders towards criminal behaviour and the scale of their measurement are analysed in the article "Preliminary Adaptation of Criminal Attitudes to Violence Scale in Latvian and Russian".

Several articles highlighted the importance of **language learning** at both university and school level. On university level, research article "The Ideal Language Student – Myth or Reality" reveals that the ideal student as perceived by the teachers is the one who possesses good critical thinking skills, is motivated and disciplined with a serious attitude to study.

In turn, the theoretical achievements of linguodidactics in professional education provide for the necessity to develop emotional competence, emotional intelligence, empathy, sympathy and sensitivity to the surrounding world. About that read the article "The Language of Ecology within the Frame of Public Relations Discourse".

The study described in the article "The Influence of Transformations in the Modern Labour Market on Foreign Language Courses at Universities" resulted in developing a new standard of teaching foreign languages, integrating communicative competence, critical and creative thinking and learning to learn as necessary components.

Read about the use of video resources and video application technologies in teaching foreign languages to university students in articles "Video Sketches as a Means of Introducing Blended Learning Approach in Teaching Foreign Languages at Technical Universities" and "Main Directions of Pedagogical Research into Video Resources and Technologies for Foreign Language Learning".

Students learn foreign languages with certain motives. Many students seek to improve their careers, others seek to gain confidence, and others plan to live abroad. Read about the specifics of language teaching at school in articles: "The Relationship between English Language Skills and Learning Needs of Secondary School Students", "The research of Latvian Language Competence of Secondary Education Institution Graduates for Career Development" and "Learning of Latvian Language in Pre-Schools in Linguistically Heterogeneous Situations".

Articles covering conducted researches in the field of **using information technology in education and teaching mathematics** are about digital competence, e-learning and transversal skills. About various important tools in teaching mathematics and using active learning methods in digital environment to modernize the learning environment in **university education** are described in the following articles: "Linear Functional Graphs – a Data Arrangement and Visualization Tool for Linear Algebra", "Active Learning Methods for Sustainable Education Development", "Development of E-Learning in a Modern Technical University" and "Evaluation of IT Companies as Learning Organizations from the Programmers' Perspective".

Considering the new digitization trends in the hospitality industry due to the new global epidemiological situation, only companies with employees with high-level digital competence will be able to survive, adapt and develop. Read about it in the article "Digital Competence of Hospitality Students within the Context of Information and Communication Technology Environment".

Analyses of transversal skills and their development in **school education** are expanded in articles: "Transversal Skills in Mathematics Curriculums of Latvian Secondary Education: 1940-2020", "Citizenship Education in the Mathematics Curriculum after the Reform of the Education Content in Latvia" and "*Conflict of Goals* as a Barrier for Effective Use of Visual Models in Primary Math Education".

The articles of the second thematic group **Competence Development in Adult and Higher Education** highlight the problems in enhancing the quality of mediation, team performance, teachers' digital competence, translation and business-related competences acquiring a foreign language, training of social pedagogues, paradigm change in higher education and evaluation and self-reflection of university teachers.

Three articles are dedicated to adult education: the development of mediation process and the roles of the mediator based on the constructivist approach considering dialogical relations particularly are investigated; the process of the development of teachers' digital competence is revealed identifying their needs and highlighting the proposals for the implementers of professional competence development courses; a transformational leadership model as a means for creating productive team performance is substantiated in the study.

Five articles related to investigations in higher education reveal: the qualitative research of transferable competencies important for the higher school graduate's successfulness in the labour market, as well as the evaluation of university teachers´ competences and their self-reflection in the teaching process; the development and approbation of business and personal management competences in a professional English course and the role of corpus in translation and translation studies of economic terms, as well as a comparative analysis of educational programs for training social pedagogues on the example of universities in Kazakhstan, Lithuania and Germany.

Articles in the third section on **education for sustainable development** describe the topics: on education for a sustainable lifestyle in relation to organic food; didactic approaches to environmental education; teaching strategies for sustainable behaviour in using textiles in everyday life; collaboration between pre-school and parents; interactive audio-visual technologies for children with autism spectrum disorder; alternative tobacco and nicotine product use in young adulthood.

The study of R. Felcis and J. Žaltkovskis examined the attitude of the residents of the Gauja National Park (GNP) region in Latvia towards conventional and organic agriculture, because GNP is a natural value of Latvia, where it is important to preserve the existing biological value. Principal component analysis helped the researchers to identify two important dimensions of ecological attitudes about organic and conventionally grown food. These dimensions are ecological habits of purchase and the ecological habits of growing. Researchers K. Rejman, M. Jeżewska-Zychowicz and G. Ganczewski examined the attachment to meat consumption in a group of Polish consumers and whether it depends on an understanding of the concept of sustainable food consumption (SFC). Despite the evidence-based benefits of a sustainable diet for health and the environment, people are reluctant to limit meat consumption in developed countries. The results of the study point to the need for effective education programs that demonstrate the full benefits of a sustainable diet to provide consumers with reliable knowledge and support them in making healthier and more sustainable choices in the food market.

Scientist K. Nemjec with colleagues from the Institute of Education and Communication at the Czech University of Life Sciences Prague introduced with new activating didactic approaches (such as project-based learning, field learning with the support of worksheets, and the use of nature educational trails) to the cross-curricular theme "Man and the Environment", offering students the opportunity to progress, perceive and recognize stimuli more accurately and comprehensively, effectively solve the problems, communicate and act objectively and successfully, adopting a responsible lifestyle that is consistent with sustainable development.

F. Lovšin Kozina writes about the negative impact of the textile industry on the environment. The use of chemicals and toxic substances in the industry poses a threat to human health. Growing amounts of textile waste are also due to the fast fashion phenomenon which is often labelled as "disposable fashion". On the result the scientist suggests that more different teaching strategies should be used in the education process to promote and educate on the importance of textile topics in line to follow sustainable behaviour in everyday life. A good starting point could be the combination of practical work with modern information and communication technology.

Scientists L. Paula and L. Valaine-Rohnana found out what is the collaboration between pre-school and parents in relation to the acquisition of pre-school curriculum. The research analysis revealed that pre-school teachers and parents have different understandings of the child's need for parental support so that parents can get involved and promote the acquisition of compulsory pre-school curriculum.

The article of S. Zalyte-Linkuviene and V. Zalys presented an interactive tool for the education of children with autism spectrum disorder using audio, video and computer technologies and assessed its potential impact. The combination of audio-visual information (audio, video and animation) in video projection is a great opportunity for people with ASD to learn to understand the emotional expression of other people, to develop phonetic, hearing and enrich vocabulary. The interactivity of the projections provides an opportunity to develop the coordination of movements

According to the A. Zobena study, non-combustible alternative tobacco products such as tobacco-free nicotine pouches, heated tobacco, and electronic cigarettes (e-cigarettes) marketed as less harmful alternatives to cigarettes are becoming increasingly popular among adolescents and young adults. By replacing cigarette smoking with the use of tobacco-free nicotine pouches, heated tobacco, or e-cigarettes, one form of nicotine use is being replaced by another. According to the study, young people have no understanding of nicotine addiction and the health risks of using alternative tobacco products, what is not sustainable for health. Today's adolescents and young adults often see consumption of tobacco and nicotine products as a mean to construct and project their unique identity.

Articles in the fourth **section on design and craft** are related to the in-depth study of the art of works of Van Gogh, Velázquez and Repin by relating art to the biography of these authors. The methodology of V. Makarevičs' and Dz. Iliško' research is a figuratively symbolic method used with the purpose to compare the plots of the art and to relate them to the life experience of their creators. The results of this study might be of interest to those who are interested in arts and psychology.

Defining craft entrepreneurship has been a challenge for many scholars and researchers in different countries. Not only because of the multidimensional nature of entrepreneurship but also because of the differences in national regulations setting boundaries for each sector of the economy. Thus, in some countries, craft is the part of the Creative Industries, but in others it is considered as an independent sector of the economy. A. Smagina and I. Luviga introduce the understanding of what crafts are and how craft products can be differentiated and defined, and they conceptualize the craft entrepreneurship.

Articles in the fifth section on **development of professional education and career** from 11 organizations in 5 countries (Belarus, Czech Republic, Kazakhstan, Latvia, and Russia) were sent to the conference this year. There were several directions in the topic of the articles.

One of the cornerstones of an economy is a well-developed labour market with strong learning organizations and healthy workers, therefore, career guidance in organizations is invaluable. Researchers from Al-Farabi Kazakh National University examined the development of corporate culture based on improving the motivation system of the bank's staff. The role of motivation and corporate culture as the basis for innovative development and improving the productivity of an organization was studied. Based on the results obtained, a model of practical implementation was formulated, and a sociological experiment was conducted, statistical data on labour productivity were obtained and methodological recommendations were made for using the model proposed in the article. Authors of another article conclude that gamification has been a topical item in education, marketing, human resources management, business, and organisational consulting in the past decade, their study aims to research gamification in organisational consulting, analyse the differences in the opinions regarding the use and availability of gamification in the professional activities of coaches, supervisors, and business trainers. The authors believe that it is important to proceed with the research in organisations to find out the experience of the organisations in gamification and to develop gamification training programmes for the organisations. Other researchers have concluded that somatic health level is an important indicator in a military personnel group, so-somatic health level of military personnel is a basement for fulfilling military tactical tasks and developing future military careers. The changes of somatic health level in the study group have shown the impact of military training. Researchers also found statistically significant correlations between somatic health levels and anthropometric parameters as well as physiological parameters. In the joint article developed by Russian and Belarusian researchers, the results of experimental work on consulting support of professional practice of a teacher. The authors conclude that consulting on the development of local innovations should be carried out continuously to support the teacher's strategically significant needs, and not just their fragmentary situational requests.

Two articles are devoted to the applying of a metaphorical method in career counselling. One presents the research results on the role of choosing the metaphorical method for career counselling. The researcher found - metaphors stimulate the imagination of young individuals and allow them to creatively approach career investigation by using their potential for a complex understanding of career-related phenomena and thinking about their career development. Career counsellors, career teachers and human resource specialists could use the findings in their career counselling practice. The author of the second article examines the usage of metaphoric associative cards as a tool for career counselling with long-term unemployed – individuals that are seen by society as less educated, less capable and depended on special assistance in job searching. The results and process of the sessions confirm lack of soft skills and emotional intelligence among long-term unemployed.

Initial career guidance is provided in education institutions, so several studies have been conducted in schools. The counsellors are key professionals assisting individuals in their life transitions, therefore, the self-assessment of career counsellor competencies in the field of career guidance depending on the place of residence were analysed. Authors conclude that excellent and good career counsellor competence is equally good everywhere in Latvia. Researchers from Czech Republic in turn conclude that although career guidance is officially perceived as a priority of the education system, guidance support is not provided equally at all types of schools and on all levels of the education system. The authors focused on piloting a new counselling and training program at secondary vocational schools – a new career guidance program was proposed and tested, proposals for further improvement and implementation of career guidance and education were submitted. Students' research skills form the base for career development, so acquisition of students' research skills is one of the main goals in education. The results of the research provided in Latvia showed that the students and teachers appreciate the benefits of acquiring research skills as well as acknowledge successful cooperation between teachers and students as a crucial condition in the development of students' scientific skills.

Authors of the articles – professors, lecturers, teachers, master and doctoral students have made a significant scientific contribution to the preparation of these international proceedings and shared their experiences on topical issues of conference topics. Many thanks to the chiefs of all conference sections B. Briede, R. Birzina, I. Kokle-Narbuta, I. Lice-Zikmane, Z. Beitere-Selegovska, J. Pavulens and L. Vigante-Simane—for organization and management of effective work of sections.

I would like to express my deepest gratitude to the team of conference organizers and the scientific committee for their significant contribution to improving the work and guaranteeing the quality of scientific papers and ensuring successful working sessions.

On behalf of the Conference Organizing Committee

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Problems and solutions for nowadays school, university and adult education

Pre-School Teachers' Understanding about Children's Self-Directed Learning

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Abstract: As society evolves, the need for a paradigm shift from teaching-centred to learning-centred education has become stronger. The learning processes focus on how children learn instead of how teachers teach, and it requires children to take responsibility for their own learning, thus promoting self-affirmation and self-directed learning. Implementation of a competency-based learning approach requires improving transversal skills, including self-directed learning. Unfortunately, preschool teachers lack a common understanding about children's self-directed learning. It is still a habit to set the goal of lessons to provide ready knowledge to lead and control the learning process. Observations in preschool classes show that teachers often do not have sufficient understanding on how to organize and process self-directed learning. In various studies self-directed learning is mainly based on the experience of schools and universities, associating preschools with school practice and researches. Schools and teachers are challenged to promote children's self-directed learning. The aim of the paper is to identify the understanding of preschool teachers about self-directed learning in preschool and to find out the criteria for self-directed learning. Research methods used was content analysis of scientific literature and sources and survey of teachers. The research results indicate that preschool teachers relatively understand the essence of self-directed learning and determine the need for preschool teachers to promote children's self-directed learning in preschools.

Keywords: motivation, preschool child, self-directed learning, self-management, self-monitoring, preschool education.

Introduction

It is important for today's children to be open for change by getting fully involved and focused on the learning process, by having self-discipline, by controlling their behaviour and emotional state, by performing self-analysis in the process of self-directed learning, in which thinking occurs on a cognitive and metacognitive level (Zimmerman, 2002).

Self-directed learning is a key competency that children must develop from the age of three or four. These competencies should be integrated into all areas where new knowledge and skills are being acquired (Council of the European…, 2002; Dignath, Buettner, Langfeldt, 2008).

In pedagogical work, it is necessary to further develop children's independent research skills, notice causation and draw conclusions by gaining new experience and knowledge (Taurina, 2015). It is important to respect the learner's freedom or autonomy in the educational process and the regularities of teaching and learning (Badjanova, Ilisko, 2014).

Thus, the 21st century presents a need for new knowledge, skills, habits and values in preschool and school learning contents, by developing competency models (Mooij et al., 2012) to set different educational goals related to changes in the development of society.

In areas of activities, it is important for people to alternate competences with transversal skills in different ways, including self-directed learning. It covers all areas that have not been sufficiently addressed in the curriculum so far, thus emphasizing the development of value-based habits, namely, the planning and management of one's own learning activities.

There is still fragmentarism, duplication and lack of cohesion in the curriculum content and learning process. Unnecessary emphasis is placed on the acquisition of isolated, passive knowledge, and the curriculum is insufficiently related to real life situations. In the curriculum of 2006 (Recommendation of the…, 2006) the learning aspects have already been formulated. These aspects conceptually correspond to self-directed learning skills and their development is provided by the guidelines for preschool education. However, observations and analysis of preschool activities show that self-directed learning skills have not been strengthened in everyday practice and need to be promoted.

As studies show, compared to other levels of education self-directed learning in preschools is the least studied (Todd, Douglas, 2012; Mooij et al., 2012; Mooij, Driessen, 2008). Studies on self-directed learning in preschool place particular emphasis on the idea that children learn better if the experience is gained through self-directed activities and they can control their own experience (learning is self-directed), but the reasons have not been explored yet. Self-directed activity is identified in connection with the acquisition of technology in preschool and is studied as a self-regulated activity. According to researchers, a common international vision is needed to promote children's self-directed learning using technology in preschool (Mooij et al., 2012).

Based on the above, it can be concluded that although self-directed learning should be promoted in preschool, there is a lack of several studies that would identify how to implement it. In order for a teacher to be a facilitator of a child's self-directed learning (Minkyoung, 2018; Birenbaum, 2002), who takes over learning and thinking activities from students in a self-directed learning process, it is necessary to identify teachers' understanding about self-directed learning in preschool. Hence, the aim of the research is the following – to find out the understanding of preschool teachers about self-directed learning in preschools and to identify the criteria of self-directed learning.

Research methodology

The following tasks were set for the study:
- to develop an analysis of the theoretical literature of self-directed learning;
- to carry out a study of preschool teachers about self-directed learning in preschools;
- to identify the criteria of self-directed learning.

The research question was put forward – how do preschool teachers explain and describe children's self-directed learning?

The qualitative content analysis of scientific literature was carried out in the research, as well as an empirical study was conducted using a survey of respondents. Preschool teachers explain the term "self-directed learning", naming the preconditions that promote self-directed learning, indicate the criteria for self-directed learning and justify the need for children's self-directed learning. All survey questions are open-ended. The survey explored the explanation of self-directed learning, the rationale for developing self-directed learning skills, the criteria for self-directed learning and the preconditions for self-directed learning.

Microsoft Excel data processing program was used for processing and analysis of the obtained data. The research base consists of 55 preschool teachers of different age groups from different preschool education institutions (Table 1). The largest number of respondents were of age 26 to 40, having an average length of work experience of 16 years. This shows that the majority of respondents have work experience with preschool children and they have gained an understanding of self-directed learning in their work environment and teacher professional development courses.

Table 1

Respondents Profile

Age	Number (n)	Percent (%)
18-25	7	12.7
26-60	45	81.8
61-...	3	5.5
Total	55	100.0

Theoretical framework of self-directed learning

Self-directed learning occurs when a child learns proactively. This means that the child does not react passively to the teacher's instructions, but does something himself before learning a new topic and is constantly and actively involved in the learning process (Zimmerman, 2002; Lindner, Harris, 1992).

Self-directed learning means the ability to assimilate new knowledge and use the knowledge to solve problems, and the ability to self-evaluate and think critically, as well as to communicate and cooperate with others (Robinson, Persky, 2020; Cornish, 1986; Resnick, 1987).

Self-directed learning offers various benefits in the learning process. Self-directed learning helps children to develop their own effective learning ways depending on their learning style, speed, interests, goals and other factors. There is growing evidence that individuals who take the initiative to study, they usually learn

more better and deeper than those who are passive and dependent on their own learning. It is important to give learners more power over what to learn, when to learn and how much to learn (Minkyoung, 2018).

Self-directed learning also includes the transfer of conscious learning or metacognitive (thinking management) activities related to self-management by planning, forecasting, monitoring, adjusting, evaluating and reviewing (Miller-Keane, O'Toole, 2005). Thus, self-directed learning is closely related to the concepts of self-regulated learning, self-planned learning, and autonomous learning. Self-regulated learning is a concept oriented on the process, according to which learners monitor and evaluate their learning and behaviour to achieve their goals. Self-planned learning is defined as the learner's deliberate attempt to acquire specific knowledge and/or skills, and the learner is responsible for decisions and rules regarding learning activities. Autonomous learning, sometimes referred to as student learning, refers to a shift in focus in the classroom from teaching to learning, where students are actively involved in the process of building knowledge through their prior knowledge and learning strategies. Although all these concepts emphasize autonomy, they do not mean that learners carry out all their activities in complete independence. In teacher-led learning, the learner depends on the teacher who is taking full responsibility for what needs to be taught. Moreover, in the teacher-led learning perspective, the learner's experience is less valued than the teacher's experience, while the self-directed learning perspective considers the learner's experience to be an increasingly rich learning resource. Teacher-centred learning is usually subject-centred, while self-directed learning is usually focused on a task or challenge (Minkyoung, 2018).

In preschools and schools studies on self-directed learning have been carried out in interaction with children's age. In many European countries, preschool and primary school activities are organized according to the children's age, when learning tasks or activities are usually adapted to the average age. This is the case, for example, in Germany (Leistung und Versagen…, 1980; Händel, Vialle, Ziegler, 2013), the United Kingdom (Tymms, Merrel, Henderson, 2000; Wheadon, 2013; Norwich, Ylonen, Gwernan-Jones, 2014), the USA (Earle, 2001; Colangelo, Assouline, Gross, 2004a, 2004a; Lillard, 2012) and the Netherlands (Hermanns, 1979, 1980; Mooij et al., 2012). This usually means that most of the tasks or activities correspond to most of the children in the group or class. For talented and less talented children, the offered games and learning activities do not correspond to their level of psychological development. This discrepancy also means that these children are less responsible, less able to regulate their activities and less ready for self-directed teaching (Kemp, 2000; Meijer, 2003; Mooij, Driessen, 2008).

Summarizing the above mentioned, the essence of self-directed learning consists of three dimensions that are closely related to each other: self-management, self-monitoring and motivation. In the self-management phase planning is the main activity, when the child thinks about the results to be achieved and considers the strategies to achieve goals, creates a learning plan. Self-management is a collaborative experience in which children use teacher support, learning materials and communication with others. In the self-control phase, the child implements his plan and monitors his progress towards achieving the goal. The child may decide to change strategies. This phase determines how well the chosen strategies help him to achieve the learning goals. Self-control focuses on cognitive and metacognitive processes. Responsibility for self-control reflects the learner's commitment through critical reflection and collaboration. Self-control depends on both internal and external feedback. Motivation plays an important role in promoting learning efforts and achievements in making decisions about the choice of learning goals, and in trying to stay on the task and continue work that is closely linked to self-control and own will (Minkyoung, 2018). A child is considered to have good self-directed learning skills, if he is able to motivate himself to learn, manage his emotions, plan, analyse and evaluate his learning outcomes (Veenman et al., 2014; Azevedo, Aleven, 2013).

Based on the analysis of the self-directed learning theory (Schunk, Zimmerman, 2011; Miller-Keane, O'Toole, 2005; Reece, Walker, 2016), learning is considered as a component of deep learning and thus analysed in an empirical study based on the following learning activities: think, understand, know, collaborate, use, and make sure.

Research results and discussion

Due to the research, 29 % of preschool teachers explain self-directed learning activities as independent and 27 % as active, when children set their own tasks, carry them out and thus learn and manage their activities. Children are the initiators, supervisors and facilitators of their own actions to meet their learning needs. A smaller number of respondents (11 %) indicate the child's cognitive processes as the most

important in the explanation of self-directed learning, which shows that children are not offered tasks and problems to the extent that would facilitate their thinking processes. Therefore, it can be assumed that preschool teachers do not offer children enough tasks on different thinking levels. Preschool teachers (8 %) indicate that children in self-directed learning acquire new knowledge and skills by trying, experimenting, researching, making mistakes and drawing conclusions. This expresses the probability that children do not have a sufficiently stimulating and supportive learning environment that would reflect the learning process and encourage action, and that could encourage children to cognize and learn, thus facilitating the acquisition of "active" information. An equal number of respondents (6 %) mentioned interest, motivation and self-organization in the explanation of self-directed learning. Cognitive interest determines the child's motivation, which in turn ensures the promotion of achievements, decision-making on the result to be achieved (learning goals), as well as promotes self-control and own will. Self-organization is a characteristic of a personality to purposefully mobilize oneself, to actively use all one's possibilities in the achievement of goals and in interaction with self-management. Thus, by proposing independent and active activity as a component of self-directed activity, it can be concluded that preschool teachers do not associate it with the child's self-organization. Only 5 % of teachers emphasize self-directed activities as a search for information, 4 % note feedback, while 3% indicate self-regulation of one's behaviour, and only 1 % – cooperation. This indicates that preschool teachers perceive and understand self-directed learning in a fragmentary way. Thus, it can be concluded that preschool teachers lack a deeper understanding about essential self-directed learning components and their interrelationships.

Analysis shows that 38 % of preschool teachers note the learning environment as one of the preconditions that promote self-directed learning, meaning the material base (arrangement of appropriate environment, visuals, cognitive materials, various games) and its accessibility. A part of the respondents (21 %) emphasized an interested, encouraging and supportive teacher. The child interacts with human resources that is also a component of the learning environment. Preschool teachers explain this as a separate precondition for self-directed activity. An appropriate *learning environment* – meaningful, changeable and cognitive – is a prerequisite for promoting *self-directed learning*. Only a few teachers' responses mention time, which is an important precondition for children to be able to learn on their own, especially by promoting the cognitive processes through which the child acquires and processes information to manage his or her activities.

Preschool teachers (16 %) emphasize the child's interest and motivation as a precondition, pointing out that only a motivated child will show interest in the work to be done. Motivation, in turn, is related to the cognitive and metacognitive processes that contribute to the implementation of the results to be achieved and to overcome the difficulties and obstacles that arise due to implementation. The results of the survey show that preschool teachers explain the child's motivation in interaction with the teacher's activities, more specifically, that motivation stems from the child's interest and support. Based on the summarised teachers' answers, all that remains to be discussed is how to ensure an appropriate learning environment in the practice of preschool education institutions that promotes children's self-directed learning.

Although independent activity is mentioned the most in the explanation of self-directed learning, 11 % note children's independence as a precondition for self-directed learning, which shows that independent activity is actualized in the process of self-directed learning, but relatively understood as a component influencing self-directed learning. Only 8 % of preschool teachers mention a clear result to be achieved and 6 % mention a process oversight to promote self-directed learning. If the result to be achieved is not formulated, the child cannot plan and implement action steps, that is, monitor and evaluate the progress – how successfully he / she has achieved the expected result.

As criteria for self-directed learning most preschool teachers indicate achieved results (19 %) and planning (18 %). Thus, it can be concluded that teachers indicate the result to be achieved and planning as a feature of self-directed learning, but in practice there is a lack of understanding of how the result to be achieved and planning would affect children's self-directed learning. Preschool teachers (15 %) mention the identification of the necessary resources, which is in line with the preconditions of self-directed learning, that is, the arrangement of an appropriate learning environment, accessibility and an interested, encouraging and supportive teacher. Twelve percent of preschool teachers indicate self-regulation of emotions and 13 % – supervision, which correlates and describes a similar phenomenon as before, i.e., teachers name self-regulation and supervision as a feature of self-directed learning, but relatively connect

its influence with the child's self-directed learning. Nine percent of respondents mention reflection as a criterion of self-directed learning with the help of which the child guides his / her learning. Seven percent of respondents mention feedback as a criterion for evaluating his / her activity in the process and at the end of it. In order for a child to be able to direct his / her learning, he / she must be able to manage his / her emotional, behavioural and thinking processes (attention, memory, problem-solving processes), judge his / her thinking and further learning activities. For this to happen, the child must be able to reflect or consider seriously his or her thinking and, consequently, learning activities. Reflection is the basis for planning in which the child directs (plans, monitors and evaluates) his or her learning through questioning.

Feedback as a criterion for self-directed learning correlates with the preconditions for self-directed learning, that is, only a few preschool teachers name feedback as a feature of self-directed learning and understand its impact on the child's self-directed learning process. It is debatable how to provide feedback in the preschool pedagogical process so that it promotes children's self-directed learning.

The highest percentage of preschool teachers (28 %) mentions cognitive processes in the substantiation of self-directed learning skills. This means that self-directed learning promotes children's thinking, reasoning and analysis skills, as well as the child's attitude towards things that are reflected in the expression of opinion. This is in line with the studies analysed in the theoretical framework, confirming that the promotion of cognitive processes provides concentration and problem solving (Zimmerman, 1989; Pintrich, 2000; Randi, Corno, 2000; Minkyoung, 2018).

Similar to several studies (Hartman, 2001; Schraw, Kent, Kendall, 2006) 23 % of respondents indicate that self-directed learning skills provide readiness for life activities that include all following: independent activity (19 %), self-regulation (16 %) by managing their behaviour, and self-organization (14 %), that is, plan, organize, take responsibility, make decisions.

It follows from the above that in general preschool teachers only partially understand and are aware of children's self-directed learning opportunities, which is confirmed by the different answers on self-directed learning comprehension (Table 2).

Table 2

Understanding of self-directed learning

Perception	Frequency (n)	Percent (%)
1-do not understand	13	24
2-partially understand	31	56
3-fully understand	11	20
Total	55	100.0

Conclusions

1. Self-directed learning is described in the analysis of theoretical approaches as a component of in-depth learning and analysed in the study based on a self-regulated learning activities, what include self-discipline, emphasizing the development of value-based habits, planning of own learning activities, respecting the learner's freedom and autonomy. The essence of self-directed learning consists of three dimensions that are closely related to each other: self-management, self-monitoring and motivation.

2. In the empirical research pre-school teachers' understanding of self-directed learning in pre-school has been identified:

   a) most preschool teachers only partially understand the essence of self-directed learning; they emphasize children's independence, activity and initiative, but contrary to what is analysed in the theoretical framework, it is not associated with children's self-regulation;

   b) preschool teachers name the following criteria of self-directed learning: the results to be achieved, planning, self-regulation and supervision. However, there is a lack of understanding of the interrelationships and interactions of these components; it means that they name the criteria of self-directed learning, but do not understand how the mentioned criteria affect children's self-directed learning;

   c) the research data show that preschool teachers lack a deeper understanding of the components of the learning environment and their interaction in the process of children's self-directed learning.

3. Referring to the theoretical framework of the study, to encourage children to try, experiment, study, make mistakes and infer in the process of self-directed learning, it is necessary to provide a stimulating and supportive learning environment that reflects the learning process and encourages the child to act.

4. Summarizing the theoretical findings about self-directed learning and the results of empirical research, it can be concluded that children's self-directed learning in the practice of preschool teachers should be promoted by ensuring mutual learning of teachers – collectively planning, organizing, observing and analysing classes, sharing experiences, reflecting on feedback on the process and the result.

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Citizenship Education in the Mathematics Curriculum after the Reform of the Education Content in Latvia

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Abstract: Immense transformations occur in the modern society. Values, human rights, democracy, engagement in the life of the local community, school and the society at large are the content issues to be learnt at school which help to develop into responsible citizens of the country. The issues of citizenship education have been more extensively included both in the teaching/learning content and its implementation in all school subjects, including mathematics. Citizenship education is viewed in three aspects: knowledge about the society, skills to form relations with other people, to establish a safe and supporting environment, to follow rules and norms, attitudes to responsibilities and rights. Mathematics as a school subject is a sphere that has been little researched regarding its content and learning strategies in the aspect of citizenship education. The aim of the study is to explore and assess what changes have taken place after the education content reform in the mathematics curriculum in citizenship education. The data in the qualitative study have been obtained employing documentary research. Three criteria with respective indicators have been chosen for the analysis of the mathematics curriculum: civic knowledge, civic skills, civic values and attitudes. The study analyses two curricula of teaching/learning mathematics that are effective in Latvia for basic school (Grades 1–9) and secondary school (Grades 10–12). The results of the analyses are represented in the comparison showing the data obtained in 2013 and data obtained in 2020. The mathematics curriculum has extensively incorporated skills for learning self-respect and respect for others, developing the capacity to engage with each other, to contribute to a safe environment, as well as the skills to offer the opportunity to experiment practically with democratic principles, working alone, in small and bigger groups, listening to classmates' opinions and giving arguments for their opinion. The innovation in the new mathematics curriculum is the inclusion of the transversal skills in the learning outcomes, including the civic participation.

Keywords: citizenship education, mathematics curriculum, education reform, school education.

Introduction

Social and economic difficulties, violent extremism and distrust of democratic processes are only some of the threats to the common European principles of justice, democracy, human rights, freedom, equality, tolerance and non-discrimination. Education can increase mutual respect, facilitate fundamental values as well as promote inclusion and equality in this situation. Thus, one of the key themes in education is citizenship education. Its goal is to help pupils to become active, informed and responsible citizens who want and are able to take responsibility about oneself and one's community as well as to participate in the political processes (Citizenship education…, 2017). Citizenship education as an integral part of character education becomes even more important. The promotion of citizenship education at school is one of the goals of European cooperation in education. In 2006, the European Parliament and the Council of the European Union defined among the eight key competences the social and civic competences as vital for people who live in the knowledge-based society (European Parliament…, 2006). The promotion of equality, social cohesion and active citizenship in school education is one of the key goals of this decade envisaged by the Common strategic framework in the field of education and learning system for the cooperation of Europe (Council of the European Union, 2009; Citizenship education…, 2017). Citizenship education is viewed in three aspects. Firstly, it is the knowledge about the society. Secondly, it is skill to form relations with other people, to establish a safe and supporting environment, to follow the rules and norms. Thirdly, it is attitudes to responsibilities and rights (Andersone, Greiškāne, 2011). The European Commission emphasizes the necessity of ensuring that young people acquire social, civic and intercultural competences, by promoting democratic values and fundamental rights, social inclusion and active citizenship, and by enhancing critical thinking and media literacy (European Commission…, 2016; Maass et al., 2019). Citizenship education in the education curricula of most of the European countries incorporates the greatest

part of competences in connection with democratic and socially responsible action, critical thinking and the interaction of people (Citizenship education…, 2017). Citizenship education helps every pupil to be aware of his/her responsibilities and rights in the society, teaches to evaluate critically phenomena and processes, to express and defend personal opinion (Andersone, Helmane, 2013). If initially citizenship education was more connected with the formation of knowledge-based understanding, then now there is a transition to the formation of active citizenship (Council of the European Union, 2018). The outcome of citizenship education is the active participation of youth in the civil society, which is described by mutual respect and non-violence, which respects human rights and democracy (Hoskins, 2006).

The education curriculum reform is effective in Latvia as of September 1, 2020, and its aim is to help the pupil to develop his/her personality, to engage actively in the societal life, to solve the challenges of everyday life, to acquire skills and motivation to learn life-long and life-wide. This points to the broadening of the importance of citizenship education in the new teaching/learning content in which there is the transfer of emphasis to active application of knowledge and skills in diverse situations. Mathematics as a school subject is a suitable context in citizenship education to promote logical thinking and problem solving as well as self-guided learning. Thus, there emerge preconditions for the formation of habits that are important for the pupil, e.g., "Makes sure whether he/she has understood the question, situation in general and only then starts looking for the solution". The defined learning outcomes in mathematics include such outcomes, the attainment of which requires pupils' cooperation to solve complex problems or research situations that need the generation and discussion of ideas.

Citizenship Education and Mathematics Education

Citizenship refers to the duties and responsibilities that come with being a member of a community or society. Citizenship values are things people consider to be important in fulfilling these duties and responsibilities, which vary by nation and culture and change over time. They are often political, economic, humanitarian, social, cultural, and behaviour values (Akin, Calik, Engin-Demir, 2017; UNESCO, 2014; Wolbring, 2012; Alghamdi, 2019).

Active citizenship is participation in civil society, community and/or political life, characterized by mutual respect and non-violence and in accordance with human rights and democracy (Missira, 2019; Hoskins, Mascherini, 2009). Active citizenship is the concept of someone who participates in public life (civil society and political life), who takes a role in the community, seeks information and is inspired by the aim of the common good and the respect of human rights (Missira, 2019). Active citizenship is strongly related to civic engagement and plays a crucial role in building social capital as connections between individuals – social networks and the norms of reciprocity and trustworthiness that arise from them (Putnam, 2000; Putnam, 2002; Missira, 2019). Active citizenship holds that citizenship is not solely comprised of passive membership of a political entity, but that being active is essential of being a citizen. It is about being willing to contribute to social action as well as to political debate, to be willing to get involved (Brannan, John, Stoker, 2006; Missira, 2019). Civic participation can be understood as a right, need or even an obligation; its meaning narrowed to participation in elections, or extended to various areas of political, social and civil life; or processed in functional or political terms, including a critical evaluation of social problems and the pursuit of systemic change (Hoskins, Saisana, Villalba, 2015; Westheimer, Kahne, 2004; de Groot, Veugelers, 2015; Hoskins, Kerr, 2012; Kopińska, 2020).

Citizenship education is not only the transfer of societal values and attitudes but also their transformation, changing them according to political and ideological aims (Sandström, Stier, 2008). Civic education does not mean the preparation for civic participation, it is actually the education for civic participation, and thus it should incorporate the education for citizenship. Citizenship education should help pupils develop knowledge and skills, competences and values which enable active and responsible participation (Karakatsani, 2008; Missira, 2019).

STEM knowledge is fundamental for being an actively engaged and responsible citizen and for becoming fully aware of the complex challenges that our society faces. It helps to explain and understand the world, to guide technological development and innovation and to plan for the future (European Commission, 2015; Maass et al., 2019). Science (including mathematics) education has focused on the 'learning of science' (European Commission, 2015), with pure science detached from societal implications. This focus can be contrasted with learning 'of and about science' (Osborne, Dillon, 2008; Maass et al., 2019).

It is often neglected that science has social, cultural and ethical dimensions. Learning of and about science also fosters young people's understanding of nature of applications and implications of science. Consequently, by learning of and about science, they learn principles and competences vital in democratic, pluralistic and increasingly multi-cultural European societies. In this sense, science and mathematics education also have become part of citizenship education (Maass et al., 2019).

Throughout human history mathematics plays a key role in intellectual and professional development and is considered an integral part of human culture, because of creating an understanding of the surrounding world, providing a scientific basis and ensuring the development of technology. Mathematical studies have a decisive role in education, forming systematic thinking, forming the person's cognitive abilities, as well as logical thinking and influencing the teaching process of other disciplines (Yusupova, Ibyatova, 2018; Vintere, Cernajeva, 2019). School mathematics is not the same as academic mathematics; it is rather one of the many interfaces between mathematics and society to see the obstacles and opportunities for one dimension of social turn in school mathematics (Popkewitz, 2004). Mathematics education in the third millennium will not just be about teaching and learning mathematics, but about the nature of knowledge and the place of mathematics in society. One of the central aims of the school curriculum should be a concern to understand the place, purpose and power of mathematics in the society. It is important for mathematics educators to appreciate the role of (school) mathematics so that learners can come to appreciate how mathematics works in society. If such a shift is to translate into actual educational practice in schools, it seems clear that certain political, socio-cultural and curricular conditions need to be in place (Noyes, 2007; Falkenberg, Noyes, 2010).

The aim of the study is to explore and assess what changes have occurred after the education content reform in the mathematics curriculum in citizenship education.

Methodology

The question of the present research: what is the content of citizenship education (knowledge, skills, and attitudes) in mathematics curriculum? The present study has explored and assessed what changes have occurred after the education content reform in Latvia in the mathematics curriculum in citizenship education. The data in the qualitative study have been obtained employing such a research method as documentary research. Three criteria with respective indicators have been chosen for the analysis of the mathematics curriculum: civic knowledge, civic skills, civic values and attitudes (Andersone, Helmane, 2012). The study analyses two curricula of teaching/learning mathematics that are effective in Latvia for basic school (Grades 1 – 9) and secondary school (Grades 10 – 12): Mathematics curriculum Grades 1 – 9 (Matemātika 1.–9. klasei, 2019), Mathematics I curriculum of the basic course for the general secondary education (Matemātika I…, 2019), Mathematics Grades 1 – 9 (Matemātika 1.–9. klasei, 2005), Mathematics Grades 10 – 12 (Matemātika 10.–12. klasei, 2008).

The mathematics curriculum (Matemātika 1.–9. klasei, 2005; Matemātika 10.–12. klasei, 2008) mainly described the expected outcomes in the content aspect of teaching/learning mathematics, without paying attention to value education, citizenship education and the issues related to character education. In turn, the new teaching/learning content in mathematics is organized according to the most essential key concepts of the content that the pupil has to acquire to develop common understanding about the surrounding world and oneself in it. The key concepts of are the form the structural framework of the compulsory teaching/learning content; requirements for the acquisition of the teaching/learning content or the learning outcomes that the pupil has to attain finishing the particular stage of education are described according to content. These learning or expected outcomes are defined both for each theme in the teaching/learning content and the respective educational three-year stage, finishing Grades 3, 6 and 9. The learning outcomes at the end of the respective educational stage define also the learning outcomes in connection with the acquisition of transversal skills, including the civic participation which directly refers to citizenship education. This is a new formation in the mathematics curriculum which has been developed as a result of the education content reform. Besides, the basic course mathematics curriculum of the secondary school was used in the analysis of the mathematics content for Grades 10 – 12 where the content is no longer divided per particular grades, but the general common content for all secondary school grades is given together. This allows schools to organize themselves the acquisition of the content in the particular sequencing during this period. This is the novelty after the introduction of the education content reform. This also defines the transversal skills, such

as critical thinking and problem solving, innovation and entrepreneurship, self-guided learning, cooperation, civic participation and digital literacy (Matemātika 1.–9. klasei, 2019; Matemātika I…, 2019). This study analyses the learning outcomes in the new mathematics curriculum according to the selected criteria at the end of the education content stages (finishing Grades 3, 6, 9 and 12).

Results and Discussion

The results of the analyses are represented in the comparison showing the data obtained in 2013 (Andersone, Helmane, 2013) and data obtained in 2020. Thus, it is before the education content reform and after it pointing to the significant changes in citizenship education that have occurred based on the education content reform (Table 1).

Table 1

Citizenship education criteria and indicators for mathematics curriculum

Criteria	Indicators	Year	Mathematics curriculum for each grade											
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Civic knowledge	Theory of human rights and democracy	2013			◐	◐								◐
		2020	◐	◐										◐
	Theory of human rights and democracy	2013												
		2020												
	Cultural and historical diversity	2013						◐			◐	◐		
		2020	◐											
Civic skills	Involvement in the life of the school, local community	2013		◐	◐	◐	◐	◐	◐	◐	●	●	●	●
		2020	◐	◐	◐	◐	◐	◐	●	●	●	●	●	●
	Contribution to safe environment	2013	●	●	●	●	●	●	●	●	●	●	●	●
		2020	●	●	●	●	●	●	●	●	●	●	●	●
	Experiment practically with democratic principles	2013	●	●	●	●	●	●	●	●	●	●	●	●
		2020	●	●	●	●	●	●	●	●	●	●	●	●
Civic values, attitudes	Developing values consistent with a pluralist society	2013												
		2020	◐	◐	◐	◐	◐	●	●	●	●	●	●	●
	Learning self-respect and respect for others	2013	●	●	●	●	●	●	●	●	●	●	●	●
		2020	●	●	●	●	●	●	●	●	●	●	●	●
	Developing capacity to engage with each other	2013	●	●	●	●	●	●	●	●	●	●	●	●
		2020	●	●	●	●	●	●	●	●	●	●	●	●
	yes ●		partly ◐			no ○							

The studying of the mathematics curriculum allows concluding that there have been significant changes resulting from the education content reform in favour of including citizenship education in learning mathematics. The reform reflects the society's needs for bringing up active members, conscientious citizens of the society. The innovation in the new mathematics curriculum is the inclusion of transversal skills in the learning outcomes, including civic participation. Civic participation as a transversal skill envisages that the learner develops an active life position and consolidates the personal conviction about each individual's potentiality to affect and change the environment and the current situation; he connects the sustainability of the society and environment with the individual's everyday actions and recognizes it on both the local and global scale; he explores empathetically the diverse opinions, acts in the spirit of solidarity and responsibly, in discussions searches for solutions to the contradictory situations and together with others implements these solutions (Skola2030, 2019).

Civic knowledge is mainly targeted towards transferring information and knowledge about the country's geography and history, the underlying principles of its constitution, the main organizational models and political system. Pupils' passive (essentially passive) understanding about the theory of human rights and

democracy, cultural and historical diversity can be learned in all stages of mathematics education. According to the information found in the mathematics curriculum, when learning mathematics pupils can acquire and get to know social, civic and political institutions, human rights, cultural and historical heritage as well as cultural and linguistic diversity of society (Matemātika I…, 2019; Matemātika 1.–9. klasei, 2005). For instance, in Grade 1 pupils use a monthly calendar in which they look for and name the date or days of the week for a particular event that is significant for the community in a narrower or broader context; finishing Grade 3 pupils notice that different people have different opinions, they name their values. Before the reform, it was included only in the curriculum of separate grades. Yet, the multicultural environment is a modern reality in which pupils function every day, including mathematics lessons (Skola2030, 2019; Matemātika 1.–9. klasei, 2005). Finishing Grade 6, pupils identify regularities in the society, environment and community on a national scale as well as their impact, role and necessity to engage in the improvement of their community life applying the knowledge and skills acquired in mathematics. They are able to explain the different consequences of one action (their impact on other people, relations, and environment). The previous mathematics curriculum had a narrower perspective, according to that pupils were able to see the connections between the variables in nature, society, technical equipment and to solve practical tasks that were connected with everyday life, science, environment and health issues, were aware of their importance in everyday life. In turn, finishing Grade 9, pupils explain their views on the regularities in the society, environment, and community on the European scale and substantiate it based on the information and statistical data found in different resources. They analyse how the action of separate individuals affects the society and environment applying mathematical coherence and mathematical language. In the previous curriculum, pupils had to understand the applicability of the variability term in the analysis of everyday processes and be able to provide precise arguments for the opinion that was connected only with one aspect of citizenship education, namely, the ability to explain one's ideas. After the mathematics content reform, finishing Grade 12, pupils explain and give arguments for their opinions about the interconnections both on the local scale and globally, evaluate the individual and the interaction of the society and the environment, while the old mathematics curriculum envisaged only that pupils were able to apply the mathematics knowledge and skills in their everyday life and professional activities saying nothing about the citizenship education (Skola2030, 2019; Matemātika 10.–12. klasei, 2008).

Civic skills contribute to a safe environment and the opportunity to experiment practically with democratic principles are included in the curricula of all stages of education as before. The innovation is the inclusion of skills of being involved in the life of the school and local community in the mathematics curriculum already starting with Grade 1. Finishing Grade 3, pupils engage in the improvement of the school life with the teacher's support and determine what has changed afterwards. Finishing Grade 12, in turn, pupils independently and together with others gain experience engaging in searching for and implementing solutions that help to improve the quality of life. Therefore, also in learning mathematics it is possible to cultivate pupils' conviction to observe the civic behaviour working in the class or outside it, creating the possibility for them in learning mathematics to take different initiatives. For example, it is advisable in Grade 1 to organize pupils' cooperation in pairs, in small groups performing actions, tasks necessary for acquiring the theme. Thus, it is possible to form the understanding if the pupil alone has no ideas, conviction; it is possible to compare the results, to discuss the ways of solution. Pupils themselves can make tasks and exchange them. In Grade 3 pupils design models of real and imagined buildings; they depict visually, explain and substantiate their thoughts and solution developing the habit of seeking the solution in new situations.

Civic values, attitudes are necessary so that pupils have more possibilities to engage in the diverse actions of the society as well as in the formation of opinions and attitudes, thus becoming informed and responsible citizens. Civic values and attitudes, learning self-respect and respect for others and developing the capacity to engage with each other have stayed unchanged in the mathematics curriculum also after the reform in all stages of education. However, after the reform, special attention is paid to developing values consistent with a pluralist society that until now had not been included in the mathematics curriculum. For instance, finishing Grade 6 pupils seek the substantiation of actions and opinions of others, name and justify personal values and those of his/her family members and school, acts in accordance with the personal values. Finishing Grade 9, in turn, pupils draw conclusions based on their experience as well analysing different sources on how values can change in the course of time. Based on personal values, they choose events in which to engage and if necessary to involve others, explain and give arguments for their choice or reasons

for not engaging. They guide their actions in conformity with their values and justify their choices. And finishing Grade 12, based on their values and respecting the values of others, they choose advisedly the events and everyday situations in which to engage and involve others, justifying their position respectfully, they know how to express themselves, how to refuse if the event fails to comply with the values and are able not to yield to the group pressure, staying connected with those with whom they disagree. The mathematics curriculum contains references to social and moral responsibility, including self-confidence, and learning to behave responsibly towards others, contribute to a safe environment; recognition of and respect for oneself and others with a view to achieving greater mutual understanding; the construction of values for respecting social perspectives and points of view. For example, in Grade 1 pupils express their thoughts about why it is necessary to measure length, distance and name everyday situations in which measuring is applied; they explain their answers, thought, idea developing the habit to think over the solution (it helps the pupil both to guide his own learning and to cooperate successfully with others); in Grade 3 solving the situation tasks as well as making the situation descriptions according to numerical expressions, they develop the habit of applying the acquired in concrete, including unknown, life situations, and in Grade 12 they independently and together with others gain experience engaging in seeking the solutions and implementing them which helps to improve the life quality applying the knowledge and skills learnt in mathematics.

Conclusions

The new mathematics curriculum incorporates the planning of the mathematics teaching/learning content and learning outcomes. The innovation in the new mathematics curriculum is defining transversal skills, including civic participation, as the pupils' learning outcome. Civic participation is an integral part of citizenship education that is necessary for every member of the society implementing the citizen's rights and responsibilities and demonstrating a civic stand, which is developed also in mathematics lessons.

Taking into consideration the specifics of the school subject, the mathematics curriculum has extensively incorporated skills for learning self-respect and respect for others, developing the capacity to engage with each other, to contribute to a safe environment, as well as the skills to offer the opportunity to experiment practically with democratic principles, working alone, in small and bigger groups, listening to classmates' opinions and giving arguments for their opinion.

The innovation in the mathematics curriculum in citizenship education is the inclusion of skills of developing values consistent with a pluralist society in the learning outcomes. Before the reform, no attention was paid to that in mathematics studies. Today's world changes rapidly and the understanding of values is significant in the life of the society as well as the understanding of the diversity of cultures because the multicultural environment is part of the globalized world. The mathematics curriculum envisages its development throughout the schooling starting from Grade 1. For instance, pupils participate in mathematics lessons in homogeneous and heterogeneous group works, accept differences in opinions, participants' diverse experience and abilities, they predict, eliminate and solve disagreements and conflicts, also in the digital environment.

In general, it can be concluded that due to the education content reform the mathematics curriculum incorporates citizenship education to a greater extent and it can be implemented both in the teaching/learning content and in learning and it is one of the pupils' learning outcomes.

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The Research of Latvian Language Competence of Secondary Education Institution Graduates for Career Development

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Abstract: The topicality of the research is related to the goal of education to help a pupil to become a proficient language user who has acquired not only the basic skills of the language, but also understanding of the role of the Latvian language as the state language in the integration of the society, formation of national identity and cultural-historical heritage preservation. The aim of the study is to analyse Latvian language competence of graduates of Latvian language of instruction, minority secondary education institutions and state gymnasiums of Kurzeme, Latgale and Riga for their readiness for further career development. The methodology of the research is the outcome of the career development and sociolinguistic and linguo-didactic theories, which are based on the cognitive constructivist approach. The results of the empirical research are obtained from 409 texts of judgments systematized in the balanced corpus of modern Latvian language texts within the framework of the National Research Programme "Latvian Language" (No VPP-IZM-2018/2-0002). Language competence of graduates from secondary education institutions is low. It is affected by the linguistic environment, attitude towards language as an economic and social value, its learning motivation and insufficiency in language didactics. The research outcomes outline several important aspects for the improvement of the Latvian language didactics.

Keywords: language competence, career development, critical thinking, language environment.

Introduction

Even though the modern processes of globalization and internationalization require good knowledge of English or other European and world languages, the issue of language competence of the particular state is not less important. In Latvia it is the Latvian language, which, in compliance with the Official Language Law, employees of state and local municipal institutions, courts and institutions belonging to the judicial system, as well as companies in which the majority of the capital belongs to the state or local government, must know and use to the extent necessary for professional and official duties – Article 6 of the Official Language Law (Official Language Law, 1999).

The topicality of the research results from the goal of education to help the pupil become a proficient language user who has acquired not only the basic skills of the language, i.e., listening, speaking, reading and writing skills, but also awareness of the role of the Latvian language as the state language in the integration of the society, the formation of national identity and cultural-historical heritage preservation, in their own emotional and intellectual experience enrichment (Regulations Regarding…, 2019).

Recently in the society, also including secondary school graduates there has been a tendency to be careless towards the cultural norms of the Latvia language and their application in communication. Even in the formal communication there often appears an unmotivated expressive conversation, slang, offensive, rude words, vulgarism, and it does not promote the development of language competence (Gavriļina, Špūle, 2018).

Results of the centralized examinations confirm that about 22 % of the secondary school graduates are not able to write a text relevant to the topic, the structure of the text is not observed precisely, there are mistakes which result from incompetent word formation, lack of lexicostylistic skills. There are punctuation errors in a simple extended sentence in speech-to-text writing (end punctuation, connection of coordinated parts of the sentence, repeated words, non-restrictive apposition, separate participial phrases, exclamation words, particles, addresses and a group of address, insertions), in a compound sentence (syndetic or asyndetic connection, connection of sentence parts with the conjunction and), in a complex sentence (separation of subordinate clauses, collateral subordinate clauses, unnecessarily separated comparison, considering it as a subordinate clause), in sentence of direct speech, separating direct speech and the reporting verb, also including quotations in text (Skolēnu sasniegumu analīze…, 2007)

The discussion of the focus group confirms that teachers also spot the biggest problems in pupils' inability to apply the terms of the Latvian language grammar and interpunction, inability of minority pupils to acquire in a qualitative way the content of the Latvian language curriculum. There are teachers who understand the pupil-centred approach, which envisages a more active involvement of pupils in grammar acquisition, such as a refusal form teaching language issues (Pētījums…, 2020).

There is a correlation between language competence and pupil or student's academic achievement, their ability to self-realize, with issues related to personal development, since language is not only a means of communication, the language is also a means of experience accumulation, means of individual identity (Daszkiewicz, Wenzel, Kusiak-Pisowacka, 2018; Smékalová, Němejc, 2017).

The policy of Latvia education states that in a comprehensive secondary school, regardless of the student's ethnicity and place of residence, the Latvian language as the state language has to be acquired on such a level that its graduates could implement it not only for communication purposes, but also could perceive the language as a system of signs, could make reasoned judgments with the help of the Latvian language, would be able to self-realize in compliance with the situation and implement other important language functions.

The language is important for the secondary education graduate's career development, where career means a purposeful individual's activity in their development progress provision, including the process of profession acquisition (Pudule, 2013).

The language, in which the thought is materialized, is one of the means according to whose application we can judge what the person's level of thinking, level of knowledge, social environment, where they live, attitude towards oneself and the society in general is.

The aim of the study is to analyse Latvian language competence of graduates of the Latvian language of instruction, minority secondary education institutions and state gymnasiums of Kurzeme, Latgale and Riga for their readiness for further career development.

Methodology

The research question is – what is the level of language competence of graduates of secondary education institutions and what influences it?

The research methodology is the result of career development and sociolinguistic and linguo-didactic theories, which are based on the cognitive constructivism approach.

The research object is 409 texts of essays written by graduates of the Latvian language of instruction, minority secondary education institutions and state gymnasiums of Kurzeme, Latgale and Riga, which have been systematized in the balanced corpus of modern Latvian language texts. The empirical research has been carried out within the framework of the National Research Programme "Latvian Language" (No VPP-IZM-2018/2-0002).

The research method is the analysis of the content and linguistics of the essays systematized in the balanced text corpus in compliance with theoretically justified criteria. Applying the concordance analysis of language units, it is possible to judge not only about their frequency of use, but also about the most characteristic deviations from the norm. The obtained data have been rated and expressed as a percentage depending on the amount of the obtained data and interpreted to see the connections between the statements according to the issue raised in the research.

Regional dispersion, differences in secondary education institutions in terms of curriculum and social status have been observed to ensure higher data reliability, as well as the analysis of the content contained in the original texts in a broader context has been carried out, if the units found in the balanced modern Latvians language corpus reflects inaccurately the connection of the statements with the researched problem.

Descriptive statistical methods and graphical methods have been used in the text for the analysis of the data obtained in the study.

Results and discussion

Nowadays an individual's career and its development are seen in a broader context. It is understood as human progress in social, professional and individual spheres throughout life, including also what happens outside working hours. Career development includes not only acquisition of a profession but also human personality development in general (Lemešonoka, 2017; Pudule, 2013; Jaunzeme, 2011). Career education focused on self-understanding, thinking about opportunities and making decisions (Urdzina-Merca, Dislere, 2018).

According to theories in the process of career development in different fields, such knowledge and skills of the Latvian language are required that a person could apply them in a competent way in communication, taking or giving advice, convincing of their knowledge and skills, dealing with information, synthetizing and analysing it, organizing and planning. The ability to assess the situation in a critical way, teamwork, ability to communicate with specialists from different areas, understanding of diversity and multiculturalism, ability to learn, ability to create new ideas (creativity), leadership skills of other people, project preparation skills, business correspondence and document preparation skills are not less important (Hughes, Acedo, 2016; Jaunzeme, 2011; Oroujlou, Vahedi, 2011; Lauze, 2011).

The ability to listen or read and perceive texts of other authors and the skill to create independently texts of different content, structure and language complexity are equally important.

The texts which a person creates in written speech are the basis of the structure of the language system, norms of speech and organization of the person's inner speech. Written speech in comparison with oral speech is more conscious and controlled. Analysing the texts of written speech, more information can be obtained on a person, their speech behaviour, life style, way of thinking, activities and values, attitude to themselves and the surrounding world, and also more objective assessment of their language competence (Anspoka, 2020; Vidnere, 2019; Alpar, 2013).

Broad linguistic knowledge, proficiency of the particular language lexis and grammar system, understanding of processes in language development and language policy and the skill to apply the knowledge of the language in practice are considered as language competence.

Language competence is a linguistically, psychologically and methodically organized system in which there is the unity of speech and language as a means. It is one of the individual's intellectual abilities characterized by conscious or intuitive knowledge of the language system to form grammatically and semantically correct expressions and implement a particular language function in a meaningful text. According to the socially linguistic approach, language competence is not an innate ability. It is formed when a person interacts with the social environment and acquires particular knowledge on the world and language system without separating one from the other. Language competence is closely related to sociocultural competence, as the grammar used in the text is a means of expressing the particular context (Vidnere, 2019; Daszkiewicz, Wenzel, Kusiak-Pisowacka, 2018; Mynbayeva, Shahanova, Zhanaikhan, 2015; Celce-Murcia, Olshtain, 2000).

The important criteria to judge an individual's ability to implement the purpose of communication in a written text are as follows:
- relevance of the content to the topic,
- the conditions of text composition are taken into account,
- unified whole of sentences, their sets or contextual connections,
- topic outlines and communicative assignment appropriate for the language style,
- adherence to the principle of completeness,
- adherence to the norms of language culture (orthoepy or orthography and punctuation) (Daszkiewicz, Wenzel, Kusiak-Pisowacka, 2018; Lauze, 2011).

The independently created 17-18-year-old youngsters' texts about such topics as the role of books in human life, challenges of the 21st century and human mutual relationships enable us to see the writers' understanding of the chosen topic, also what their individual purpose of life, personal social-psychological maturity, understanding about social processes and the experience obtained at an educational institution are.

Research results show that 96 % of all graduates have the ability to relate the content of the text to the topic. Deviation from the topic is not a statistically significant indicator. At the same time only 57 % of respondents adhere to the proportions between the parts of the text, connection of sentences, so that the text would appear as a wholeness, observe the principle of text completeness, and use paragraphs in appropriate places in the text. Reading the texts mentioned above, one has to admit that it is hard to follow the author's idea, as it is developed in a chaotic way without adhering to any basic principles of text logic.

Comparing the secondary education institution graduates' skills to reveal the depth of the content and observe the text structure, a higher quality can be noticed among the Latvian language of instruction and state gymnasium graduates of Riga and Kurzeme Region. In the work of graduates from Latgale secondary education institutions deficient or even wrong knowledge on such issues as Latvian or foreign literature, cultural events in Latvia and the world have been identified more often. In all regions graduates' understanding of what Christianity, cultural traditions, and types of art is careless; text genres, authors of art works or other work are mixed up. Graduates of secondary education institutions more often know the title of the work they have read, but not its author or mix them up with another one. Graduates reveal the particular knowledge either too generally, without justifying their opinion, or they reveal their subjective attitude towards the particular situations, and this is indicated by the following statements such as *I think*, that we- the youth understand more why such things happen, but it is only my point of view; *I think* everybody knows that music is necessary; my children's children will live in another century; *I am sure and I know*, that any of the films can make us think, appreciate what we have.

The expression of the content contained in the text is also closely linked to the choice of words and word forms, for their selection depends on what the speaker or writer pays attention to, and what beliefs are expressed. Research shows that 42 % of all respondents also justify their statements. Graduates of Riga regional secondary schools and state gymnasiums are more confident about their opinion. The texts of these graduates contain the following statements in sentences such as *I know* that Aleksandrs Čaks had as interesting life as Kārlis Padegs; *I know* when purchasing the newest smart phone, I will confine myself in a cage, addiction cage. However, I do not resist these bars; technologies do miracles, but *I know* it seems wrong to elderly people, as they interfere into human lives. In 3 % of respondents' expressions there dominate words *always* and *only*, verbs in the debitive mood, expressing categoricity, which has not been based on objective facts, but only in the writer's subjective opinion, for instance, it can be seen how technologies replace humans…, but we cannot escape form it, for we always make everything easier for ourselves; Bille was *always* dressed in good clothes, as Bille's father was a tailor; the book *always* has an amazing power which can influence human life; we *always* won't have enough time, we will *always* put some work on our shoulders, waste time on social networking sites, polishing our appearance, trying to cheat ourselves, thinking that it will help us; one seeks fame, another peace, another one *exclusively* material values; humanity will become lazier over time or in many thousands of years there will be *only* artificial intelligence; books will *only* be readable on computers and books will be plain pieces of paper with some patterns; *only* due to literature the whole world can understand metaphors, in which the concept of the heart is used; one *always has to read* good literature so that we would own an aesthetic taste; we have to *learn from our mistakes in the past*; in my opinion, to avoid lots of mistakes, we *have to read a lot,* as literature can change our life and make us happier. On average 2 % of graduates use the reported speech and conditional mood or, either to stand apart from the responsibility for the statement or self-defend oneself in case somebody might not like the point of view, for instance, the modern youth are gifted, *I would like to say*, the future is in good hands; *all people think* they live and they have their duties; lots of people consider that classical books will disappear already in the nearest future; *lots of elderly people believe* that the youth do not treasure spiritual values, but rather material values; *one could say* that love, both from the psychological point of view and the chemical and biological, is so hard to be explained. Class 12 students of state gymnasiums and the Latvian language of instruction secondary schools use more foreign words, more complex syntactic constructions, and also expressions borrowed from mass media to express their opinions, especially if they talk about politics, such topical issues of the 21st century such as development of technologies and society's multiculturalism. Both in secondary schools of the Latvian language of instruction and state gymnasiums there are children of minorities for whom the Latvia language is not their mother tongue. In the essays of these graduates the author's intentions can only be felt from a wider context due to their grammatical and stylistic errors. The issue of the language style and its compliance with the

communicative intention is essential. The research outcomes confirm that only 29 % of respondents apply accurately the means of language in compliance with the chosen language style. The expressive lexis is unduly used in texts, words are used with wrong lexical meaning, unmotivated colloquial words or expressions, for instance, books are a fantastic branch; one book took me over in its power; the book cures; a book as an emotion; theatres bring and give laughter; squander money; there is no need to feed the evil, churn cream, not get on one's nails, switch off mind (Figure 1).
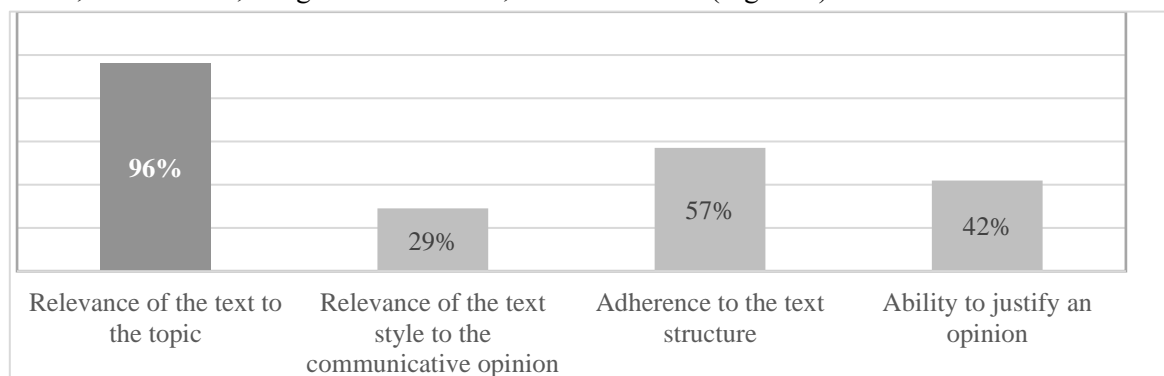
Figure 1. Text-formation skill.

In order a human being, having acquired secondary education, would be able to proceed with their education or integrate in the modern labour market, in which teamwork dominates, it is not enough that they are able to reproduce the knowledge of an issue. There are situations in which they have to justify their statements logically and correctly. It cannot be conceded that human statements contradict assumptions or axioms confirmed in a particular science. It is not less important to understand that the justification of an opinion is closely related to the sentence formation skill, in which a transition from one sentence to other happens, applying such syntactic constructions as *because of….*, *as*/*since.* (Ferretti, Graham, 2019). The research findings show that in the Latvian language acquisition process more attention should be paid to the acquisition of the argumentation skill, but also the work with lexis, especially foreign words, issues of functional style acquisition and speech genre requirements. To reduce too excessive categorization in youngsters' judgments, uncritical perception and assessment of the information found in mass media, intolerance of diversity, different opinions, more attention should be paid in the education process to critical thinking promotion, reasoned opinion expression based on facts, skills to assess information from the point of view of reliability of acquisition, tolerant attitude formation to different people in the society.

Studying secondary school students' skill to adhere to the orthography and punctuation norms, one has to admit that the mistakes are the same that have been noticed in the previous research studies (Skolēnu sasniegumu analīze…, 2007; Gavriļina, Špūle, 2018; Pētījums…, 2020; Anspoka, 2020). The level of Latvian language competence has decreased in the Latvian language of instruction schools and state gymnasiums. It can be explained due to the fact that in the education institutions mentioned above the number of students, for whom the Latvian language is the second language, has increased, as well as due to the need to compete with English and other foreign languages has increased for the Latvian language. In the texts of essays foreign words are used more often, but their lexical meaning and spelling are inaccurate or even wrong. Graduates most often use such foreign words spread in the social environment such as the Internet, media, innovations, creativity, stereotype, comfort, civilization, generation, filter, propaganda, emigrate, immigrate, uniqueness. It proves that the interdisciplinary link cooperation between teachers of different subjects has to be strengthened.

In the texts of graduates from minority secondary schools there are simpler sentence syntactic constructions, therefore the number of punctuation mistakes is smaller. However, mistakes of language interference, errors in the use of macron and palatalization marks in words, in use of word forms are more frequent. An overview of the most frequently made mistakes can be seen in Figure 2.

Findings of the research show that the quality of the Latvian language application is very diverse in different regions and for graduates of different type secondary education institutions. It is higher in Kurzeme and Riga regions, lower in Latgale. There are no statistically significant differences in terms

of spelling of words and use of punctuation between graduates of the Latvian language of instruction and state gymnasiums, whereas there are significant differences in the quality of language use between minority and Latvian graduates. This suggests that the Latvian language is often just the language of instruction, but it is not the language of communication outside school hours, but also the transfer of the experience acquired in the mother tongue to the Latvian language, as the acquisition process of the second language, is not planned purposefully enough.
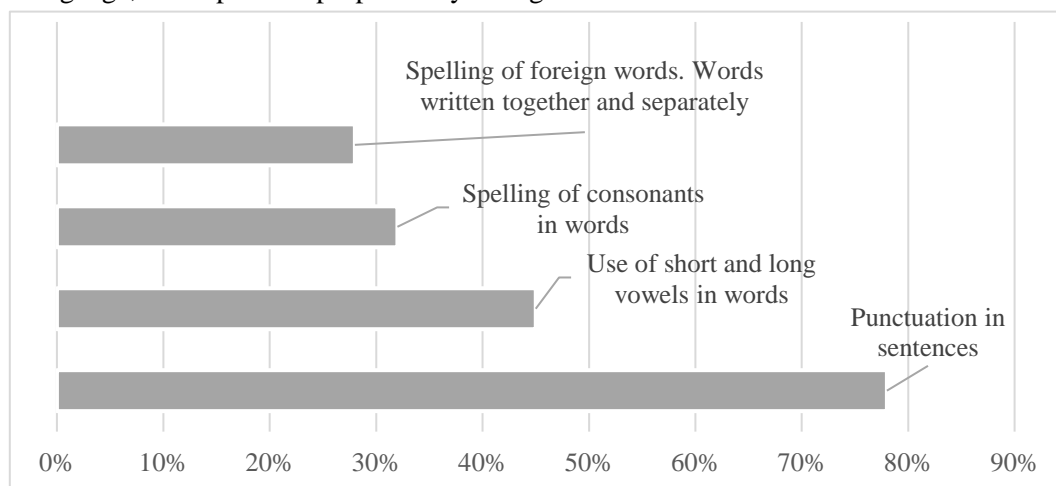
Figure 2. The most common language errors in terms of frequency.

The results of the research allow us to state that in the Latvian language didactics one should think more about a discourse-based language learning, in which the text first of all has the social context and not the linguistic form. Acquisition of grammar is not an end itself, but a means of the communicative purpose implementation.

In language learning, closely related to the acquisition of grammar regularity, knowledge of the world should also be improved. It is important for the student to see the relationship between discourse and the appearance of syntactic constructions, and the selection of words to reveal their knowledge and understanding about the particular issue (Celce-Murcia, Olshtain, 2000; Hughes, Acedo, 2016).

Development of language competence depends very much on the students' individual thinking abilities, their speed and depth, student and teacher's linguistic attitude. In the language competence acquisition process, it is important for every student to be the discoverer of language legitimacy in authoritative texts, self-created texts, and instructional texts which are used for the content acquisition of other subjects (Gavriļina, Špūle, 2018; Pētījums…, 2020) and the teacher's professionality is the base of such work.

Conclusions

- An individual's career development requires Latvian language competence that is able to provide successful interpersonal communication, convince of their knowledge and skills, deal with information, able to learn, create new ideas, manage a team, and provide business correspondence.

- Language competence is characterized by conscious or intuitive knowledge of the language system to make grammatically and semantically correct statements and implement the particular language function in a meaningful text. According to the criteria, the language competence of graduates from secondary education institutions is on a low level.

- Graduates do not always follow the style appropriate for the communication intent, proportions between the text parts, the principle of text completeness, paragraphs, also progress of thought in compliance with basic conditions of the text logic.

- Punctuation errors predominate among orthography and punctuation errors, long and short vowels, application of consonants in words, spelling mistakes of foreign words and errors of the words to be written together or separately.

- The level of language competence is influenced by the linguistic environment, attitude to the language as an economic and social value, as well as the didactics of the Latvian language.

- In the Latvian language didactics, language acquisition based on discourse should be highlighted, so that the grammar acquisition is not end in itself, but a means of the communicative intent implementation. More attention should also be paid to the pupil's critical thinking promotion, reasoned opinion expression based on facts, and ability to assess information from the credibility point of view.

- In order the graduate of a secondary education institution would be able to communicate in a multicultural environment, find a compromise or convince about their point of view, in the upbringing process it is essential to pay attention to the development of a tolerant attitude towards the different.

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Trends in STEM Teaching and Learning
within the Context of National Education Reform

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Abstract: STEM (science, technology, engineering, and mathematics) education nowadays is considered priority. To implement it successfully, students must acquire not only STEM "hard" skills, but also "soft" skills, therefore the choice of teaching/learning methods is essential. Problem-based (PrBL) and project-based learning (PjBL) aim both at the acquisition of science content using real life examples and the improvement of IT skills, critical thinking, decision-making, civil responsibility and cooperation skills. The aim of the research is to find out the use of PrBL and PjBL in the teaching/ learning of STEM in the context of national reform of Latvia. The design of mixed methods was used in the research. The correlative research was performed using *QuestionPro* e-platform and surveyed 128 STEM teachers and 257 secondary school students to collect quantitative data. As Latvia now is implementing the education reform, the case study for qualitative and quantitative analysis has been carried out using the AQUAD data processing programme and researching the secondary education biology basic course curriculum. This research identified that it was advisable to use practical cases, real everyday examples and project work that would increase students' interest in science subjects to enable them to solve problems creatively by integrating the content of all STEM subjects. The biology curriculum mainly stresses students' reproductive than productive work with information, the development of critical thinking by participating in discussions and cooperating, while not enough attention was paid to the use of problem solving in the teaching/ learning process and the implementation of the interdisciplinary project. The use of sensors, practical laboratory works and field study as specific methods of biology are little represented in the curriculum, which is a serious disadvantage. This means that the basic curriculum of biology in the context of national education reform is more oriented to the acquisition of transversal skills, not the development of competent science literacy.

Keywords: basic curriculum of biology, problem-based learning, project-based learning, STEM, school.

Introduction

Since September 1, 2020, schools of Latvia have been gradually implementing the new contents and approaches according to the new basic and secondary education standards (National Reforms…, 2020) which are developed by the National Centre for Education, Republic of Latvia, in the project "Competence-based approach in the teaching/learning contents" and implemented by Skola 2030. The aim of the project is to work out, approbate, and introduce sequentially such content and approach to general education in Latvia that would provide all students from preschool to secondary school graduates with knowledge, skills and attitudes necessary for the life of today (Skola2030, 2020).

At present, there are two approaches in implementing STEM in Latvia – the old and the new. The integrated course of science is taught in schools with the humanitarian direction, while usually each subject of STEM is taught separately in general comprehensive schools. There might be a situation in schools specializing in science/mathematics when one or two STEM subjects are taught at the advanced level. According to the new national education reform schools will choose the teaching/learning domains and which subjects will be taught on the advanced level. The new standard for general upper secondary education will offer three levels of curriculum (general, basic and advanced level). Approximately 70% of the time spent on acquiring the curriculum will be spent on compulsory content, while approximately 30% will be offered according to a future career path/educational pathway of the student (National Reforms…, 2020).

The education reform in Latvia is justified by the perception that children nowadays must learn to live in the continuously changing world and in the future, they should be ready to create an economic, political, social and culture environment not experienced before. At present, Latvian students can do very well those tasks that require memorization or action in well-known situations, but they lack skills and experience to investigate and process multifunctional data, work in a team, offer solutions to

non-standard situations, create relations between theoretically acquired and real-life experiences, analyse the completed and set aims for future tasks (Skola2030, 2020). The vision of education activates the context of 21st century skills such as soft skills and hard skills 1) transversal skills which are not directly connected to a specific domain but are important in many spheres; 2) multidimensional which incorporate knowledge, skills and attitudes and 3) are related to skills of higher level and behaviour that reflects the ability to deal with complex problems and unpredictable situations (Voogt, Roblin, 2012).

The National education reform is implemented to introduce innovations in four aspects of the science domain: (1) teachers' mutual cooperation in the implementation of interdisciplinary themes; (2) the use of information and communication technologies as a platform for developing problem solving and reasoning; (3) experimental learning, focussing on the process of discovery, is connected with the development of students' inquiry skills that are developed through practical activities, experimenting, modelling and searching for regularities; (4) discussion-based teaching: involvement in discussions and other activities for making socially responsible decisions (Andersone, 2020).

As defined in the basic course of *Biology I* curriculum (Bioloģija I…, 2020), students are offered different forms of organizing the study process: discussions, case studies, inquiry projects and practical works to develop the student's understanding about the processes in nature and society, the interaction of nature and society as well as to consolidate problem solving and communication skills. To attain the learning outcomes of the basic course which incorporate complex inquiry skills, including the skill to use IT tools (e.g., data processing, work with sensors, data storage, and different communication platforms) it is advisable to organise the work with computers.

To find out students' readiness for the changes anticipated in the reform, a case study on the implementation of problem-based and project-based learning was performed. The choice of these teaching/learning methods was defined by that fact that they could reveal most students' learning of STEM in the context of the national education reform, including student-teacher interdisciplinary cooperation, the use of information in problem solving and discussions for making socially responsible decisions and for demonstrating complex inquiry skills. Both these terms even have a common abbreviation PBL (problem-based learning and project-based learning) although their nature is slightly different. To distinguish the terms the authors use two abbreviations PrBL – problem-based learning and PjBl – project-based learning.

Many researchers believe that STEM promotes students' skills in problem-solving, critical thinking, collaboration, leadership, self-directed learning, communication, creativity and innovation, as well as analytical thinking, real environment and conditions (Asghar et al., 2013; Capraro, Capraro, Morgan, 2013). Using project-based learning can be an effective way to engage students in learning STEM and provide them with the basic skills they need to master STEM professions (LaForce, Noble, Blackwell, 2017). L.J. Berk, S.L. Muret-Wagstaff, R. Goyal, J.A. Joyal, J.A. Gordon, R. Faux and N.E. Oriol (2014) found that students who used PjBL in their learning had a more positive attitude towards STEM and were more likely to choose a career related to STEM.

One study of PjBL found that projects increase students' interest in STEM because they engage students in solving authentic real-life problems, collaborating with others, and producing concrete end products (Fortus et al., 2005). This will help students understand the relationship between circumstances and consequences. In addition, students will be able to answer questions such as, "Why do I have to learn this?" and "Where will I ever use it?" because the projects are real, engaging for the student and knowledge-based. The outcome of PjBL is projects that are authentic and include real life problem-solving and 21st century skills, students have the opportunity to see the connections between what is taught in the classroom and the application of such knowledge in real conditions (LaForce, Noble, Blackwell, 2017; Sahin, 2015). A recent study exploring the relationship including STEM high school students' perceptions of PjBL and their interest in STEM subjects and careers found that students' higher project-based learning scores are associated with greater interest in STEM subjects and careers. It means that PjBL as a teaching tool provides critical learning opportunities for students to develop an interest in STEM (LaForce, Noble, Blackwell, 2017).

Meaning "Project-based learning" is broader than "Problem-based learning", and often is composed of several problems that students will need to solve (Capraro, Capraro, Morgan, 2013; Siew, Amir, Chong, 2015). PrBL is a student-centred approach that enables learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a solution to a defined problem, as well as to develop

collaboration skills and intrinsic motivation (Hmelo-Silver, 2004; English, Kitsantas, 2013; Savery, 2006, 2015). PrBL and PjBL are two different approaches and people mistakenly assume them to be the same although they have a lot of similarities. PrBL approach is driven by the problem that is encountered by students and focuses on research and inquiry, whereas the PjBL approach is driven by the end product that students want to produce and the main focus is laid on the whole process of production. PrBL begins with a problem and that problem becomes the main focus in PrBL from which every progress, plan and work done by students in PrBL is directed towards solving the problems. On the other hand, PjBL begins with an assignment to carry out one or more tasks that lead to the production of a final product.

In any case, both these teaching methods in STEM learning are a challenge for students: they must think critically and analytically to develop higher-order thinking skills; it motivates their self-directed learning; they are interested in getting involved in science research; solving meaningful problems of the real world, linking theory with practice; creating cross-curricular connections and collaborating with classmates.

The aim of the study is to find out the use of problem-based and project-based learning in the teaching/learning process of STEM in the context of the national education reform.

Methodology

To reach the aim of the study two research questions were set:
1. How does the use of problem-based and project-based learning influence student's STEM learning?
2. How is problem-based and project-based learning integrated in the curriculum of the basic course of biology in the context of the national secondary education reform?

Research design. The design of mixed methods was used in the correlative research for gathering and processing quantitative and qualitative data. Results obtained from the questionnaire were analysed using the data processing SPSS 24.0 program, a method of non-parametric data processing – Spearman rank correlation analysis based on the discrepancy of the empirical distribution of data with the normal ($p = .000$). Qualitative data were analysed with AQUAD 7.0 program by coding the data, defining their frequency and creating linkages. Two adapted questionnaires of the ERASMUS+ project "International Diploma for School Teachers in STEM Education (eSTEM)" – one for teachers and the other for students – were used for data collection in the quantitative part of the study.

The data were obtained using open-closed questions on a 5-point Likert scale (1 – strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree) in the online platform of *QuestionPro*. The survey was structured in two parts: general and conceptual. The general part of the survey characterized respondents: teachers and students and the conceptual part used questions based on the theoretical ideas of the problem and project-based learning (Asghar et al., 2013; Capraro, Capraro, Morgan, 2013; Capraro, Capraro, Morgan, 2013; Fortus et al., 2005; LaForce, Noble, Blackwell, 2017; Sahin, 2015; Savery, 2006, 2015). Indicators describing PrBL and PjBL were developed. The Cronbach's alpha test on the scale of checking the credibility ($\alpha = 81$) proves a good internal consistency.

The research involved 128 teachers of whom there were female (n = 110) and male (n = 18) participants aged 20 to >70 years and 257 students, female (n = 161) and male (n = 96) who attended Grade 10 (n = 97), Grade 11 (n = 112) and Grade 12 (n = 48).

The secondary education basic curriculum in Biology was analysed in the qualitative part of the study. This program was chosen because the previous standard, still in force in secondary education, envisaged the same number of lessons (210) for all subjects: biology, chemistry and physics but the conception of the new standard envisages a twice smaller number of lessons for biology (to compare: physics – 245 and chemistry – 210 lessons) (Regulations Regarding…, 2019). The code system rests on problem-based and project-based learning in the context of innovation in national education reform. The data analysis uses themes of the teaching/learning program as profile codes but the conceptual codes describe problem- and project-based learning, the integration of interdisciplinary themes, discussion, experiential learning emphasizing the process of discovery experience or learning by doing, technologies, laboratory works and modelling as well as transversal skills – information literacy, critical thinking, problem solving, mathematical literacy and collaboration.

The study design is presented in Figure 1.

Mixed methods design	
Quantative correlative data	Qualitative correlative data
Teachers and students survey	Analysis of Biology curriculum

Criteria	Codes system		
Q2.2. Content usefulness in life	Profile codes	Conceptual codes	
Q3.5. Practical examples	/T1	[Col]	Collaboration
Q3.8. Project-based learning	/T2	[Cros]	Cross-curriculum
Q3.12. Problem-based learning	/T3	[Crt]	Critical thinking
Q4.13. Real-life example	/T4	[Inf]	Information literacy
Q4.14. Interest in STEM	/T5	[Inq]	Inquiry skills
Q6.3. Cross-curriculum	/T6	[Field]	Field works
Q6.8. Integrated approach		[Lab]	Laboratory works
		[Mat]	Mathematical skills
		[Mod]	Modelling
		[Prob]	Problem-based learning
		[Proj]	Project-based learning
		[Tech]	Technology
		[Vis]	Visualization
Data processing: SPSS 24.0	Data processing: AQUAD 7.0		

Figure 1. Study design.

Explanation of abbreviations: T denotes topics of the Biology Curriculum
T1. Environment and evolutionary changes of organisms (24 hours)
T2. Reproduction of cells (16 hours)
T3. Secrets of DNS (18 hours)
T4. Inheritance of features (10 hours)
T5. Immunity of the organism (15 hours)
T6. Functioning of the cell and organism (22 hours)

Results and Discussion

1. Findings of quantitative correlative study

The correlative study found out the mutual interconnection between students and teachers' opinions about problem-based and project-based learning and teaching.

1.1. Teachers and students' views on the impact of PrBL and PjBL on the teaching and learning of STEM

The results of Spearman's correlation analysis prove that for students the solution of creative problems using the appropriate content and skills related to all four areas of science subjects (Q16.3 – a question for teachers, $N = 128$) correlated statistically significantly with the use of project work in the acquisition of the content (Q3.8, r (257) = .77, $p < .001$; $M = 3.25$; $SD = 0.96$), the use of practical, concrete everyday examples in lessons (Q3.5, $r(257)= .75, p < .001$; $M = 3.29$; $SD = 0.96$), the solution of real life problems, verifying them, making decisions and applying them (Q4.13, $r(257) = .73, p < .001$; $M = 3.38$; $SD = 0.97$), student's interest (Q4.14, $r(257) = .70, p < .001$; $M = 3.23$; $SD = 1.01$) and the use of the integrated approach in assessing the use of problem situations and projects (Q6.8, $r(257)= .69, p < .001$; $M = 3.15$; $SD = 0.87$). (Table 1).

Table 1

Teachers and students' opinions about the creative solution of problems using the appropriate content and skills from all four STEM areas

Criteria	Spearman's rank correlation coefficient r ($p < .001$)				
	Q3.5.	**Q3.8.**	**Q4.13**	**Q4.14**	**Q 6.8**
Q16.3	.75	.77	.73	.70	.69

Thus, students admit that to learn creatively, it is necessary to use the respective content and skills from all four areas of the science subjects, based on the use and integration of practical, real life examples in project-based and problem-based learning, thus increasing students' interest in STEM subjects.

The above-mentioned correlations show that as indicated in *Biology I* curriculum (Bioloģija I…, 2020), it is important for the student to deepen the understanding about the processes in nature and society, the interaction between nature and man, and to apply in an integrated way the problem-based and project-based learning, focusing on real life examples in the acquisition of the content.

1.2. Students' opinions about the impact of PrBL and PjBL teaching and learning of STEM

As presented in Table 2, there is a close positive reciprocal correlation between project-based learning (Q3.8, $r(257) = .83$, p < .001; $M = 3.25$; $SD = 0.96$) and problem-based learning (Q3.12, $r(257) = .83$, $p < .001$; $M = 3.53$; $SD = 0.83$) in acquiring STEM teaching/learning content. In students' responses, project-based learning (Q 3.8) positively closely correlated with the applicability of teaching/learning content in everyday life (Q2.2, $r(257) = .76$, $p < .001$; $M = 3.98$; $SD = 0.97$), the use of practical examples (Q3.5, $r(257) = .73$, $p < .001$; $M = 3.29$; $SD = 0.96$), the solution of real life problems, their verification and decision making in lessons to expand student's knowledge about science and mathematics (Q4.13, $r(257) = .84$, $p < .001$; $M = 3.38$; $SD = 0.97$) as well as with increasing students' interest (Q4.14, $r(257) = .77$, $p < .001$; $M = 3.23$; $SD = 1.01$) and with using the integrated approach in assessing problem situations (Q6.8, $r(257) = .75$, $p < .001$; $M = 3.15$; $SD = 0.87$). The arithmetic mean (*M*) is above the mean value on the 5-point Likert scale; the standard deviation (*SD*), too, shows some dispersion of the data, thus, it means that students' responses are rather similar. An analogical situation is seen in problem-based learning (Q3.12).

Table 2

Interconnection of students' responses to questions about project-based and problem-based learning

Criteria	Spearman's rank correlation coefficient *r* ($p < .001$)					
	Q 2.2.	Q 3.5.	Q 3.8.	Q 3.12.	Q 4.13.	Q 4.14.
Q 3.5.	.81					
Q 3.8.	.76	.73				
Q 3.12.	.69	.80	.83			
Q 4.13.	.70	.82	.84	.69		
Q 4.14.	.70	.72	.77	.77	.79	
Q 6.8.	.82	.85	.75	.80	.71	.83

Thus, teachers and students assess positively the use of project-based and problem-based learning in the acquisition of STEM because the use of practical real-life examples increases their interest in learning STEM and gives a possibility to acquire these subjects in an integrated way. J.M. Ritz and S.C. Fan (2015) consider that knowledge acquired in STEM subjects is most useful in everyday life. It is especially important to use real life examples in the acquisition of STEM (Capraro, Capraro, Morgan, 2013; LaForce, Noble, Blackwell, 2017; Sahin, 2015). Project-based and problem-based learning are suggested as one of the best pedagogical approaches for their integration in the teaching/learning process (Nistor et al., 2018).

2. Findings of the qualitative study

Analysing the curriculum of the basic biology course, its content was coded according to the codes indicated in the methodology, the frequency of the used codes was identified and then using the choice of the linkage construction, the reciprocal connections between the used codes in the analysed fragments of texts were determined.

2.1. Usage of problem- and project-based learning in the biology curriculum in the context of national reform

As seen in Table 3, the curriculum places the greatest focus on the development of critical thinking for formulating one's personal opinion, discussing it based on arguments and mutually collaborating. Gaining information is more directed to its search, e.g., students search for information, get acquainted with information and its sources, obtain information, and update it, not on the evaluation of the information: evaluate, analyse, substantiate and judge. Yet, it is not clear what searching for information in reliable sources means. These data, to a certain extent, coincide with the conclusions drawn by R. Andersone and I. Helmane about media literacy in the basic school curriculum stating that "finishing

Grade 6 the skills to find information in different sources and to analyse the found information are developed purposefully and their development continues until the end of Grade 9" (Andersone, Helmane, 2019, 20). However, the development of the skill to evaluate the credibility of information is little paid attention." Essentially, students need to develop skills to differentiate real information from false information (Anspoka, Kazaka, 2019).

Table 3

Frequency of codes in the biology curriculum

Code	Explanation	T1	T2	T3	T4	T5	T6	Total
[Col]	collaboration	3	9	11	6	6	2	37
[Cros]	cross-curriculum	2	0	1	0	1	1	4
[Crt]	critical thinking	12	18	13	17	16	6	82
[Inf]	information literacy	4	10	7	12	19	12	64
[Inq]	inquiry skills	1	1	0	0	0	4*	6
[Field]	field works	2	0	0	0	0	0	2
[Lab]	laboratory works	0	0	0	0	1**	1	2
[Mat]	mathematical skills	0	1	0	1	1	0	3
[Mod]	modelling	2	0	3	3	4	1	13
[Prob]	problem-based learning	0	0	0	1	0	0	1
[Proj]	project-based learning	0	0	0	0	0	1***	1
[Tech]	technology	6	0	1	2	3	2	14
[Vis]	visualization	4	10	5	8	9	6	42

* practical inquiry activity is not mentioned, but aspects connected with the bioethics of using animals in research are discussed
** simulation as a laboratory work
*** interdisciplinary project in chemistry

The use of inquiry is more theoretical because there are very few practical tasks (one interdisciplinary field study and several tasks on using modelling in practice). It is recommended to use technological possibilities in visualization – watching media, video, animations, simulations and the use of different schematic possibilities (diagrams, schemes) for structuring information while at the same time the biological drawing is used rarely. Science specific technologies are very little recommended, e.g., sensors are used only in one practical task. The study performed by R. Birzina and T. Pigozne (2020) also proves that such science-specific technologies are little used or not used at all. It means that a significant role is not assigned to the use of modern technologies in the teaching / learning process, which allows the learner to perform specific tasks flexibly and individually (Andersone, 2017).

Yes, the curriculum of basic *Biology I* (Bioloģija I…, 2020) states that it aims to develop inquiry skills, collaborating in practice, experimenting, modelling and concluding, yet a more detailed analysis of the curriculum does not confirm it. There is also no evidence about acquiring the experience of solving complex, authentic science and technology-related problems and working on long-term interdisciplinary projects and making primary mathematical calculations although it has been indicated that performing the field study students acquire skills to work with primary data. According to the research of D. Cedere, R. Birzina, T. Pigozne and E. Vasilevskaya, the new generation of students is oriented towards active and practical involvement in the learning process, which is little provided by the curriculum of *Biology I* (Cedere et al., 2020).

As regards the integration of the following transversal skills in the curriculum (National Reforms…, 2020), it has to be mentioned that the main emphasis is laid on information literacy, critical thinking and collaboration when assessing societal well-being, modelling situations and giving arguments for personal opinion, developing the habit of evaluating the reliability of information sources (Bioloģija I…, 2020). However, PrBL contributes not only to the development of content knowledge, but also to a wide range of skills such as communication and collaboration skills, decision making, problem solving, critical thinking and self-directed learning (Wilder, 2015, 414), which also includes the mentioned transversal skills.

Acquiring science knowledge is a long process that requires both subject knowledge and training in how this knowledge is structured. Therefore, a significant amount of content and practical work in the

laboratory is usually required (Winberg et al., 2019). Although the authors apply this to higher education, it is also important in secondary education. Biology is the most complex of all scientific disciplines because living systems are integrated into many hierarchical systems and related to the social sciences (Lamanauskas, 2016). J.A. Ejiwale (2013) points to the badly developed teaching/learning content of the curriculum, discrepant guidelines, selecting inadequate teaching/learning methods and the assessment form as well as the lack of hands-on training for students as obstacles in the acquisition of STEM.

2.2. Constructed relations

To find out the reciprocal relations between codes and text fragments, linkages were constructed.

Linkages were not stated between
1. Problem-based learning [code Prob] – Inquiry skills [code Inq] - Laboratory works [code Lab];
2. Inquiry skills [code Inq] – Laboratory works [code Lab] – Mathematical skills [code Math];
3. Modelling [code Mod] – Technology [code Tech] – Visualization [code Vis].

As the code frequency (Table 3) shows, problem solving actually is not connected with the use of inquiry and laboratory works in the biology curriculum, which confirms that problem solving is more theoretical than practical when students learn about a subject through the experience of solving an open-ended problem found in the literature (Barak, 2020). Probably, it can be explained by the fact that the biology curriculum anticipates only one laboratory work, two microscopy works, one interdisciplinary field study, two field works (not mandatory) and does not emphasize the use of mathematical calculations.

It is stated that there is a connection (Figure 2) between students' collaboration, information literacy and critical thinking as well as between problem-based learning, information literacy and critical thinking. It means, as proved also by R. Andersone's (2020) conclusion, that student's information literacy is important for developing problem solving and reasoning; however, problem solving is very little used in the biology curriculum. The present analysis of the curriculum shows that by decreasing the number of lessons in biology from 210 in the previous standard to 105 lessons in the new standard, it is not possible to attain all learning outcomes set in the biology curriculum if only schools in determining a flexible number of lessons do not exercise their right to change the number of lessons by 10-25 % (National Reforms…, 2020) and the choice of methods is considered the teacher's priority.

Collaboration [code Col]	Problem-based learning [code Prob]
↕	↕
Information literacy [code Inf]	Information literacy [code Inf]
↕	↕
Critical thinking [code Crt]	Critical thinking [code Crt]
22 confirmations	1 confirmation
Example	Example
Looking for information [Inf] on gene doping, argues [Crt] about the purposes and consequences of gene doping. Form own opinion [Crt] about gene doping. In pairs / groups [Col] structures [Crt] information [Inf] about gene therapy and stem cells and their role.	Analyzes [Crt] the risks posed by different routes of infection and prevention options to reduce the risk of infectious diseases, justifies its actions in maintaining health, modeling and evaluating problem situations [Prob] using information sources [Inf].

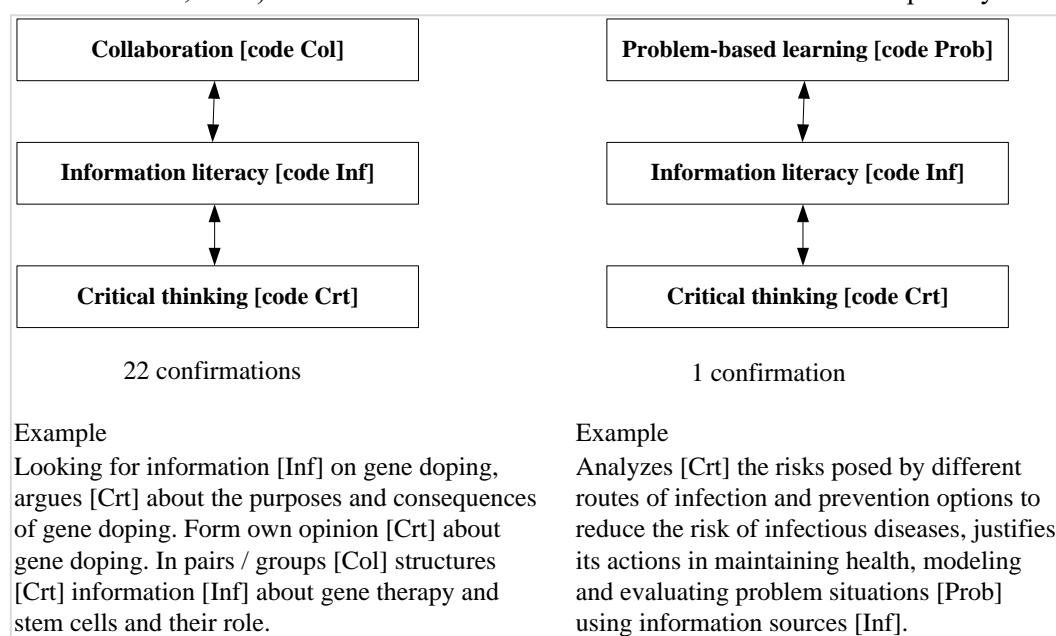Figure 2. Constructed linkages (within a distance of maximally 5 lines of text).

Conclusions

Teachers and students consider that project-based and problem-based learning are significant in science teaching and learning. Such an approach in the teaching/learning process ensures an integrated acquisition of science content and, using real life examples, increases students' interest in science.

The results of the qualitative study show that it is not possible to attain all innovative aims set by the national education reform with a decreased number of lessons in the curriculum of the basic biology course. The curriculum is mainly oriented to soft skills – gaining information, developing critical thinking, participating in discussions and promoting students' collaboration, with little using problem-based and project-based learning. A serious drawback is the fact that it does not offer the use of methods acquiring skills specific to biology: there are few practical, inquiry and laboratory works (only one in all biology course) Thus, if a student chooses to learn the directions of other study domains in the secondary school then his education level in biology will be insufficient to be science-literate in biology in the future. This issue is topical also in the situation of today's Covid19 pandemic. Probably, this problem can be partly eliminated already in the secondary education process if schools themselves design their curricula according to the teaching/learning standard with a considerable improvement of the biology curriculum. The students can encounter problems also in the development of his/her further career. If they after graduating from the secondary school, having not acquired biology on an advanced level, decides to study the field that requires biology knowledge, then it will be rather difficult to study with just what has been acquired in the basic course. This means that universities already today have to think about developing levelling biology study courses for the student to study successfully.

The results gained in the study prove that there is a gap between students and teachers' opinions on how problem-based and project-based learning affect STEM learning and teaching and the offer of teaching/learning methods used in the present basic biology course. The question remains open – will other basic science courses with a greater number of lessons promote the development of science literacy?

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Video Sketches as a Means of Introducing Blended Learning Approach in Teaching Foreign Languages at Technical Universities

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Abstract: The topicality of the article is determined by the widespread use of blended learning approaches in higher education, especially in studying foreign languages. With the limited number of classroom hours proposed for teaching foreign languages at technical universities, it became very relevant to introduce various alternative out-of-class monitoring methods. The aim of the research is to investigate the effectiveness of introducing video sketches as the way to improve the process of foreign language studying at technical universities. The authors assume that recording video monologues could facilitate students' speaking abilities, reduce the level of their anxiety compared to delivering monologues in class and could stimulate the effective use of classroom hours for teaching foreign languages. To prove this hypothesis the authors of the study conducted an experiment in Peter the Great St. Petersburg Polytechnic University during the autumn term of 2019-2020 academic year with the total number of 232 participants randomly chosen from 1-course students of technical specialties with different levels of English language proficiency. The possibility to record a monologue instead of delivering it face-to-face was considered as the IV (independent variable) of the experiment. Such research method as an open-close questionnaire was used afterwards to identify the students' satisfaction with the proposed alternative as well as the analysis of the exam results at the end of the course. These results as the part of the students' academic performance represented the DV (dependent variable) of the experiment. The obtained data showed that students of the experimental group passed their exam significantly better than the students of the control group. Thus, the present survey proved that students of the experimental group would prefer to record video sketches instead of delivering monologues face to face and that making video monologues improved their fluency and helped overcome some psychological barriers. On the basis of the research and the results obtained during the experiment, the authors conclude that the application of video monologues in the process of teaching foreign languages is highly promising.

Keywords: university education, information technologies, blended learning, out-of-class monitoring.

Introduction

In the modern system of teaching a foreign language at the university, the tendency to use various means of information and communication technologies is becoming extremely relevant (Porozovs, Dudkina, Valdemiers, 2019). As the system of higher education has developed, the use of computer and Internet technologies seems to be highly promising, as it allows teachers to modernize the learning process, increase students' motivation, and consequently use classroom hours for foreign language studying more productively.

During the studying process, the transition to a blended learning system is carried out using a variety of Internet technologies, involving all kinds of online courses and various extracurricular forms of control. At the same time, it is necessary to maintain interaction between a teacher and students, introducing a learner-centred approach in teaching a foreign language.

This article describes one of the forms of control within a learner-centred approach using information and communication technologies (video sketch) and substantiates the relevance of its use in foreign language teaching in a technical university. Thus, the main tasks are to introduce a video monologue as a way to overcome these psychological barriers and implement the ideas of out-of-class monitoring and blended learning in studying foreign languages. The basic interest of the present research is highlighted by the experiment organized in St. Petersburg Polytechnic University of Peter the Great to compare face-to-face presentation of a monologue in video format with recorded monologues (video sketches) and to verify the effectiveness of the letter based on the students' progress results and their reviews and comments.

Blended Learning

Blended learning is considered to be one of the most fast-growing major tendencies (Garrison, Kanuka, 2004; Wright, 2017; Huang, 2019) and is described as "the single greatest unrecognized trend in higher education today" (Young, 2002, 2). Many researchers admit that blended learning has already become "common place educational strategy in higher education" (Gikandi, Morrow, Davis, 2011, 2333) and would become 'inevitable step for all universities' (Garrison, Kanuka, 2004, 104). One of the first scientific definitions of 'blended learning' was proposed by C.R. Graham: 'Blended learning is the combination of traditional face-to-face and technology-mediated instruction' (Graham, Woodfield, Harrison, 2013, 4). D.R. Garrison also defined blended learning as 'the thoughtful integration of classroom face-to-face learning experiences with online learning experiences' (Garrison, Kanuka, 2004, 96).

The authors of the present article prefer to apply the term 'blended learning' to indicate that there is a mixture of traditional face-to-face or in-class lessons and an online format of fulfilling home assignments as out-of-class monitoring. Whereas some researchers estimate that via blended learning approach '30–80 % of learning/teaching activities are conducted through web-based ICT' (Gikandi, Morrow, Davis, 2011, 2336), the present article refers blended learning as a digitally enhanced type of control, while mostly studying process is accomplished in a traditional format. In addition, according to the statistics obtained in St. Petersburg Polytechnic University in 2019 more that 50 % of undergraduate and graduate students were engaged in e-learning (Bylieva et al., 2019).

Turning to the benefits of the blended learning approach the authors can state that it generally 'harnesses both face-to-face learning and online learning' (Friesen, Lowe, 2012, 375). Nowadays researchers distinguish such advantages of applying blended learning practices in the universities as: the increase of student's motivation; the ability to monitor individual student's path; the ability of self-monitoring and the rise of self-regulation and self-realization (Abakumova, Ivanova, Polyakova, 2019; Odinokaya et al., 2019a; Odinokaya et al., 2019b).

The authors of the article studied a range of scientific works dedicated to the students' attitude to blended learning approach (Wright, 2017; Baranova et al., 2019) and the authors can assume that students' perception and their positive emotions are of crucial importance. Most researchers find that students have greater level of satisfaction with blended approaches compared with both face-to-face and online formats (Owston, York, Murtha, 2013). R. Owston suggests that along with the ability of higher level of autonomy in regulating their learning, students still have the opportunity to develop a strong learning community and promote close associations with each other. The experiments showed that the use of blended learning has a positive effect improving exam marks, therefore, the authors of the present study decided to organize an experiment during the autumn term which ends with the exam on the Basic course of English as a foreign language and compare the results afterwards. Furthermore, the use of ICT could improve self-regulation 'as a necessary pedagogical condition for the successful professional self-realization of students' (Odinokaya et al., 2019b, 150).

For the recent 5 years the topic of blended learning in higher education is still on the rise. Special importance of the present study is connected with researches dedicated to the use of blended learning in teaching English as a foreign language especially in technical universities (Almazova, Andreeva, Khalyapina, 2018; Sumtsova et al., 2016). The researchers discuss such basic problem as the 'lack of academic hours allocated for learning foreign languages in technical higher schools' (Sumtsova et al., 2016, 335). However, there is a lack of researches about blended learning approach concerning the use of ICT as a form of control or out-of-class monitoring such as video sketches or monologues, thus this topic should undergo further investigation.

Monologue

The monological skills formation is regarded as a basic activity in foreign languages learning at the technical university. Being an intermediary between productive activities such as writing and spontaneous speech it forms the fundamental skills that will lead to the further effective nonprepared utterance (Pérez-Llantada, 2003). The success of the monologue and skill formation is determined by detailed instructions (Lee, Muldner, 2020).

The use of video techniques has a set of beneficial features both for students and teachers. First of all, this approach makes a student be more focused on the content and structure of a monologue (Frobenius, 2011). In this case, the student can only rely on his own efforts and, therefore, the students improve the ability to be responsible for the results of their work and the desire to make it more qualitative. The process of forming skills is accompanied by students' cognitive activity intensification (Holubnycha, 2016). As a whole, students' motivation to learn a foreign language is growing (Ivanova, Ivanov, 2016).

In addition to the fact that students are more attentive to the contents of the monologue, they also become more responsible for the grammatical, lexical and pronunciation components of the speech, the quality of the presentation has been improving. Furthermore, students have the opportunity to make several records of their video sketch if they notice any errors in their speech. Thus, the possibility of self-monitoring, self-checking and self-assessment is possible (Rich, Hannafin, 2009; McDonald, 2010; Odinokaya et al., 2019a). The problem of self-control seems to be very relevant and significant in the process of teaching foreign languages. According to authors' ideas, the ability to evaluate yourself, to determine your own shortcomings and correct them, which could be done while watching your own video monologues, helps students to achieve a higher level of development of self-learning competency, without which educational activity is unthinkable today.

The ability to re-record a video sketch helps students to withstand some psychological difficulties that may arise when a student presents his monologue directly to the teacher. There is a category of students who are afraid of making mistakes, afraid of failure or experience severe stress and, therefore, they deliver the oral speech much worse than they could have done it in a more relaxed atmosphere. Recording a monologue at home, understanding that in the case of a failure they can re-record it, students, if they wish, can achieve an ideal variant from their point of view. This way a teacher can help such students overcome possible psychological barriers (Ahmad, Shaharim, Abdullah, 2017; Hall, Walsh, 2002).

Provided that the student records a series of video monologues on various topics covered during the term, you can clearly trace the student's progress, thereby motivating him for further development and success. Finally, the use of video sketches in teaching foreign languages helps to implement a learner-centred approach in teaching (Roter et al., 2004). A learner-centred approach implies such an organization of the studying process according to which the choice of methods, forms, techniques and teaching aids is carried out considering the individual characteristics of the students. The teacher may pay more attention to this version of a monologue, he can re-watch some passages that he could not immediately understand which is impossible to do when a student presents a monologue 'face to face' (Odinokaya et al., 2020). The teacher has the opportunity to write a report on a particular video sketch and send it to the student individually. The student, in turn, can also be more responsible about his mistakes to avoid them in the future.

Despite the undeniable advantages of using a video sketch as a form of control, there are some difficulties that a teacher may face (Kemp et al., 2014). First of all, these are technical constraints. Students do not always have the possibility to record their monologue; therefore, this form of control should not be positioned as a mandatory one. The student should always be given a choice of how he can present his speech - in the traditional face-to-face format or in the form of a video sketch. It could be noted that this approach in presenting a monologue should be considered as a supplementary tool in the educational process. It is important to maintain a lively dialogue between students and the teacher in the foreign language classes, as well as to develop the ability to deliver a speech in front of a large audience. The use of video sketches enables the teacher to take on a new role, but it should not replace the live communication that occurs during classroom hours.

Video sketches as a way to overcome psychological barriers and reduce foreign language anxiety.

The psychological barrier is defined as everything that hinders, restrains, and eventually reduces the effectiveness of studying and personal development (Ivanova, Burakova, Tokareva, 2020, 151). This barrier is not only a particular state of the psyche, expressed by disability to assess and control emotions as well as mental processes. It is also a pedagogical phenomenon, arising while solving educational tasks and overcoming these barriers as a part of a task can be viewed as a means of developing the student's personality. Psychological barriers as a whole are generally referred to as 'foreign language

anxiety' in various resources. Researchers distinguish different types of FLA such as 'fear of negative evaluation, communication apprehension, and negative attitudes toward English language class' (Alrabai, 2015, 163) and many others, but in the case of the present study the most relevant one is communicative anxiety. This type of anxiety is mostly associated with oral performance and 'oral class activities' (De Saint Léger, Storch, 2009). Mostly researchers admit that in this case the level of anxiety depends on various factors, with 'self-confidence in speaking English, gender and proficiency playing an important role in classroom performance' (Matsuda, Gobel, 2004, 21). As speaking brings anxiety, and its level rises in stressful situations such as speaking in front of the class, authors consider that recording video sketches with monologues could help students avoid such stressful situations and reduce the level of anxiety. The authors hope that the implementation of video sketches in foreign language teaching will help reduce the level of foreign language anxiety as much as possible.

Thus, the aim of the research is to investigate the effectiveness of video sketches in improving the process of foreign language studying at technical universities as a means of out-of-class monitoring and blended learning approach.

Methodology

The aim is achieved by the following objectives: - through conducting a research experiment comparing the results obtained by control and experimental groups; - through organizing a questionnaire exploring the level of students' satisfaction with the proposed monitoring approach and studying the impact of applying video sketches on students' level of anxiety.

The authors of the present research put forward a hypothesis that recording video sketches could overall improve the level of students' English language mastery, especially their speaking abilities. Moreover, there arise such research questions as: - whether the application of video monologues could rationalize the use of classroom hours for this type of out-of-class monitoring; if this could reduce the level of anxiety, which some of the students suffer from when delivering a monologue face-to-face or speaking in public; - whether it could create closer teacher-to-student cooperation and give rise to intrinsic motivation for studying foreign languages.

Data and Participants

To verify the effectiveness of using video monologues as a form of monitoring the students' success in studying the material, control and experimental groups were selected during the autumn semester (September–December 2019). Both groups with the total number of 232 participants consisted of 1-course students of technical specialties (civil and mechanical engineering departments), approximately of the same age (18-19 year-olds). The authors didn't specifically choose the groups for the experiment – these were ordinary groups that were present at the time-table term, thus they were from different regions of the Russian Federation, mostly boys (73%), because of their specialties, and had different levels of knowledge of English.

Materials and Instruments

During the autumn term according to the program of the course 'The Basic Course, English' the students were to study four modules and prepare monologues for each module; thus, the group of authors from St. Petersburg Polytechnic University prepared the corresponding schemes for every monologue in the form of a table. The results of these efforts have been published earlier (Odinokaya et al., 2019b) and the present article used these findings as the most relevant ones.

To meet the vocabulary requirements and to get maximum scores for cohesion the students were also provided with the list of Basic Vocabulary for every monologue and the list of linking words which could be used in any monologue. According to the proposed criteria students had to use more than 75 % of the basic vocabulary (the use of advanced vocabulary and collocations was highly recommended as well) and not less than 10 different linking words for the best result.

Procedure

In the control group (with the number of 120 students), the students were proposed to prepare a monologue within the traditional face-to-face approach – to answer a monologue directly to the

teacher. Unfortunately, the students had to find the possibility to deliver their speech, since it was not possible to interview each student (120 students in the group) during the lesson. In accordance with the program, during the semester the contents of 4 modules of the textbook must be covered and a monologue must be prepared after each unit – 4 monologues, respectively.

Each monologue was evaluated at a maximum of 10 points, and students got a credit as the arithmetic mean of all four monologues altogether. As an alternative, students were asked to answer a monologue at the credit-lesson – students were supposed to prepare all four monologues for the credit, but would answer only one of them at random basis. It should be noted that the vast majority of students in the control group decided to present all monologues during the term, and only two of them decided to wait for the test lesson.

The experimental group consisted of 112 students, and they were given the opportunity to make video recordings of their monologues. The criteria for evaluating the monologues were similar in both groups. In the experimental group, students had the choice whether to make a video, to deliver a speech face-to-face to the teacher or as a credit at the last lesson. As a result, out of the total number of students, 96 students (86 %) decided to take the opportunity of sending video monologues, 8 students (7 %) decided to answer it to the teacher and the other 8 (7 %) left it for the test lesson.

The control group (with the number of 120 students), was proposed to prepare a monologue within the traditional face-to-face approach - to deliver a monologue directly to the teacher.

Results and Discussions

At the end of the semester, the authors conducted a questionnaire in the experimental group to determine how the students evaluate the effectiveness of video monologues in the process of learning a foreign language. In total, 112 questionnaires were received, and the following basic conclusions can be drawn based on their analysis (Figure 1).

All 112 questionnaires (A - 100 %) indicate that the video monologue recording helps students to increase the level of foreign language acquisition in general and to improve their speaking skills in particular. All 112 students (B - 100 %) noted that video monologues should be applied within the framework of a modern university, while two of the questioned students noted that this form of control should be carried out exclusively on a voluntary basis.

Figure 1. Evaluation of the effectiveness of video monologues in the process of learning a foreign language.

Of the total number of questionnaires, 96 students (C - 86 %) admitted that they preferred to make a video of the monologue, instead of answering it directly to the teacher and described this experience as a positive one, and only 16 of them (D - 14 %) answered that they would prefer face-to-face communication with the teacher. As for the reasons, they indicated: that they feel extremely embarrassed and uncomfortable while making a record; that their unsuccessful record will exist somewhere and disappoint the teacher; as well as the lack of free time to record a successful attempt.

The questionnaire contained a request to explain the reasons why, in students' opinion, the teacher

Figure 2. Reasons why, in students' opinion, the teacher applies this type of control in practice.

applies this type of control in practice (Figure 2). The most frequent answers to this question were: - since it is more convenient to record and evaluate a monologue, both from the teacher's and student's point of view (A - 57 %); - due to the fact that it is not possible to interview each student during the lesson, thus, to save time for the classroom activities (B - 36 %); - To stimulate the development of students' speaking skills
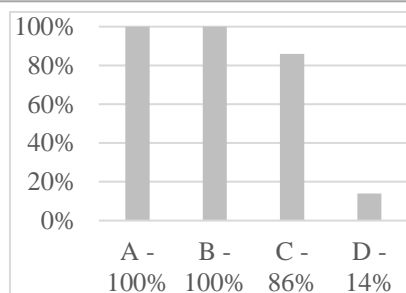
(C - 29 %); - to enable students to look at themselves from the different side, thereby stimulating the improvement of self-control (D - 22 %); - to implement an individual approach to each student (E - 14 %); - since this way it is easier for a teacher to assess the level of students' commitment (F - 14 %); - to help students overcome the language barrier (G - 7 %).

Students were also proposed to note the positive aspects of the video monologue recording that were important for them (Figure 3).

Based on the results of an open survey, the following answers were received: the possibility to make a different record of a failure attempt (A - 57 %); the possibility to record a video at any convenient time and at any place (B - 36 %); the possibility of self-control, analysis of their own mistakes (C - 36 %); the development of speaking skills (D - 36 %); less stress and anxiety compared to the traditional form of control (E - 29 %); the opportunity to look at yourself from the outside and assess your level of a foreign language (F - 29 %); the ability to prepare better for the recording of a video monologue (G - 14 %); a greater desire to improve, to make their records better with every new attempt (H - 14 %); improving the quality of understanding of the studied material, in particular key vocabulary from the module (I - 14 %); the fact that vocabulary is extending as a whole (J - 14 %).
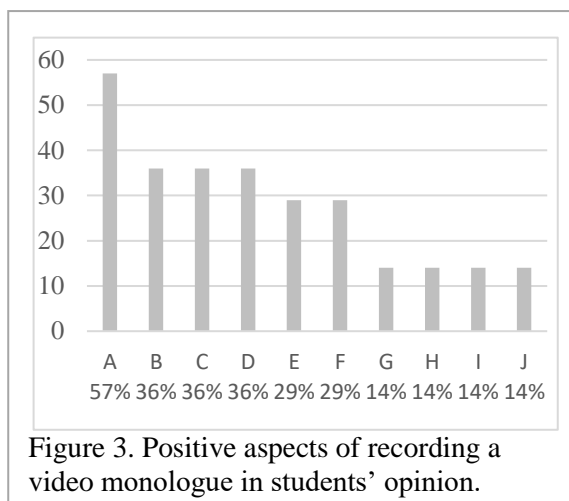
Figure 3. Positive aspects of recording a video monologue in students' opinion.

One of the most important points of the survey that should be considered are the problems that students faced during the recording of their monologues, since it is important to improve the application of video monologues as a form of control and try to overcome the possible difficulties (Figure 4).

As the most significant problems, the authors list: the inability to stay alone and to find a suitable place for video recording, as neighbours and surrounding people might interfere and interrupt you (A - 21 %); it is difficult to behave naturally in front of the camera, it is difficult to show emotions (B - 21 %); a great temptation to "cheat" using the notes (C - 14 %); it is unpleasant to look at yourself on a record (D - 14 %).
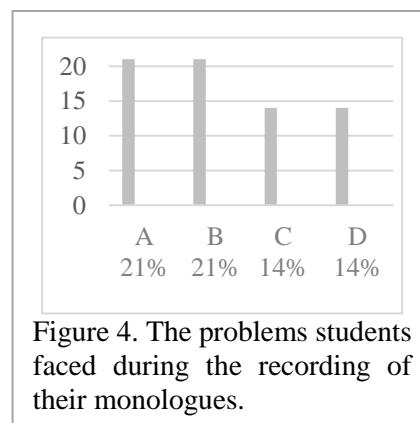
Figure 4. The problems students faced during the recording of their monologues.

After the experiment was over, the authors got the results of the exam, which both groups had to pass at the end of the academic year in summer 2020. The curriculum suggests that the exam for the Basic Course of English should consist of two parts: a monologue on one of the topics that students had been provided with in advance and retelling or summarizing of an article. Nevertheless, because of the COVID pandemic the whole educational process including the exams was carried out in the distance format and it was decided to change the programme according to the circumstances and to include only a monologue in the exam. As the exam was assessed within the 5-band criteria, the students could get the following scores for the monologue: 2 – as 'unsatisfactory', 3 – for 'satisfactory', 4 – for 'fairly good' and 5 – for 'excellent'.

As it can be seen from the Table 1, the students from the experimental group passed the exam significantly better than the students from the control group: the percentage of students who got 'excellent' mark in the experimental group is 21 % higher than those of the control group, and the distinction between the percentages of the students who got 'satisfactory' mark reaches 16 %. Overall, it can be seen that the percentage of the students who got a mark higher than 'satisfactory' is 93 % in the experimental group compared to 77 % in the control group. These data show that applying video monologues as the means of out-of-class monitoring could help students to get prepared for the exam better and there is a clear connection between general satisfaction with the course and the students' progress. The authors believe that this type of control will stimulate the speaking abilities of the students and foster their language proficiency in general.

Table 1

The Results of the Exam for General Course of English

Band	The Control Group	The Experimental Group
'2' – 'Unsatisfactory	0 (none) out of 120 (0 %)	0 (none) out of 112 (0 %)
'3' –'Satisfactory'	28 out of 120 (23 %)	8 out of 112 (7 %)
'4' – 'Good'	36 out of 120 (30 %)	28 out of 112 (25 %)
'5' – 'Excellent'	64 out of 120 (47 %)	76 out of 112 (68 %)

Besides the fact that these results based on our conducted research proved the effectiveness of the experiment, carried out at St. Petersburg Polytechnic University of Peter the Great during the standard academic term, it is worth mentioning that the recent COVID pandemic showed us that the application of video monologues could be especially useful in the conditions of totally online education when face-to-face presentation of a monologue becomes impossible. The data obtained from the experiment showed that this is a very promising alternative to the traditional way to present a monologue: the participants (1-course students of civil and mechanical engineering departments) expressed their positive attitude to video monologue recording, admitted the rise of their motivation to study a foreign language, and overall, the results of the research proved to be significant and showed that our hypothesis was correct. The authors hope that their experience could be helpful in any educational institution under any circumstances.

Conclusions

The main idea and topicality of the present research was to prove that recording video sketches with monologues as a form of out-of-class monitoring could facilitate the studying process of teaching English as a foreign language in non-linguistic universities. The basic problem of teaching foreign languages in technical universities nowadays is the lack of working hours for this discipline as well as the lack of intrinsic motivation of the students of technical specialties.

Despite the mentioned difficulties, considering the positive experience of applying video monologues as a form of control using information and communication technologies in the author's pedagogical practice, the authors can make a conclusion that this method ultimately helps to get students interested, increase their motivation, and engage them in the creative process, and thus make the process of teaching a foreign language more successful.

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Active Learning Methods for Sustainable Education Development

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Abstract: The growing importance of ICT in educational processes activates the development of modern electronic teaching aids in various content areas and the development of teaching methods. The integration of ICT must ensure the improvement of the teaching/learning environment and the development of new teaching/learning approaches. Students' motivation, engagement and interest in own learning are obligatory for successful and student-oriented education, especially in a situation of crisis, when educational institutions can immediately be closed after a governmental decision (pandemic caused by *"Covid-19"*) as it happened in March, 2020. All teaching and learning had been moved unexpectedly to remote/distance education setting, to adapt the learning methods and processes and to motivate the learners contributes to sustainable education. The aim of the paper is to develop active learning methods in digital environment to modernize the learning environment required for STEM in Vidzeme University of Applied Sciences, which includes the development of teaching methods and tools and their suitability for the digital age. The methodology includes theoretical research and practical experiments for full time students in face-to-face and digital environment. There are three experimental groups for course "Algorithms and data structures" – one for traditional teaching, one with active learning methods face-to-face classroom and one with active learning methods in digital environment. Results of the research shows that active learning methods influence positively to course results but there are no differences for course results between groups with active learning methods in face-to-face and digital environment.

Keywords: active learning methods, digital environment, university education, learning sustainability.

Introduction

Transition processes in the global economy and politics are ongoing; these include education, research and culture. Creation and usage of information has grown very rapidly over the last years. People have experienced such phenomenon as information overload. Work equipment becomes more complex and sophisticated. Accordingly, this requires more skills and knowledge to operate them. It leads to acknowledge that knowledge has become a highly valued asset. The digital transformation of the global economy and society is increasing the complexity of the modern world, as well as the speed of change, due to increased connectivity and an increase in the number of better educated individuals worldwide. These two elements—complexity and speed of change—mean that connecting education to the trends shaping the world we live in has never been so urgent (OECD, 2015). A way of obtaining new knowledge and skills already has been seen for a while as an actual aspect of university education and it shows no sign of losing its importance. Modern education system has difficulties in copying traditional teaching methods with unforeseen learning outcomes in the digital age and todays information systems and technologies provides large amount continuous development of digital tools opening possibilities for strengthening education system.

The problem is the inefficient or incomplete utilization of active learning methods and cognition technologies and the non-usage of knowledge management technologies in the study process. The paper addresses the active pedagogical methods in changing now-day pedagogic paradigm improving all forms of active learning in various settings – learning in classroom, blended learning, and e-learning. The paper focuses on educational methods that enhance each individual's ability to acquire the knowledge, values and skills needed to participate in decision-making on individual or collective action at local and global levels to improve the quality of life without compromising the needs of future generations. Teaching materials and methods in the digital environment would ensure the rapid and secure introduction of new knowledge, as well as the mutually beneficial exchange of data and knowledge, which is the key to the sustainable provision of education. Active learning methods develop learners' ability to respond flexibly in a competitive environment.

The aim of the paper is to develop active learning methods in digital environment to modernize the learning environment required for STEM (science, technology, engineering and math) in Vidzeme University of Applied Sciences. The paper leads to the development of a new approach to active learning in information technology, a tool to support methods and research into knowledge discovery from active learning user feedback data in support of the new learning methodology.

Methodology

Experiments on active learning methods were used in Algorithms and Data structures course and Statistics for Engineering for information technology bachelor students in Vidzeme University of Applied Sciences. To make experiments comparable and results generalizable, all cases are analysed according to a common methodology. Specifically, an extension of knowledge discovery based active learning feedback data for active learning methodology support in teaching and learning process. Implementing active learning methods in developing mobile applications via collective coding exercises in the classroom as a part of an active learning strategy and development exercises.

The main tasks of the paper include theoretical and experimental research of active learning methods in the digital environment, experimental testing and knowledge discovery from active learning user feedback data for active learning support. Students will become more adaptable in an ever-changing society characterised by higher visual literacy skills, great complexity, and technological advances learned by active learning methods.

Experiment includes learning through experience and active participation based on collective coding (by VIA student cods) exercises, quizzes, projects, and other approaches. Learning through experience in software development courses are carried out as practical tasks during collective exercises developing solutions. Work on software development exercises is performed in small groups with learning feedback data being regularly gathered in several ways to serve later as feed-in during the knowledge discovery process for active learning support. The teaching/learning methods will be explored in the experiment of three different groups of high practical value in Vidzeme university of Applied Sciences- one for traditional teaching, one with active learning methods face-to-face classroom and one with active learning methods in digital environment. There were 161 students participating in the experiment from 2016 -2020. Basic concept of research approach is shown in Figure 1.
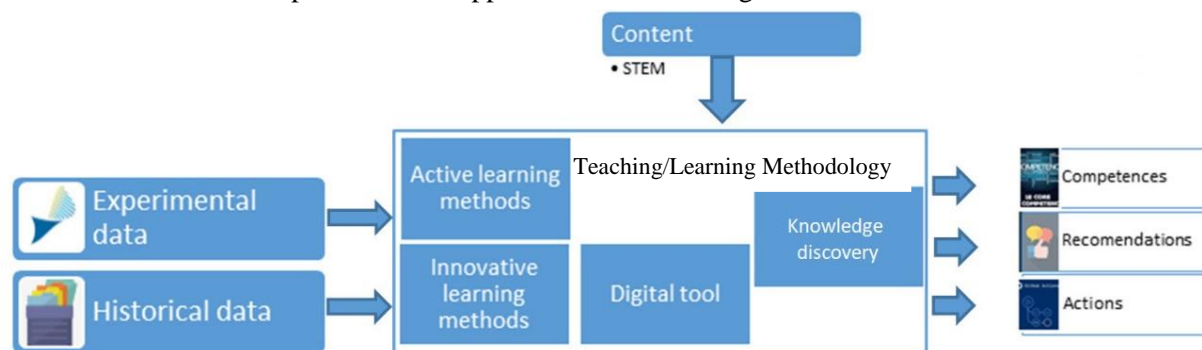
Figure1. The key concepts of the research approach.

As a content base was used Algorithm and data structure course for information technology students to develop active learning methods in digital environment for developing skills to solve complicate problems in STEM subjects, to teach students to choose the most optimal data structures and their algorithms and to use them in practice in the software development process.

The learning solutions will allow students better understand STEM subjects including the aspects of what makes this knowledge resilient.

The experiment involves developing active learning classroom methods in technology-enhanced learning environment, preparing and analysing tasks in different subject areas for visual and schematic presentation, innovative and visual thinking and development of digital competence.

The traditional learning student group each face-to-face session contains lecture 1,5 hours and practical work 1,5 hours leading by professor solving different exercises. Course final grade combines from results of practical work, two tests, project work and exam.

Approach to study in both active learning groups is based on students' deep preparation for the next face-to-face or digital session 3 hours according to lectures schedule. All lecture materials in two different forms – presentation and video – should be studied before the session. Each session started with discussion about the topic clearing theory and debatable issues. After discussion students were used different active learning methods such as Dotmocracy, Fishbowl, Quescussion, Index Card Pass, Flipped Classroom, Complete Turn Taking, Respond, React, Reply, Round Table, Think-Pair-Share, Post It Parade including solving different exercises on an algorithm theory (Center of Excellence…, 2020, Flipped Classroom, 2020). Activity of each student were measured.

Course final grade combines from four activities – results in active learning methods, three tests, project work and exam. Feedback from students is considered.

Theoretical background

Learning is the cognitive process that we use to incorporate new information into our prior knowledge (Piaget, 1972; Carey, Zaitchik, Bascandziev, 2015). Learning occurs through very different things, such as eating a daily breakfast or walking through the woods that determine our behaviour or habits. Learning also occurs through socialization, where we gain new knowledge. Cognitive learning is the process of information processing that enters and changes our cognitive system (Cakula, Majore, 2019).

Students' motivation, engagement and interest in own learning are obligatory for successful and student-oriented education, especially in a situation of crisis, when educational institutions can immediately be closed after governmental decision (pandemic caused by "*Covid-19*") as it happened in March, 2020. All teaching and learning have been moved unexpectedly to remote/distance education settings, to adapt the learning methods and processes and to motivate the learners contributes to sustainable education. The trend of world education has shifted to a more explicit focus on "21st century skills" or transversal competencies (Care, 2017). The humanization, accessibility, openness and diversity of educational environment are the guarantee of the sustainable development of education. I. Katane, E. Katans and G. Vavere give a theoretical substantiation to the ideas of distance learning, what is related to the broadening of opportunities offered in connection to home education under home environment and international education or cross-border education (Katane, Katans, Vavere, 2012). Within this broad framework, education for sustainable development helps students examine and reflect upon their professional responsibilities, capabilities, and personal motivations (Mulà et al., 2017). Different orientations toward thinking about new technologies in education should be developed not just as tools or delivery systems, but as a set of resources and affordances that provide an opportunity to rethink our educational aims, methods, and institutions (Burbules, Fan, Repp, 2020). Technology-enhanced learning environments create flexibility and sustainability in education (Cakula, 2018). Active learning methods enable teacher- or student-generated new content (Kim et al., 2020). Despite concerns that the transition to distance learning could reduce pedagogical effectiveness, lectures remain the main teaching method in university classrooms. A. Shoufan has described his successful experience as working with students remotely in the MOODLE environment, using active learning methods in a digital logic design course in an electrical and computer engineering program, managing to ensure the full involvement of students. He supposes that today's learning technologies have the potential to make lectures as a method unnecessary by supporting student's active learning in the classroom (Shoufan, 2020).

M.P. Molina-Torres and R. Ortiz-Urbano suggest to use active-participatory method (Figure 1), aimed at transforming the role of the teacher in the direction of counselling and the increase of students' practical independent work role through their experience and critical thinking, as well as activating group activities that promote the development of responsibility-sharing skills (Molina-Torres, Ortiz-Urbano, 2020).

The outcome of feedback is information related to a task or process of learning that fills a gap between what is understood and what is aimed to be understood (Sadler, 1989). J. Hattie and H. Timperley proposed that feedback in higher education should answer three major milestones: defining what the goals are about, asking what progress is being made towards meeting the goals, and asking what activities need to be

undertaken to achieve better student performance (Hattie, Timperley, 2007). B. Briede and L. Peks represent a constructivist view – refusing to pass information from the teacher to student, and emphasize the importance of self-experience and reflection, thus meaningfully developing their methodological competencies, students develop their ability to control their learning, improve learning skills and assess their learning outcomes (Briede, Peks, 2014). The traditional lecture assessment involves feedback limited to marks, grades, or scores, this type of feedback has turned out to be less effective than more descriptive feedback (Brown, Peterson, Yao, 2016), therefore it is reasonable to research and develop a knowledge discovery-based active learning feedback data solution. The author' research planned active learning feedback data solution is grounded and influenced by professors' previous research.

Traditional Method	Active-Participatory Method
Passive and receptive students.	Active, constructive and critical student.
Individual and lone work.	Group and motivational work.
Transmissive teachers.	Teacher as guide and counsellor.
Individualism of the teaching staff.	Coordination of teaching teams.
Assessment limited to the final result.	Assessment of the process as an end in itself.

Figure 1. From the traditional model to the active participatory method
(Molina-Torres, Ortiz-Urbano, 2020).

Different types of digital learning technologies serving different types of learning will be applied in the pedagogical experiment (Table 1). These types will be combined to find the best possible combination of digital learning methods.

Table 1

Types of conventional and digital learning technologies (adapted from D. Laurillard (2012))

Learning through	Conventional technology	Digital technology
Acquisition	Listening to teacher's explanation, face-to-face discussion, reading books.	Digital technology will be used for online classes, watching animations/videos presented by the teacher. Discussion in digital environment
Inquiry	Text-based study guides, various resources suggested by the teacher.	Online advice and guidance by the teacher, digital tools to search for examples and solutions.
Practice	Practicing in the exercise book or workbook, practicing on the blackboard or whiteboard.	Simulations, designed task-specific interactive visual objects, online group work as assigned by the teacher.
Production	Producing own solutions of exercises (drawn by hand) and designs.	Producing own solutions of exercises (drawn by hand) and designs.
Discussion	Seminars, discussions in classroom, online discussion forums.	Discussion groups with shared online whiteboard, asynchronous discussions on the algorithm tasks, web-conferencing tools for online classes.
Collaboration	Working in pairs/small groups, using different active learning methods	Working in pairs/small groups, using online technologically supported active learning methods (forums, chat rooms, blogs, portfolios, wikis).

Nowadays, when Covid-19 pandemic and potential school lockdown is still actual, students in school might become less motivated and have difficulties in keeping their attention during the lessons, especially, if the topic is complicated or completely unfamiliar. Offering the study content in different learning forms enables higher level thinking and communication, using various systems of symbols, and develops visual literacy.

Digital visual literacy is one of the eight fields in digital competency, included in the European Competence Framework as one of the key competences for future citizens. However, technological literacies – digital reading and writing, information, and visual literacy – are primarily emphasized when talking about human functioning nowadays and in future. Traditionally educators have perceived text as the primary source of information, leaving images, diagrams, and schemes behind as less important.

However, during the last decades it has been proven that visualisation is necessary in various subject areas. There is a large amount of visual information elements constantly competing for our attention every day and everywhere – outdoor advertisements, mobile applications. Nowadays it is not enough if a person is simply print literate – one should become acquainted with the multiple formats of information.

Reading skills are important for the ability to solve various tasks in school and life. However, if reading skills are lower, students might have difficulty to follow the instruction and are less able to acquire knowledge. Latvian students reading skills, according to OECD PISA 2018 results (OECD, 2018) were lower than OECD average.

Multimedia learning theory (Mayer, 2010) proposes that there are situations where spatial relations or complex imagery can't be described by words as efficiently as necessary, and pictures are the only illustration in the case. Educational learning materials and methods should not be mainly based on texts and reading. To promote sustainable solutions for active learning, alternative teaching methods should be introduced (Wong et al., 2017). Flipped classroom, think-pair-share, pro-con-grid and others are used in experimental courses.

However, during Covid-19 pandemic it was clear that distance learning management was very fragmented from the technology-enhanced learning point of view. It has been decided by the Ministry of Education and Science to develop a common technological platform for schools for teachers' and students' ease of use for planning lessons, assigning tasks and giving feedback (Plāno veidot vienotu…, 2020).

Results and Discussions

Statistical data analyses used for collected data shows that in all tests project work, exam and final grade normal distribution has formed with probability level 95 % but not for activity in active learning (Table 2). The same situation is in each separate group. The mean is one of the main characteristics of the normal distribution therefore statistical t-tests will be used for evaluating course results.

There is a difference between traditional and active learning groups starting from the second test. The mean of Test1 for traditional 6.53, active learning classroom 6.58, digital active learning 6.23. Kolmogorov–Smirnov t-test for each two independent samples. The first test shows the same mean on probability level 95 % for all three student groups. Active learning method is a new approach for students therefore they need time to adapt the new learning style.

Kolmogorov–Smirnov t-test mean for test2, test3, project, exam and final grade shows difference on probability level 95 % between traditional learning and both active learning groups but there is not difference on probability level 95 % between active learning classroom and digital active learning. The higher degrees are for students in digital active learning classrooms and students from active learning and only then traditional learning. For example, final grades for digital active learning mean are 7.26 and for active learning classroom 7.07, then comes students from traditional learning with mean 6.53.

Table 2

Results of One-Sample Kolmogorov–Smirnov Test for Normal Distribution.

		Test1	Test2	Project	Exam	Final	Activity in active learning
N		161	160	157	161	161	100
Normal Parameters	Mean	6.37	6.13	7.76	6.40	7.08	1.87
	Std. Deviation	1.43	1.53	1.59	1.80	1.08	2.77
Most Extreme Differences	Absolute	.20	.13	.19	.10	.07	.36
	Positive	.09	.13	.14	.10	.07	.36
	Negative	-.20	-.09	-.19	-.09	-.07	-.25
	Kolmogorov-Smirnov Z	1.21	.79	1.15	.61	.41	2.19
	Asymp. Sig. (2-tailed)	.091	.568	.126	.854	.996	.00

There is also high correlation between activity in active learning and all course results (Table 3). The number of students is 100, they are active learning students from both groups active learning classroom and digital active learning.

Students who are more active in the learning process reached better results during the course and in final grades. The highest correlation is between activity in active learning and exam 0.882.

Table 3

Correlations in Active Learning

	Test1	Test2	Project	Exam	Final	Activity in active learning
Test1	1.000	0.460	0.575	0.521	0.678	0.529
Test2	0.460	1.000	0.557	0.504	0.654	0.517
Project	0.575	0.557	1.000	0.725	0.762	0.611
Exam	0.521	0.504	0.725	1.000	0.835	0.882
Final	0.678	0.654	0.762	.835	1.000	0.778
Activity in active learning	0.529	0.517	0.611	0.882	0.778	1.000

The question for discussion is about student feelings in all three groups. Students from traditional learning describe the study process for STEM subjects as very hard and teacher guidance is crucial. Students from active learning classrooms are more involved in the study process and cooperation with teachers. Students from digital active learning describe that they get tired faster than face-to-face classrooms and they need much more breaks during these 3h.

Conclusions

Focusing on nowadays pedagogical paradigms teaching and learning changes direction from "teacher to learner" to "learner to teacher". It means that student occurs in the system more actively and affect on the teaching methods and content. In the modern day, it is not possible to maintain sustainable competition in professional environment without improving practical skills and knowledge, which leads to increased popularity of active learning methods in education.

All forms of education, both full-time and part-time on place or remotely, are equally important and complement each other thus enriching culture of education, general experience of the learning individuals and broadening the learning environment of the individuals and the general public. Data statistical analyses also demonstrate the development of innovative learning methods and knowledge base extension.

The development of methods and available technologies increasingly affect development of sustainable society and determines tendencies in education thus changing the nature of further education.

Active learning methods in both: face-to-face and digital classroom strength of the results to be achieved.

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Linear Functional Graphs – a Data Arrangement and Visualization Tool for Linear Algebra

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Abstract: Visualization and mappings of mathematical data and transformations to geometric objects are important tools in any area of mathematics. Directed graphs have been used in linear algebra since D. König in the early 20th century. In this paper, we aim to give interpretations of such graphs and related data arrangements which project linear algebra to graph theory – definitions of linear functional graphs. The results were obtained by applying discrete modelling techniques to objects of linear algebra. Linear functional graphs can be used in linear algebra courses to teach the theory of linear mappings, matrix multiplication and determinants. This technique can make linear algebra learning visual and suitable for some learners.

Keywords: mathematical education, university education, visualization, linear mapping, matrix, directed graph.

Introduction

Background

University educators in engineering and most sciences must constantly work on improving the educational process and content for all levels and ages (Eurydice Brief, Modernisation…, 2014). An important study discipline requiring continuous methodological effort is mathematics (PISA 2021 Mathematics…, 2021; Zeidmane, Sergejeva, 2013; Zeidmane, Rubina, 2017; Zeidmane, Rubina, 2018; Li, Schoenfeld, 2019). Its course concepts, methods and teaching processes must be updated and made effective (Kopeika, Zvirgzdina, 2020; Sergejeva, Aboltins, 2020).). Diversification of arrangements of numerical data (Daugulis et al., 2020) and visualization of mathematical objects are important educational and practical techniques. Such techniques are often related to encoding and coordinatization of mathematical objects, projection of derived mathematical objects to more fundamental ones. Many areas of mathematics have developed suitable visual models of objects and transformations using Euclidean geometry and graphs. The Euler–Venn diagrams and functional graphs can be mentioned as simple well-known examples.

An important branch of mathematics is linear algebra. It is a major practical tool used to model and solve engineering problems in all areas and scales from purely technical to social ones.

EXAMPLE 1. The example given by P. Daugulis (2012) is used. Suppose you are given a set of workers $A = \{a_1, …, a_m\}$ and a set of tasks $B = \{b_1, …, b_n\}$. Suppose each worker has performed each task and the performance time has been measured. Denote by t_{ij} the time in which the worker a_j has performed the task b_i. See also REMARK 2. One can pose the problem of comparing (rating) relative difficulty of the tasks and the relative task performance speed of the workers. A simple way would be to compare the time sums or averages $\overline{a_j}$ and $\overline{b_i}$ between objects of the same type (workers or tasks). This may fail to distinguish objects, especially if time takes values in a small discrete set (e.g., the number of working days). The authors can refine the rating system. Let us try to define a rating system for workers and tasks according to the following assumptions. The task ratings are linear with respect to the worker ratings and vice versa. It can be assumed that the contribution of a_j to the rating b_i is proportional to the rating of a_j and t_{ij} (since harder tasks will have larger performing times), the contribution of b_i to the rating of a_j is proportional to the rating of b_i and $\frac{1}{t_{ij}}$ (since better workers will have smaller performance times).

The authors define two normed rating vectors $\boldsymbol{a} = [A_1, \dots, A_m]^T$ and $\boldsymbol{b} = [B_1, \dots, B_n]^T$ which satisfy the system of equations (Formula 1):

$$\begin{cases} B_i = \lambda \sum_{j=1}^{m} t_{ij} A_j, \\ A_i = \mu \sum_{j=1}^{n} \frac{1}{t_{ji}} B_j, \\ \|\boldsymbol{a}\| = \|\boldsymbol{b}\| = 1, \end{cases} \quad \leftrightarrow \quad \begin{cases} \boldsymbol{b} = \lambda T \boldsymbol{a} \\ \boldsymbol{a} = \mu T' \boldsymbol{b}; \\ \|\boldsymbol{a}\| = \|\boldsymbol{b}\| = 1, \end{cases} \quad (1)$$

where A_i and B_i are the "ratings" of the worker a_i and the task b_i, respectively, and the linear mappings T and T' are defined by the system of equations (Formula 2).

$$\begin{cases} T = \left[t_{ij} \right]_{n,m}; \\ T' = \left[\frac{1}{t_{ij}} \right]_{m,n}. \end{cases} \quad (2)$$

Solving the system (1), the authors get rating lists of workers and tasks. Such lists may be an important asset for managing workgroups and businesses. It is crucial to understand the linear mappings T and T'. This example shows the importance of linear mappings in applications.

In this article, **our main goal** is to find and describe effective and visual discrete models of linear mappings. This will contribute to improving the data arrangement and visualization in linear algebra. The authors describe a generalization of functional graphs for linear mappings – linear functional graphs (LFG).

Linear mappings are uniquely determined by images of elements of a basis. Therefore, linear mappings can be encoded using bases as vertex sets, while edge sets encode images of elements of bases under linear mappings. This generalization of functional graphs is similar to graphs of mappings (multivalued functions). Composition of linear mappings, matrix multiplication and determinants can be interpreted and defined in terms of LFG.

D. König (1916) seems to have been the first to describe the usage of graphs in linear algebra in the beginning of the 20th century. A modern treatment is given by R.A. Brualdi and D. Cvetkovic (2009). Vertex sets of graphs built from matrices are usually just identified with matrix rows and columns. Applications of linear algebra in graph theory appear in publications by M. Doob (1984), E.A. Kalinina and G.M. Khitrov (2017).

Matrix graphs and their full interpretations are not widely used in linear algebra textbooks, one of our goals is to popularize them. In this article, the authors define two versions of LFG depending on the number of bases necessary to define the linear mapping. The authors interpret matrix multiplication and determinants using LFG. These results were essentially described by P. Daugulis (1998).

The authors consider finite-dimensional k-linear spaces over some fixed field k. Matrices are denoted using bold letters. The authors denote a linear space L with an ordered basis B_L as *(L, B_L)*.

If $B_L = [e_1, \dots, e_n]$ is an ordered basis of L and $a \in L$, then the coordinate vector (column) of a with respect to B_L is denoted by $[a]_{B_L}$.

An edge-weighted directed graph (digraph) is a triple $\Gamma = (V, E, w)$, where
   V is the set of vertices;
   $E \subseteq V \times V$ is the set of edges, $(v, v') \in E$ means the directed edge from $v' \in V$ to $v \in V$;
   $w : V \times V \to k$ is the edge-weight function, $w(v, v') = 0$ if and only if $(v, v') \notin E$. The edge corresponding to $w(v, v')$ is $v' \xrightarrow{w(v,v')} v$.

The authors denote by *(V,E)* a digraph for which the weight function is in some sense trivial or is not used.

Review of functional graphs

The authors give this review for notational purposes.

A mapping (multivalued function) $f: A \to B$ from a set A (domain) to a set B (range) is a function $A \to 2^B$ (the power set of B). In the special case when $|f(a)| = 1$ for every $a \in A$ the authors identify f with the function $A \to B$.

Suppose the sets A, B and a mapping $f: A \to B$ are given. Define the 2-functional graph (2-FG) of f as the bipartite digraph $\Gamma(A,B,f)=(A \cup B, E_f)$, where the set of edges $E_f = \coprod_{a \in A} \coprod_{b \in f(a)}(b, a)$. Given a set A and an endomapping $f: A \to A$ define the 1-functional graph (1-FG) of f as $\Gamma(A,f)=(A,E_f)$, where $E_f = \coprod_{a \in A} \coprod_{a' \in f(a)}(a', a)$.

EXAMPLE 2. Let $A=\{1,2,3\}$ and $B=\{a,b,c\}$. Define a mapping $h: A \to B$ by setting $h(1)=\{a,b\}$, $h(2)=a$, $h(3)=\{a,c\}$. The 2-FG $\Gamma(A,B,h)$ is shown in Figure 1 (left).

EXAMPLE 3. Let A be as in the previous example. Define a function $f: A \to A$ by setting $f(1)=2$, $f(2)=3$, $f(3)=1$. The 1-FG $\Gamma(A,f)$ is shown in Figure 1 (right).

Figure 1. The 2-FG for the mapping h of Example 2 and the 1-FG for the mapping f of Example 3.

The aim of the paper is to give interpretations of such graphs and related data arrangements which project linear algebra to graph theory – definitions of linear functional graphs.

Methodology

The main research task was to generalize functional graphs in the linear algebra setting to be used in teaching linear algebra to rigorously interpret the known graphical techniques in linear algebra. The described discrete models were developed after an analysis of existing literature. Related methodological results were obtained applying theoretical results in linear algebra courses, various qualitative research methods (Mārtinsone et al., 2016). Discrete modelling methods were used. Some additional results were obtained and approbated by the authors teaching university-level linear algebra courses at Daugavpils University over 10 years.

Results and Discussion

Linear functional graphs

In this section, the authors describe generalizations of functional graphs for linear mappings. Edge-weighted digraphs are assigned to general matrices in the same way as unweighted digraphs are assigned to binary matrices. A suitable eponym-free name for them would be *linear functional graphs (LFG)*. Two separate cases must be considered: linear mappings between two spaces and linear operators.

Linear mappings are functions between linear spaces which preserve linear operations. Let L, U be k-linear spaces. A function $f: L \to U$ is a **linear mapping** if

$f(l_1 + l_2) = f(l_1) + f(l_2)$ for all $l_1, l_2 \in L$;
$f(\lambda l) = \lambda f(l)$ for all $l \in L$ and $\lambda \in k$.

$Hom(L,U)$ – the space of all linear mappings from L to U.

Most functions studied and used in linear algebra are linear mappings. Linear mappings are also useful in practical applications. For example, many important geometrical transformations are linear mappings (Blyth, Robertson, 2002).

The modelling idea. Here is an attempt to generalize the functional graphs for linear mappings.

The first step is to find objects in linear spaces which should be modelled as graph vertices. Elements of linear spaces are uniquely expressed as linear combinations of elements of their bases. This observation leads to the idea to start by choosing bases as vertex sets. Linear mappings are uniquely

determined by images of elements of a basis of the domain space. These images are, in turn, uniquely expressed as linear combinations of elements of a basis of the range space. Therefore, a linear mapping can be uniquely encoded using edge-weighted directed graphs:

- the vertex set is the union of bases or the basis;
- the set of weighted edges is determined by the images of basis elements under linear mappings: if $f(e)$ contains a summand $f_i\, t_i$, where t_i is an element of a basis, then there is an arrow from e to t_i with weight f_i.

The generalization of functional graphs for linear mappings (linear functional graphs, LFG) is similar to functional graphs of multivalued functions.

Graphs for linear mappings between two spaces

Let (L, B_L), (U, B_U) be linear spaces, $B_L = [e_1, \dots, e_n]$ and $B_U = [t_1, \dots, t_m]$ - ordered bases. Let $f \in Hom(L, U)$ be defined by linear combination (Formula 3).

$$f(e_j) := \sum_{i=1}^{m} f_{ij} t_i \qquad (3)$$

The matrix $[f_{ij}]$ – the f-matrix with respect to B_L and B_U is denoted by $[f]_{B_L, B_U}$ or $\boldsymbol{F}$.

DEFINITION 1. Define an edge-weighted digraph $\Lambda(B_L,B_U,f)=\Lambda(B_L,B_U,\boldsymbol{F}) :=(B_L \cup B_U, E, w_f)$, where $E = \coprod_{i,j: f_{ij} \neq 0}(t_i, e_j)$, $w_f(t_i, e_j) := f_{ij}$. $\Lambda(B_L,B_U,f)=\Lambda(B_L,B_U,\boldsymbol{F})$ is called the 2-LFG of f or $\boldsymbol{F}$ with respect to B_L, B_U.

REMARK 1. 2-LFG are bipartite graphs. If the weight of an edge is 1, then it is not shown as an edge weight. Thus unweighted graphs correspond to binary matrices.

EXAMPLE 4. Let$(L, [e_1, e_2, e_3, e_4])$, $(U, [t_1, t_2])$ be linear spaces. The 2-LFG for the linear mapping $f: L \rightarrow U$ corresponding to the matrix $\begin{bmatrix} \lambda 000 \\ 1\lambda 10 \end{bmatrix}$ is shown in Figure 2.
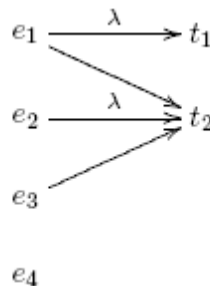
Figure 2. The 2-LFG for the linear mapping of Example 4.

REMARK 2. A 2-LFG graph for Example 1 is shown in Figure 3.
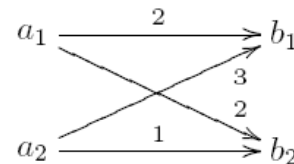
Figure 3. A 2-LFG for Example 1.

Matrix multiplication using 2-LFG

2-LFG allows us to interpret matrix multiplication in a graph-theoretic way (Brualdi, Cvetkovic, 2009).

Suppose that a $m \times n$ matrix $\boldsymbol{A} = [a_{ij}]$, and a $n \times r$ matrix $\boldsymbol{B} = [b_{ij}]$ are given. They can be viewed as matrices of linear mappings. Let $f \in Hom(V, U)$ and $g \in Hom(L, V)$ for some linear spaces (L, B_L), (V, B_V) and (U, B_U) with respect to the given bases: $\boldsymbol{A} = [f]_{B_V, B_U}$, $\boldsymbol{B} = [g]_{B_L, B_V}$. The authors construct the corresponding 2-LFGs $\Lambda(B_V, B_U, \boldsymbol{A})$ and $\Lambda(B_L, B_V, \boldsymbol{B})$. The matrix product $\boldsymbol{AB} = \boldsymbol{C} = [c_{ij}]$ is equal to $[f \circ g]_{B_L, B_U}$. It is seen that c_{ij} is equal to the sum of products of edge weights for paths from the jth

vertex of B_L to the ith vertex of B_U. It corresponds to the interpretation of matrix product as a composition of functions. This definition of matrix multiplication using paths in directed graphs may be also used in courses of discrete mathematics as an application of graph theory in linear algebra. It can be used in conjunction with the definition of matrix multiplication given in (Daugulis, Sondore, 2018).

EXAMPLE 5. Let $A = \begin{bmatrix} a_{11} & a_{12} & 0 \\ 0 & a_{22} & a_{23} \end{bmatrix}$, $B = \begin{bmatrix} b_{11} & 0 \\ b_{21} & b_{22} \\ 0 & b_{32} \end{bmatrix}$. Let us find the matrix product AB. It can be interpreted A and B as matrices of linear mappings. In the notations of the previous passage assume $B_L = [e_1, e_2]$, $B_V = [t_1, t_2, t_3]$, $B_U = [z_1, z_2]$. The 2-LFGs on one picture are shown in Figure 4.
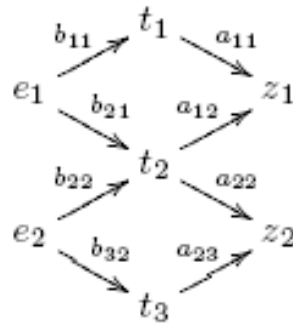
Figure 4. The description of AB in terms of LFG for Example 5.

Looking at directed paths from the domain space to the range space the matrix C=AB (Formula 4) can be established.

$$C = AB = \begin{bmatrix} b_{11}a_{11} + b_{21}a_{12} & b_{22}a_{12} \\ b_{21}a_{22} & b_{22}a_{22} + b_{32}a_{23} \end{bmatrix} \quad (4)$$

For example, the element c_{12} of matrix C is equal to $b_{22}a_{12}$, because there is one directed path going from e_2 to z_1 path with edge weights b_{22} and a_{12}.

A new definition of determinant

2-LFGs allow us to give a new definition of matrix determinant. Let A be a square matrix. Interpret it as the matrix of a linear mapping with respect to some basis B. Construct Λ (B,B,A). It can be called its edge subset P *a permutation-edge-subset* if

- $|P|=|B|$;
- every element of B is the tail of some edge in P;
- every element of B is the head of some edge in P.

Every permutation-edge-subset P defines a permutation of B. Denote its sign by $\varepsilon(P)$. It is known that $\varepsilon(P)=(-1)^c$, where c is the number of pairwise edge intersections for the standard plane embedding of the 2-FG of P with straight edges. Denote $w(P)=\prod_{e \in P} w(e)$. Denote $s(P) = \varepsilon(P) \cdot w(P)$ and call it the signed edge weight product.

Comparing with the standard definition it is seen that $det(A)=\sum_P s(P)$ where the summation is over all permutation-edge-subsets of $\Lambda(B,B,A)$.

EXAMPLE 6. Consider a general 3×3 matrix $A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$. It can be interpreted as the matrix of a linear operator with respect to some ordered basis $B=[1,2,3]$. $\Lambda(B,B,A)$ is shown in Figure 5.
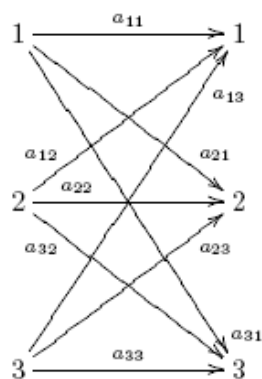
Figure 5. Λ(B,B,A) of Example 6.

The number of permutation-edge-subsets is 6, Figure 6. The corresponding signed edge weight products (from left to right) are $a_{11}a_{22}a_{33}$, $-a_{21}a_{12}a_{33}$, $-a_{11}a_{32}a_{23}$, $-a_{13}a_{22}a_{31}$, $a_{21}a_{32}a_{13}$, $a_{31}a_{12}a_{23}$.
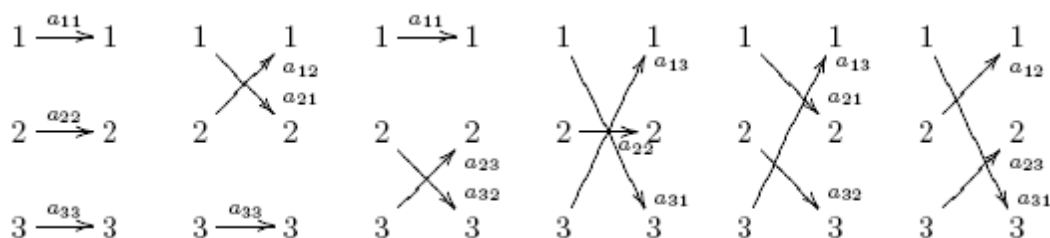
Figure 6. The permutation-edge-subsets of $\Lambda(B,B,A)$ for Example 6.

Summing over permutation-edge-subsets the authors get the determinant formula for 3×3 matrices -

$$det(\boldsymbol{A}) = \sum_P s(P) = a_{11}a_{22}a_{33} - a_{21}a_{12}a_{33} - a_{11}a_{32}a_{23} - a_{13}a_{22}a_{31} + a_{21}a_{32}a_{13} + a_{31}a_{12}a_{23}.$$

REMARK 3. Matrix elements corresponding to permutation-edge-subsets can be used to give yet another definition of determinant which does not involve LFG. Take a $n \times n$ matrix $\boldsymbol{A}$. For each permutation matrix $\boldsymbol{\Sigma}$ of the set $\{1,\ldots,n\}$ find the product of $\boldsymbol{A}$-elements which are in positions of 1's in $\boldsymbol{\Sigma}$ and multiply it by the permutation sign $\varepsilon(\boldsymbol{\Sigma})$. Each such signed product cut out by a permutation matrix is equal to a signed edge weight product as defined above. Finally, sum these signed edge weights products over all permutations and get $det(\boldsymbol{A})$.

Graphs for linear operators

Now the authors define linear functional graphs for linear operators using one basis. Let L be a linear space with an ordered basis $B_L = [e_1, \ldots, e_n]$. Let a linear operator $f \in Hom(L, L)$ be defined by the linear combination (5).

$$f\left(e_j\right) := \sum_{i=1}^n f_{ij}e_i. \qquad (5)$$

Again denote $[f_{ij}]$- the f-matrix with respect to B_L by $[f]_{B_L}$ or $\boldsymbol{F}$.

DEFINITION 2. Define a edge-weighted digraph $\Lambda(B_L,f)=\Lambda(B_L,\boldsymbol{F}) := (B_L, E, w_f)$, where $E = \coprod_{i,j:f_{ij}\neq 0}(e_i, e_j)$. Edge weights are defined as follows: $w_f\left(e_i, e_j\right) := f_{ij}$. $\Lambda(B_L,f)= \Lambda(B_L,\boldsymbol{F})$ is called the 1-LFG of f or $\boldsymbol{F}$ with respect to B_L.

REMARK 4. Note that $f(e)=0$ if and only if there is no edge left e (e is a sink vertex). Vertices which are sinks or which have a loop and no outgoing edges are eigenvectors.

EXAMPLE 7. The 1-LFG for a Jordan block matrix $\begin{bmatrix} \lambda & 0 & 0 \\ 1 & \lambda & 0 \\ 0 & 1 & \lambda \end{bmatrix}$ is shown in Figure 7.
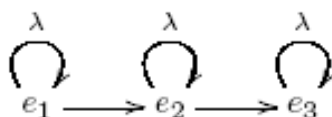
Figure 7. The 1-LFG for the Jordan block of Example 7.

Using LFG in linear algebra courses

LFG give opportunities to visualize linear mappings. Right plane embeddings (drawings) of LFG provide efficient arrangements of data. LFG can make linear algebra more accessible for visual learners. As it was shown LFG can be used to compute matrix products and determinants. Using LFG some linear algebra proofs, such as associativity of matrix multiplication and anti-homomorphism property of matrix transposition, are easier to see.

LFG has been used by the first author in university linear algebra classes, they often spark interest in students. It can contribute to developing research competencies of students (Kaskatayeva, 2014; Vintere, 2013). It should be noted that the introduction of LFG is more suitable at advanced levels rather than the first-year university courses.

Conclusions

We stress that the known matrix-digraph correspondence must be viewed as a generalization of functional graphs to the case of linear mappings and attention must be paid to the nature of vertices. The issue of graph vertices is not addressed properly in textbooks. Vertices of these graphs must be identified with the elements of bases. The task of finding a visual model for linear mappings has been addressed in the article and a solution has been described. This encoding of linear mappings and matrices as graphs is a helpful data arrangement and visualization technique which can be used teaching and studying linear algebra. This technique may expand visualization competence of students by giving another working example in a widely used and applied area of mathematics. Usage of graphs in other areas of mathematics can stimulate learning of graph theory and graphs models. In our opinion study courses and textbooks in linear algebra should be modified to include linear functional graphs as a desirable data arrangement and visualization technique for linear mappings.

Further discussions of LFG can involve interpreting basis changes in graphic terms. In a future development, functional graphs should also be generalized for other important algebraic structures such as groups.

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Digital Competence of Hospitality Students within the Context of Information and Communication Technology Environment

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Abstract: In the nearest future, most industries, including hospitality, will be characterized by significant changes linked to the change of business models, leaders break through innovations due to the new global epidemiological situation. Considering the new digitization trends in the hospitality industry, only companies with employees with high-level digital competence will be able to survive, adapt and develop. The dual study environment of a higher education institution – the study environment of a higher education institution and the environment of professional activities plays a major role in the development of digital competence. On the basis of the ecological approach, there has been the context of information and communication technology environment viewed in the article within the substantiation of digital competence. The aim of the study was: during the pedagogical experiment to approbate the developed "*Model of the dual study environment of a higher education institution*" and to evaluate university hospitality students' competitiveness including digital competence as competitiveness integral part. To find out how significantly has changed the self-evaluation of students' digital competence after the prospective hospitality business managers' competitiveness facilitation in the framework of the developed dual study environmental model. Both before and after the pedagogical experiment the students performed the self-evaluation of digital competence by using the authors' developed and examined competitiveness evaluation methodology. The obtained results testify that the developed and approbated model for promotion of competitiveness development in general impacted self-assessments of the students' digital competence during the pedagogical experiment.

Keywords: hospitality business manager, self-evaluation of digital competence, university education.

Introduction

In nowadays world the development of new technologies is undergoing significant changes. The *Paris Communiqué* states that digitization should play an increasingly important role in all spheres of society (Paris Communiqué, 2018). It will transform the implementation of higher education at different stages of human life, providing lifelong and flexible learning.

Therefore, the challenge for higher education is to promote prospective specialists to act creatively in the digital environment, develop digital skills and competencies, improve the skills of data analysis and educational research (Zhanguzhinova, Magauova, Nauryzbaeva, 2016; Vronska, 2016; Iriste, Katane, 2019). The interaction of social subjects is largely linked to the growth of mass communications, the use of various types of technology and the role of information in the dual study environment of a higher education institution - the study environment of a higher education institution and the environment of professional activities.

Digitization/integration of digital technologies in the environment of professional activities is becoming an increasingly complex issue for various business areas, including hospitality. The Tourism 4.0 initiative points out that the industry has always been a pioneer in technological development (Stankov, Gretzel, 2020). Digitization changes the way hospitality companies operate, adapting to the information and communication technology (hereafter – ICT) environment in the context of the new global epidemiological situation. The digital competence of hospitality managers is becoming indispensable, especially in the shadow of COVID-19. The authors of the article, based on the ecological approach, substantiate the ***digital competence of prospective hospitality business managers within the context of communication technology environment***.

The aim of the study: during the pedagogical experiment to approbate the developed "*Model of the dual study environment of a higher education institution*" and to evaluate university hospitality students' competitiveness including digital competence as competitiveness integral part.

Methodology

The pedagogical experiment was carried out at the Latvia University of Life Sciences and Technologies, Institute of Education and Home Economics and Nutrition Department of the Faculty of Food Technology. During the pedagogical experiment the model of the dual study environment of a higher education institution was approbated (Figure 1) to promote the development of competitiveness of prospective hospitality business managers.
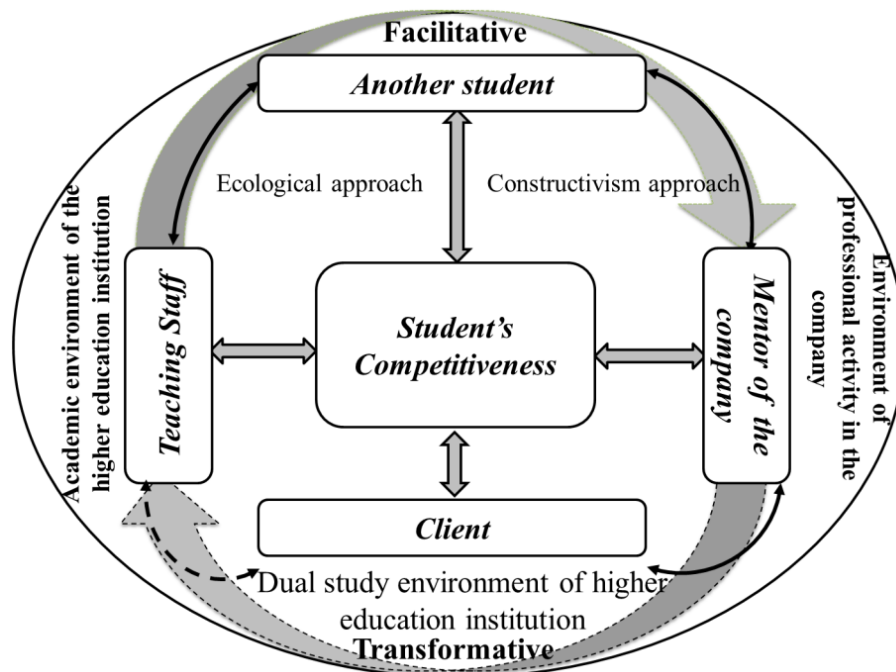
Figure 1. The model of the dual study environment of a higher education institution that transforms and facilitates the development of the competitiveness of prospective hospitality business managers.

To evaluate the impact of the model of the dual study environment of a higher education institution on students' competitiveness development, the model of competitiveness structure (Figure 2) and prospective hospitality business managers' competitiveness self-evaluation methodology were developed (Iriste, Katane, 2015; Iriste, 2018).
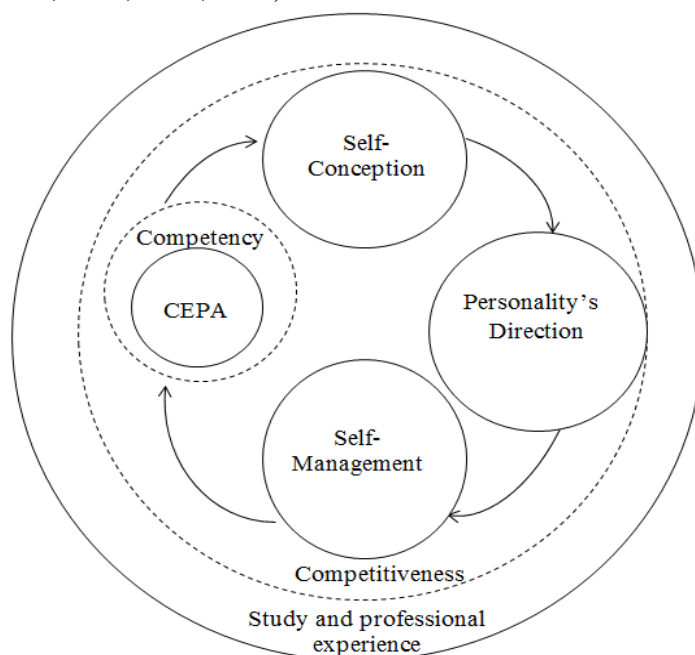
Figure 2. The competitiveness structure model of prospective hospitality business managers.

Prospective hospitality business managers' competitiveness self-evaluation methodology consists of 203 indicators according to all competitiveness structure model components (Figure 2), where the component of *competence of the environment of professional activities* (hereafter – CEPA) takes an essential place. An essential integral part of CEPA component is digital competence (Figure 3).
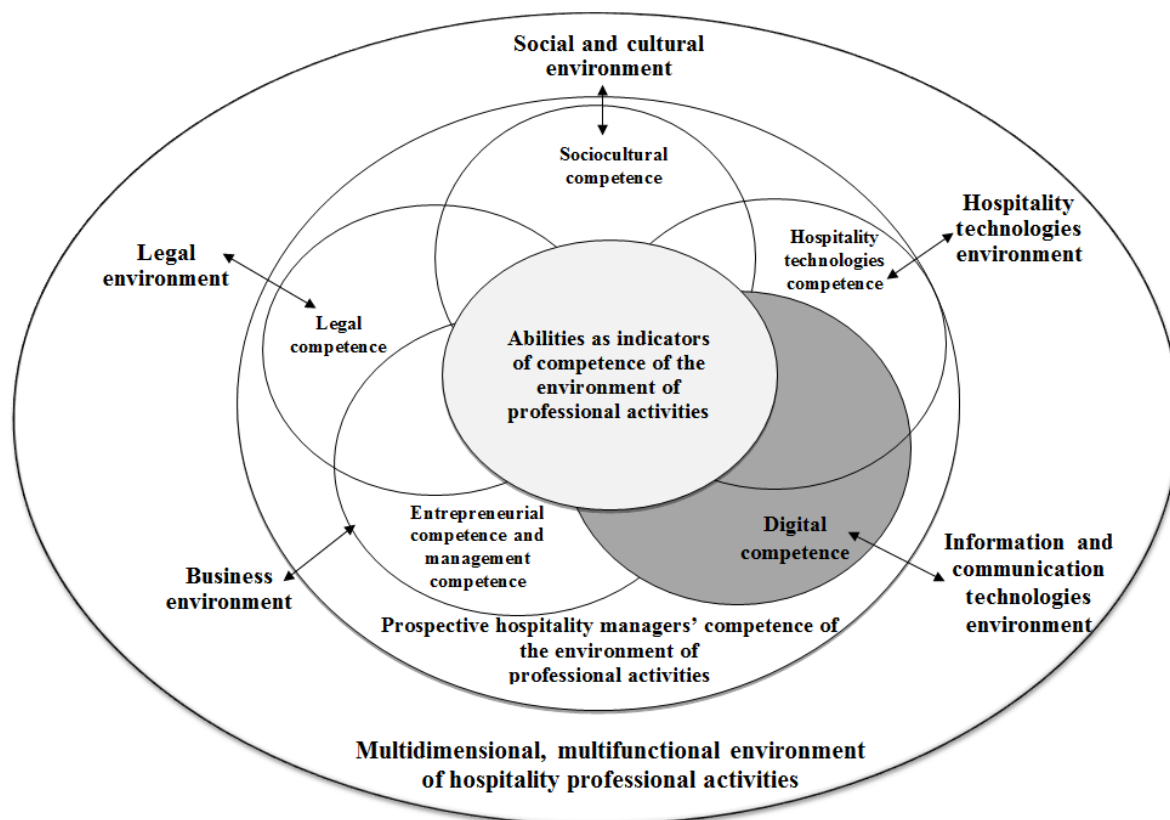
Figure 3. Digital competence in the structure of CEPA of the prospective hospitality business manager.

The methodology for the digital competence self-evaluation of prospective hospitality business managers consisted of 12 indicators that were an integral part of the CEPA evaluation indicators system (in total: 95 indicators).
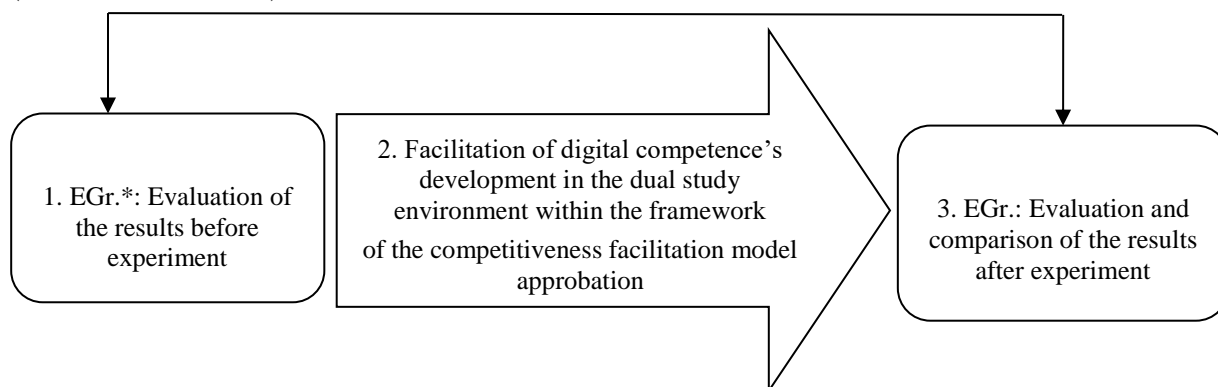
*EGr. - Experimental Group

Figure 4. Pedagogical experiment structure.

In this article the authors publish only results according facilitation and evaluation students' digital competence.

The research question: have there been significant changes in the self-evaluation of the digital competence of prospective hospitality business managers in the process of approbation of the model of the dual study environment of a higher education institution during the pedagogical experiment?

The model (Figure 1) was implemented in all students' groups and all study courses of the study programme "*Catering and Hotel Management*" (hereafter – CHM) therefore there was only experimental group in the pedagogical experiment (without control group). It was one of the different types of pedagogical experiment. Fifteen 4th year bachelor students of the study programme "*CHM*" took part in the pedagogical experiment as an experimental group.

The pedagogical experiment consisted of three stages (Figure 4): 1) the first self-evaluation of the digital competence in the experimental group; 2) facilitation of digital competence's development in the dual study environment within the framework of the model approbation; 3) the second (repeated) self-evaluation of the digital competence in the experimental group and data processing.

The authors used the Wilcoxon Test (SPSS software) to identify differences and to obtain conclusive statistics.

Results and Discussion

Theoretical basis of the pedagogical experiment

Digital competence is one of the most important within the competence of the environment of professional activities of the prospective hospitality business manager (Figure 3).

The customers of hospitality companies increasingly prefer face-to-face communication and replace them with various information tools. In this case, the information tool is not just a passive mediator, but a tool for active dialogue between a person and the ICT environment. Therefore, the informative culture of the hospitality staff is crucial, which is essential in the process of personality socialization. One of the main indicators of the existence of informative culture is the ability to use modern technologies in professional activities (Heath, 2012; Semrad et al., 2012), that allows to serve the customer in a 24/7 mode.

According to a study by EHL Swiss School of Tourism and Hospitality (Mamdouh, 2017), one-third (31 %) of catering managers in Germany, France, Italy and Spain use digital technology in their daily professional activities to promote business processes, 46 % are open and would like to use them, 15 % plan to invest in the implementation of digital technologies in companies. Efficiency and competitiveness of business, as well as the competitiveness of the company as a whole on the Latvian and global hospitality market largely depend on the ability of hospitality managers quickly and efficiently transmit information in the real-time mode. However, 31.4 % of CEOs have a low level of digital competence development (Solis, 2017).

Whereas companies used to hire people to collect data, nowadays they are looking for professionals who can use the Internet and the latest technologies to accumulate, create, analyse, critically assess and share information, secure communicate and collaborate in social networks that is, people with digital competence.

J. Dachis (founder of *Razorfish*) concluded: all things that can be digitized will be digitized (Dishman, 2011).

Until 1983 digital competence was attributed one of the most insignificant roles in the professional activities of hospitality specialists; however, since the research performed by *Institute for the Future analyzes* (Davies, Fidler, Gorbis, 2011), it has been named one of the 6 driving forces of changes: 1) growth of smart devices and systems; new technologies will expand, develop human abilities, change work standards; the equipment will also become human collaborators; 2) increase human longevity will completely change the nature of his/her career and education; 3) new media ecology. New communication tools will require new media literacy, which will place new demands on human attention and cognitive processes. While creating an online identity, a person will have to take charge of her or his reputation and identity management; 4) digitalized world. A strong, continuous increase in sensors and processing power will make the world as a programmable system; 5) highly structured organizations, where new social technologies will be transferred to new forms of production and value creation; 6) globally interconnected world. Five of the six identified drivers of change are related to technology.

Companies create databases where the most important information about the wishes, benefits, qualities, etc. of the customer is collected. In the field of hospitality, where a satisfied guest is a guarantee of success in business, there is a growing need for timely and quality information provided by various technologies,

because (Shariff, Kayat, Abidin, 2014; Sisson, Adams, 2013; Morozov, Morozova, 2009): 1) the information is global in nature; 2) the speed of data collection, processing, storage and transmission increases; 3) the influence of information on the development of various spheres, including tourism and hospitality, is growing; 4) information becomes a product status; 5) different types of technologies become information tools by means of which both communication process and production/creation of a product/service occurs; 6) the decision to purchase a service/product is based on information; 7) the service/product itself is only information at the time of purchase; 8) information is shared by all users in this market.

The impact of information technology in the hospitality industry is vast (Figure 5), so the study environment should facilitate the development of digital competencies of prospective hospitality managers in the rapidly changing and developing hospitality industry (Swanger, Gursoy, 2010). Scientists D. Buhalis and P. O'Connor (2001) have identified three levels of digital competence necessary for those working in the hospitality industry: a) *digital competence* to use industry applications such as the Fidelio property management software; b) *digital competence* to use *end-user applications*, for example *Microsoft Word,* presentation tools – *Microsoft Power Point,* online communication tools, planning tools, e-mails – *Outlook, Thunderbird;* c) *digital competence* to use conceptual and strategic applications – data collection and processing, planning, modelling, forecasting, optimization and reporting (Nadkarni, 2003). However, there is still a largee gap between the level of competence required by the professional hospitality environment and the level of competence offered by the university environment, which requires cooperation with hospitality companies in organizing and providing internships (Morellato, 2014).
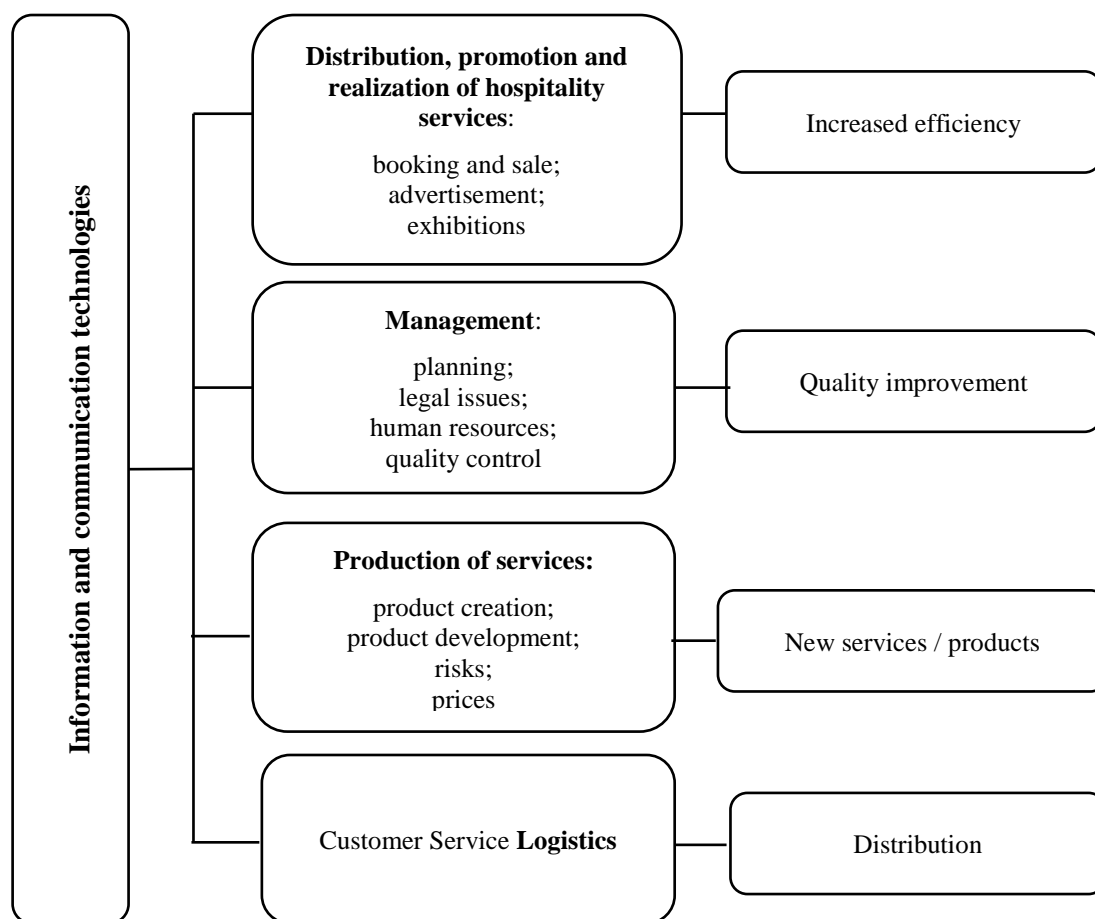
Figure 5. Impact of information and communication technologies in hospitality business
(Source: created, adapted, modified by the authors from Morozov, Morozova, 2009).

In addition to or as a synonym for digital competence (Hölscher, Suchanek, 2011; Zylka, Müller, Martins, 2011), media competence, media literacy is often mentioned in scientific literature, which means the ability to perceive, analyse, structure, evaluate media as well as to create one's own – blogs, podcasts and so on. (Utegenov et al., 2014). As customer service and interpersonal relationships are becoming more digital, prospective hospitality managers are required to be digitally active both with clients and with their

colleagues through email, various social networking platforms, websites, chat sites, etc. Digital services such as *WhatsApp, Lync, Skype, Yammer*, etc. are integrated into everyday interpersonal communication.

The ability to find the right one to select relevant information from an unnecessary large amount of information; understanding the principles of social networking is crucial for prospective hospitality managers, because the interaction with the customer, the search for information and making decisions about buying a service/product occurs in today's ICT environment. Thus, the digital competence of hospitality managers is the ability to use, critically analyse, evaluate and transmit different types, formats and categories of multimedia messages, analyse complex information processes and media activities in society to solve various professional tasks in the modern ICT environment (Iriste, 2018; Iriste, Katane, 2015):

- reservations (hotel rooms, tables in the restaurant, tickets, transport, etc.);
- business correspondence through various programs and websites (*Outlook, Skype, Twitter, Facebook, TripAdviser, Booking*);
- searching for information (including through the software for tourism and hospitality: *Amadeus, Galileo International*);
- creation and use of customer databases (*CRM-systems*);
- media awareness.

Pedagogical experiment: results of empirical study

The first self-evaluation of the digital competence component of the experimental group occurred during the academic year 2018/2019. In the study there was used the competitiveness evaluation methodology, developed by the authors, theoretically grounded, approbated by prospective hospitality managers and expertly evaluated.
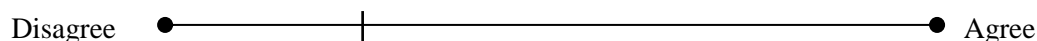
Figure 6. Projective scale.

Before students completed the questionnaire, they were familiarized with the rules of filling it in. To identify the self-evaluation of digital competence, a scale method was used (Figure 6).

Indicators of digital competence

Students indicated by slash the extent to which they agree or disagree with the statement.

It took about 10 minutes to complete the questionnaire in the Nutrition department at the Faculty of Food Technology. The first self-evaluation of digital competence was followed by the approbation of the model of the dual study environment of a higher education institution that transforms and facilitates the development of the competitiveness of prospective hospitality business managers. In the final stage of the experiment in September 2019, the experimental group of students repeatedly completed the digital competency self-evaluation questionnaire.

Table 1

Results of the Wilcoxon test: Conclusive statistics 1

N	Self-evaluation indicators of digital competence	Self-evaluation coefficients		*p*-value	Conclusions
		Before experiment	**After experiment**		
1.	*Ind. 46.* I know how to choose and apply rational and effective methods of collecting and systematizing information to assess the economic performance of the hospitality enterprise.	0.59	0.75	0.009	Very significant differences
2.	*Ind. 48.* I know how to practically use the results of various studies in a hospitality company.	0.69	0.81	0.042	Significant differences
3.	*Ind. 49.* I know how to perceive, analyse, structure and evaluate the mass media reports.	0.66	0.85	0.005	Very significant differences
4.	*Ind. 50.* I am able to create mass media reports about what is going on in the hospitality company.	0.50	0.73	0.011	Significant differences

The conclusive statistics of the Wilcoxon test shows that after the approbation of competitiveness facilitation model, statistically significant and statistically significant changes (differences) in self-evaluation of the *digital competence* (p-value = 0.000 ... 0.049) occurred according to 4 indicators: 46, 48, 49, 50 (Table 1).

The results according to 4 indicators (43, 45, 51, 47) testify that differences appear or there is weak coincidence between the self-evaluations of the digital competence of prospective specialists before and after the approbation of the model of dual study environment of a higher education institution. This means that there have been small changes in digital competence self-assessments according to these 4 indicators, but they are not statistically significant. Only 4 indicators (40, 41, 42, 44) show good coincidence and moderate coincidence between self-assessments before and after pedagogical experiment (Table 2).

Table 2

Results of the Wilcoxon test: Conclusive statistics 2

N	Self-evaluation indicators of digital competence	Self-evaluation coefficient		*p*-value	Conclusions
		Before experiment	After experiment		
1.	*Ind. 40*. Thanks to various search engines and technologies, I am able to quickly find, evaluate, and select the information I need from the global information network.	0.69	0.73	0.888	Good coincidence
2.	*Ind. 41*. I am able to work with a large amount of information by collecting, structuring and archiving it.	0.70	0.76	0.528	Good coincidence
3.	*Ind. 42*. I am able to summarize the information received. I am able to develop, complete, and submit reports on business activities in a timely manner. I am able to present information, argue.	0.66	0.71	0.531	Good coincidence
4.	*Ind. 43*. I am able to create and logically present different structured information elements: reports, statements, presentations, advertisements using various media.	0.63	0.72	0.211	Weak coincidence
5.	*Ind. 44*. I know how to distance myself from information that I do not need and is even harmful, which can negatively affect my professional activities.	0.68	0.79	0.259	Moderate coincidence
6.	*Ind. 45*. I am able to work with different types of information and its storage media, with spreadsheets and databases.	0.73	0.83	0.116	Weak coincidence
7.	*Ind. 47*. I am able to obtain and process the data necessary for the company's research and development, including gathering information from customers to get their opinion.	0.69	0.83	0.054	Differences appear
8.	*Ind. 51*. I am proficient in document management.	0.50	0.63	0.174	Weak coincidence

Analysing self-evaluation of other indicators of digital competence, already before the pedagogical experiment the coefficients of self-evaluation according to some indicators were high, for example, indicator 41 (0.70), indicator 45 (0.73). However, only for one indicator 51 (I am proficient in document management), it was low: 0.50. If to look at the self-evaluation coefficients, this indicator also has the lowest value after the pedagogical experiment: 0.63. This indicates that prospective hospitality managers should be offered to take the study course *Records Management*.

After the pedagogical experiment, 2 indicators (indicator 45 and indicator 47) have very high self-evaluation coefficients (Table 2), which illustrates that young specialists have no difficulties in working with different types of information and its carriers, spreadsheets and databases, as well as know how to receive and process the data necessary for research and development of the company's activities.

Indicator 44 shows a high level of self-evaluation of competence (0.79) after the pedagogical experiment, which is essential in today's saturated information era.

Hospitality enterprises have the opportunity to expand their target audience, reach and improve service quality, develop at an accelerated pace, considering that the global digitization will be won by those whose arsenal will involve more and better digital platforms and in which employees will feel like fish in the water – that is, have high-level digital competence.

Conclusions

- The digital competence is one of the most crucial parts of the professional activity competence in the prospective hospitality managers' competitiveness structure. It is the ability to use, critically analyse, evaluate and transmit different types, formats and categories of multimedia messages, analyse complex information processes and media activities in society to solve various professional tasks in the modern ICT environment.

- Comparing the self-assessments of potential hospitality managers according to the 12 indicators of digital competence before and after the pedagogical experiment, the conclusive statistics of the Wilcoxon test (SPSS) shows that there have been statistically significant and statistically significant changes according to 4 indicators (46, 48, 49, 50) of digital competence. The obtained results according to 4 indicators (43, 45, 51, 47) testify that differences appear or there is weak coincidence between the self-evaluations of the digital competence of prospective specialists before and after the approbation of the model of dual study environment of a higher education institution. This means that there have been small changes in digital competence self-assessment according to these 4 indicators, but they are not statistically significant. Only 4 indicators (40, 41, 42, 44) show good coincidence and moderate coincidence between self-assessments before and after pedagogical experiment.

- The obtained results testify that the developed and approbated model for promotion of competitiveness development in general impacted self-assessment of the students' digital competence during the pedagogical experiment. This means that the developed and approbated model transforms and facilitates the development of prospective hospitality business managers' digital competence and in general their competitiveness as well.

- The competitive advantage on the hospitality market will be given to companies in which staff with high-level digital competence work. This is the only way to maintain customer loyalty and business profits, increase innovation and improve security in the changing global environment.

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Peculiarities of the First Year University Students' Motivation for Learning in Samples of Riga and Smolensk

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Abstract: The demand for tertiary education among young people is growing worldwide. However, in the first months of the studies, freshmen face increasing difficulties, which sometimes negatively affect their learning motivation. For the successful pedagogical process, teachers need to study the motivation of students of the first study year, monitor it and take into account its peculiarities while developing learning materials and choosing educational strategies. The article presents the results of an international study of freshmen's motivation. The study aim to compare the motivation of the first-year students at the universities of Riga and Smolensk, to identify prevailing motives and to assess the impact of the psychological atmosphere in the student group on their motivation. In the survey carried out in December 2019, 129 students from two universities in Riga (Latvia) and Smolensk (Russia) participated. The tools for collecting information were the technique of diagnostics of learning motivation by 7 content scales and the technique of measuring the psychological climate in the collective by 10 bipolar scales. For data processing, descriptive statistics, analysis of statistical indicators, and Spearman correlation analysis were used. In both national samples, professional motives for learning prevail over other motives, while prestige motives and avoidance motives take the penultimate and last place relatively. The importance of other groups of learning motives is assessed somewhat differently. For the Smolensk sample of students it was found out that their motivation to learn depends on the psychological atmosphere in the group, especially on the overall atmosphere of success in the group. However a similar correlation has not been revealed in the survey of the Riga sample of students. The study shows that a few months after the start of studying, the first-year students' overall motivation has not dropped below the critical level. However, for more successful training, it could and should be improved. Some ways to increase freshmen's motivation for learning are proposed in the article.

Keywords: first year university students, learning motivation, psychological atmosphere in the student group.

Introduction

Despite mounting criticism of formal tertiary education (Kromydas, 2017; Bartram, 2020), the demand for it among young people is growing. According to the estimation by Organisation for Economic Co-operation and Development (OECD), if current entry patterns persist, 49 % of young adults across OECD countries will enter tertiary education in 2021; the prognostic rate of those who will graduate this year is 38 % (OECD, 2020). The mass desire of young people for higher education, however, is at odds with another modern sociocultural trend, which is a certain infantilisation of some part of the youth, expressed in the reluctance of adolescents and young people to make great efforts in their studies, the inability to take responsibility for their own future, the preference for entertainment to other kinds of pastimes (Gottschalk, 2018; Hartwell-Walker, 2018; Baljukova, Jakovleva, 2020). University educational programs (levels 5 and 6 according to the International Standard Classification of Education (ISCED)) are more complex than educational programs of the 4th and below levels, and require a long time to acquire them. For example, ISCED level 5 has a minimum duration of 2 years. Unsurprisingly, that for many students studying at the university becomes a hard test; it is sometimes the first serious test in their lives.

To successfully overcome difficulties, motivation is necessary, which corresponds with the difficulty level of a task (Maslow, 1954; Illeris, 2009; Safronova, Klyukina, 2019). However, research shows that the learning motivation of freshmen in the first months of studying somehow declines. The reasons may be the gap between the school and university systems of education, lack of skills of independent work, inability to plan their time to orienteering in a large flow of information, lack of understanding of the specifics of university education, which involves the study of a number of fundamental disciplines not

related directly to the chosen specialty (Birzina, Cedere, 2017; Borzilova, 2015; Howey, 2008). Former secondary school students are experiencing an inner conflict: their notions of studying at the university and the future profession come into conflict with the realities of academic requirements and with difficulties that sometimes seem insurmountable, which leads to high dropouts (Bustamante, 2020)**.** Helping students to get used to the new educational environment, to turn the conflict of expectations with objective reality into a point of growth in academic, professional and personal terms is an important task of the university academic staff (Boekaerts, 2010; Rizkallah, Seitz, 2017). A constructivist approach to education as a paradigm shift from teaching to learning with an emphasis on active individual's intelligence organization and immediate construction of new information from experience is a quite serious challenge in contemporary higher education. Constructivism principles help to understand and evaluate competence development of a teacher in the role of a facilitator in a positive and supportive learning environment (Briede, Peks, 2014). Sustained academic motivation of freshmen is an important factor and resource for successful studying at the university and, as a result, graduating. Therefore, teachers need to study the learning motivation of students in the first study year, closely monitor it, and take into account its peculiarities in the development of study materials and the choice of educational strategies.

This article is the second stage of an international research project dedicated to the academic motivation of students. The project was started by the authors of the article in 2018 and has been carried out on the basis of Smolensk State University (Russia) and EKA University of Applied Sciences (Riga, Latvia; the official English name of the university includes the abbreviation of its Latvian name: *Ekonomikas un Kultūras Augstskola*). The first phase of the project was analysing the data of a survey of graduates who retrospectively assessed their academic motivation during their studies at the university (Jermolajeva, Silchenkova, Turusheva, 2020a, 2020b). The second stage of the project is devoted to the learning motivation of freshmen.

The aim of the study is to compare the motivation of the first-year students at the universities of Riga and Smolensk, to identify the prevailing motives and to assess the impact of the psychological atmosphere in the student group on their motivation.

Methodology

Two techniques have been used to collect the data; the main is the "Diagnostics of learning motivation of students" by N. Badmayeva. It provides an opportunity to determine the level of motivation on seven content scales, which structure, in a compact and at the same time exhaustive way, many diverse motives that affect the attitude of students to studying (Badmayeva, 2004).

- Scale 1: communication motives that show how much the student is motivated to communicate with their fellow students and, in the future, with colleagues.
- Scale 2: motives of avoidance, demonstrating how the respondent is forced to learn in order not to lag behind their fellow students and avoid condemnation.
- Scale 3: motives of prestige, showing the desire to be the best in everything.
- Scale 4: professional motives that demonstrate a focus on acquiring a profession.
- Scale 5: motives of creative self-realisation, which show how much the interviewee wants to be realised as a creative personality.
- Scale 6: educational and cognitive motives that show the desire to gain knowledge.
- Scale 7: social motives that demonstrate the desire to be successful in the society.

For each scale, the student was offered several statements (from 2 to 7), each of which can be evaluated by a 5-point system: 1 point means the minimum value of the motive, 5 points mean the maximum. There are 34 statements in the questionnaire in total. The following scale is used to determine motivation levels in the group: the average value from 1 to 2.3 points is a low level of motivation, 2.4 to 3.6 points is the average one, 3.7 to 5 points is a high level of motivation.

The study also used the A.F. Fidler's technique of assessing the psychological atmosphere in the team, based on the Semantic Differential Technique (Fetiskin, Kozlov, Manujlov, 2002, 134). The survey template contains 10 opposite pairs of words, which form a set of 10 bipolar scales in the space of relationships within the team:

- friendliness – hostility;

- consent – dissent;
- satisfaction – dissatisfaction;
- fascination – indifference;
- productivity – unproductivity;
- warmth – coldness;
- cooperation – lack of cooperation;
- mutual support – unkindness;
- attraction – boredom;
- success – failure.

The student was asked to rate each bipolar scale from one point (extreme expression of the positive trait in a pair) to 8 (extreme severity of the negative trait). The lower the scores, the better the atmosphere in the group.

The survey involved 129 freshmen from two universities: Latvia's EKA University of Applied Sciences (EKA) – 67 students, and Russia's Smolensk State University (SmolSU) – 62 students. Students of Smolensk University are studying in economic area of training, Riga EKA – in the areas of economics, information technology and design. The survey among freshmen was conducted a few months after the beginning of the study year (December 2019), when some above-mentioned decrease in the initial motivation had already occurred. The time of the survey was also chosen with the expectation that students would be able to appreciate the atmosphere of the recently formed student group.

Data analysis methods are table method, descriptive statistics, statistical analysis, comparison method, Spearman correlation analysis.

Results and Discussion

Analysing the data on educational motivation of students, the Cronbach's alfa coefficient for each of the two samples was calculated. In the Riga sample, it is 0.974, for Smolensk freshmen – 0.968. The high value of the indicator shows a high internal consistency of the data. For both national samples, the following descriptive statistics were calculated for 34 statements and 7 scales: mean value, mode (the most common assessment), dispersion, and coefficient of variation, showing the fluctuation of answers.

Table 1 presents the main statistical indicators by the groups of motives for EKA and SmolSU students, and in general for the questionnaire.

Table 1

Statistical indicators of the learning motivation of the first-year students of Riga and Smolensk by groups of motives and in general on the questionnaire

Scale of learning motivation	EKA				SmolSU			
	Mean (M)	Mode (Mdn)	Disper-sion	Coefficient of variation (CoV, %)	Mean (M)	Mode (Mdn)	Disper-sion	Coefficient of variation (CoV, %)
Communication motives	3.46	3	1.51	35.52	3.51	4	1.35	33.10
Avoidance motives	2.40	1	1.64	53.36	2.47	1	1.57	50.73
Prestige motives	2.93	1	2.02	48.51	3.1	4	1.56	40.29
Professional motives	**4.30**	5	0.76	20.27	**3.70**	4	1.48	32.88
Creative self-realisation motives	3.66	5	1.48	33.24	3.25	4	1.34	35.62
Educational/cognitive motives	3.65	5	1.25	30.63	3.38	4	1.24	32.95
Social motives	3.13	3	1.54	39.65	3.52	5	1.31	32.52
Indicators on the questionnaire as a whole	3.38	5	2	41.84	3.3	4	1.77	40.32

As can be seen in the table, the overall motivation and average motivations on each of the seven scales of motives are at an average and high level. In both samples, the highest average value of motivation was for the scale of professional motives. In the Riga and Smolensk samples, this value is 4.3 and 3.7, correspondingly. Considering all scales, the averages of the overall motivation are very close: $M = 3.38$ (Riga) and 3.3 (Smolensk); the difference is insignificant (0.08 points). The most common assessment $Mdn = 5$ in Riga and 4 in Smolensk. However, a high CoV on all scales (sometimes more than 33 %) indicates a high fluctuation of answers in both samples and atypicality of the indicators M and Mdn.

With the help *of the Statistica* program, a statistical comparison of the two groups was made by the average of the overall academic motivation for each respondent. In this aspect, the analysis did not show statistically significant differences in the responses of Latvian and Russian students. The comparison was made using the Wilcoxon-Mann-Whitney U test and the Wald-Wolfowitz criteria. Results of the Wilcoxon-Mann-Whitney criterion are the following: the empirical value of the criterion $U_1 = 0.57$, critical $U_0 = 1.96$; the characteristics of the compared samples coincide at a significance level $p = <.05$. The criterion of Wald-Wolfowitz also shows the absence of statistically significant differences.

However, the analysis reveals some differences in the results of freshmen from the two countries. Students assess the importance of the motivation groups somewhat differently. Table 2 presents the ranking of the motive groups in the two samples.

Table 2

Ranking of motive groups in samples of Riga and Smolensk

Rank	EKA	SmolSU
1	Professional motives	Professional motives
2	Educational/cognitive & Creative self-realisation motives	Social & Communication motives
3	Communication motives	Educational/cognitive motives
4	Social motives	Creative self-realisation motives
5	Prestige motives	Prestige motives
6	Avoidance motives	Avoidance motives

It is gratifying that for freshmen of both universities the most important is professional motivation, which comes first. However, there are differences in the distribution of the 2nd to 4th places. For Riga students, educational/cognitive motives ($M = 3.65$, $Mdn = 5$) and motives of creative self-realisation ($M = 3.66$, $Mdn = 5$) are in the second place. The first-year students like to learn ($M = 3.24$), they want to acquire solid knowledge ($M = 4.15$), believe that knowledge will be useful in the future profession ($M = 4.31$). The relatively low variation rate on the scale of educational/cognitive motives indicates the statistical consistency of the EKA first-year students' responses.

Smolensk students rated professional motives on average 0.27 points lower with the most common score of 4. In the second most important place for them are social motives of learning ($M = 3.52$, $Mdn = 5$) and communicative ($M = 3.51$, $Mdn = 4$). For example, a good motivation for them is the dependence of the level of material security in the future and career advancement on academic success (relatively, $M = 4.12$ and $M = 3.8$, $Mdn = 5$ in both items). Thus, the freshmen of Riga are more focused on studying and self-learning as a creative personality**,** whereas Smolensk students are more attracted to communication and socialisation, which, however, is quite normal for first-year students.

The fact that the motives of prestige in both samples are located in the penultimate place can be considered positive. To become professionals and obtain knowledge is more important for them than the external image of the university and profession. In the last place in both Riga and Smolensk samples are the motives of avoidance. This suggests that freshmen are learning (or not learning) not because they are afraid of being judged for their choice.

On the scale of professional motivation, students of the two countries showed the highest score, so it is worthwhile to consider it more in detail. The group of professional motives consists of six statements, which were estimated from 1 to 5 points. Table 3 provides the key statistics for both samples.

As can be seen in the table, on all statements Riga students show higher average scores. Riga students put the statement "I want to make full use of my skills, abilities and inclinations for my chosen profession" in the first place ($M = 4.52$), which speaks about the conscious choice of the future profession considering own abilities. In the second place they put the statement "I study because I like the chosen profession" ($M = 4.49$). *CoV*-s in all statements are low (less than 33 %), which indicates the consistency of the opinions of Riga freshmen and the reliability of the average scores.

Table 3

Statistical indicators of professional motivation of first year students of Riga and Smolensk

Statements of the Scale "Professional motives"	University	*M*	*Mdn*	Dispersion	*CoV* (%)
1. I study because I like the chosen profession	EKA	4.49	5	0.65	17.91
	SmolSU	3.50	4	1.53	35.37
2. To ensure the success of future professional activities	EKA	4.09	5	0.90	23.21
	SmolSU	3.73	4	1.45	32.30
3. I want to become a specialist	EKA	4.45	5	0.61	17.63
	SmolSU	4.00	4	1.17	27.00
4. To propose a solution to the most pressing problems related to the future profession	EKA	3.81	5	1.10	27.53
	SmolSU	3.16	4	1.67	40.88
5. I want to make full use of my skills, abilities and inclinations for my chosen profession	EKA	4.52	5	0.59	16.94
	SmolSU	3.85	5	1.46	31.38
6. To become a highly qualified professional	EKA	4.42	5	0.73	19.36
	SmolSU	3.97	3	1.63	32.15
Indicators on the scale as a whole	EKA	4.30	5	0.76	20.27
	SmolSU	3.70	4	1.48	32.88

Smolensk students, on the other part, put studying to become specialists and highly qualified specialists in the first place ($M = 4.00$ and $M = 3.97$, correspondingly). The latter statement is more of a control one. On 4 out of 6 statements of this scale, the variation rates in the Smolensk sample are low, which suggests the average scores of these statements are typical. However, not all Smolensk freshmen are sure that they like their choice of profession. The average score for this statement is lower than that of Riga students' by almost 1 point ($M = 3.5$). High variation ($CoV = 35.37$ %) proves that many have responded negatively. 13 people give this statement a negative rating (1-2 points), which is 21 % of all respondents. Perhaps the choice of profession for these students was made by parents, or the students chose this area because of low school performance, as they could not enter the program, they wanted because of high competition for entering university. In this case, they clearly have a weak motivation to study at the university. A comparison of the answers to this question suggests itself with the assessment of the statement "I just like to learn" from the scale of educational/cognitive motives. In Smolensk, there are many those who put 1-2 points on this statement: 21 freshmen (33.9 %). In the Riga sample, the number of those who do not like to study is 17 people or 25.4 %, which is anyway quite a lot.

The greatest variability of Smolensk students' opinions on the statements in the scale of professional motives is observed in the answers to the question "I want to propose a solution to the most pressing problems related to the future profession" (CoV =40.88 %). This suggests that many students do not want to immerse themselves in the profession deep enough to engage in research activities in the chosen field.

To establish the dependence of the overall academic motivation on the responses to individual questionnaire statements, the survey was analysed by rank correlation. It was found that the overall academic motivation of first-year students statistically depends on almost all 34 questionnaire statements. In the Smolensk sample, *Spearman's* rank *correlation coefficient* shows a statistically significant correlation between motivation and all but two statements: "Once in the university, I have to study to finish it" and "I study for the sake of fulfilling the duty to parents and school". Spearman's correlation *coefficient* in the Riga sample gives a statistically significant dependence of the overall motivation on all statements.

The study tested the hypothesis that the level of student motivation is related to the psychological climate in the student group. To do this, the technique "Assessment of the psychological atmosphere in the team" by A.F. Fidler was applied, in which respondents rate relationships in a group by pointing from 1 to 8 on ten bipolar scales: friendliness – hostility; consent – dissent; satisfaction – dissatisfaction; fascination – indifference; productivity – unproductivity; warmth – coldness; cooperation – lack of cooperation; mutual support – unkindness; attraction – boredom; success – failure.

In general, freshmen of both countries positively perceive the psychological climate in their groups: in both samples, the averages for all ten bipolar scales are below 4 (the lower the scores, the better the atmosphere in the group). Riga students assessed the psychological atmosphere in the group by an average of 2.77 points out of 8 possible. Particularly positive are such manifestations of relationships in the group as friendliness ($M = 2.07$), consent ($M = 2.54$), mutual support ($M = 2.54$) and cooperation ($M = 2.45$). Only on two bipolar scales, the averages in the Riga sample are above three. The "fascination – indifference" has indicators $M = 3.36$ and $Mdn = 3$; the scale of "attraction – boredom" has $M = 3.22$ and $Mdn = 4$ (!).

Smolensk students estimate the overall atmosphere in the group by $M = 3.24$ points, which also indicates a positive perception of the psychological atmosphere in the group. However, in general the indicators are slightly less positive than in the Riga sample. Indicators of cooperation ($M = 2.76$), friendliness ($M = 2.81$ points) and mutual support ($M = 2.92$) obtained the best values. The most negative average ratings were found on the scale "productivity – unproductivity" ($M = 3.6$, $Mdn = 3$), "fascination – indifference" ($M = 3.56$, $Mdn = 2$) and "attraction – boredom" ($M = 3.50$, $Mdn = 3$).

The calculation of Spearman's correlation between the level of psychological atmosphere in the student group and the overall motivation score reveals a statistically significant dependence (although a weak one) in the Smolensk sample ($r = -0.292$; $p = <.05$). This dependence is inversely proportional, that is, the better the atmosphere in the group (the lower score on this basis), the higher the motivation of students. The motivation of Smolensk freshmen is particularly positively influenced by the overall atmosphere of success in the group (moderate correlation, $r = -0.33$; $p = <.05$).

In Riga sample, no correlation between the overall educational motivation and the level of psychological auspiciousness in the group was found. This may mean that, compared to Smolensk students, Riga students are, on average, more individualists, and their motivation is less driven by the social environment. It should be noted, however, that this result is intermediate, as the issue requires further study and a more detailed analysis of the correlations between individual groups of motives to learning and the scales of the psychological atmosphere.

The study shows that a few months after the start of studying, the academic motivation of first-year students is at an average level. However, for more successful training, it could and should be improved. To increase motivation for learning, one can influence students who do not like learning by changing their understanding of learning. At the same time, the teacher may more often introduce less familiar methods and forms of education, such as the project method, classes in the museum, at work or in the yard of the university. The involvement of students in the learning process is facilitated by an individual approach on the part of teachers, the widespread use of formative assessment, democracy and maximum freedom for students in organising the educational process (e.g., a self-dependent choice of assignment options).

More attention needs to be paid to creating an auspicious psychological atmosphere for learning in student groups. It is quite difficult to influence it by teachers who rarely see students, but it can be done by the curator, employees of the dean's office or SIC (Student Information Centre). Especially in the first weeks and months of the study, joint efforts of student self-government, administration and academic staff of the university are needed, aimed at adapting freshmen to new conditions (individual attention to each student, general conversations-acquaintances a story about the faculty, rites of passage of students, trainings aimed at uniting the team).

Conclusions

The study shows that a few months after the start of studying, the academic motivation of first-year students is at an average level:

- professional motives for learning prevail over other motives in the Smolensk and Riga samples, but are more pronounced in the Riga sample; the answers of Riga students are more consistent, the average motivation ($M = 4.3$) is typical for the students surveyed.

- first-year students of Smolensk are more motivated to communicate and socialise than to gain knowledge: their educational/cognitive motives are in the third place (in Riga – in the second, along with the motives of creative self-realisation);

- for the Smolensk sample of students, it was found out that their motivation to learn depends on the psychological atmosphere in the group, especially on the overall atmosphere of success in the student group;

- to increase motivation, one needs to work on improvement of the atmosphere in the student group, by changing the understanding of the study by some students through a combination of both traditional and innovative methods and forms of learning, individual and democratic approaches.

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The Relationship between English Language Skills and Learning Needs of Secondary School Students

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Abstract: Students learn English with certain motives. Many students seek to improve their careers, others seek to gain confidence, and others plan to live abroad. Thus, the problematic question arises: how do English language skills and learning needs of secondary school students relate to each other? The research aim is to designate the relationship between English language skills and learning needs of secondary school students. The methods of descriptive statistics were used. The Spearman rank correlation coefficient was applied. Mostly the medium correlation and a weak correlation were dominated between English language skills and learning needs. The analysis disclosed that students give more priority to receptive skills – reading and listening than to communicative - speaking and writing skills.

Keywords: English language skills, learning needs, secondary education.

Introduction

Lithuania's international and intercultural cooperation between the countries, the process of integration into the European Union and other international organizations, and the changing social and political situation in Lithuania and in the world raise new quality requirements for foreign language learning. Nowadays, educational institutions must train objectively and critically thinking citizens of the State. The Council Recommendation on Key Competences for Lifelong Learning emphasizes strengthening the functioning of multilingual competence. At the heart of this competence is the ability to use different languages properly and effectively in communication. It is based on the ability to understand, express, and interpret concepts, thoughts, feelings, facts, and opinions in both oral and written form (European Commission, 2018). Teaching a foreign language (English) means that English is taught in a country where English is treated as a "second language", for example, foreign language (English language), it means learning other languages than the mother tongue and it is a part of the curriculum (Lin, 2017). In Lithuania, this is regulated by the secondary school language program, which is used as a guide for the teachers.

Good language learners are willing to take risks, learn from their mistakes. On the other hand, good learners also use their first language skills when learning a second language. Z.V. Zhang (2020) argues that multi-faceted construct of student engagement encompasses major components in language learning, and show that engagement is essential to successful language learning. This is encouraging for foreign language teachers as they can provide instructional support and create an optimal learning environment to facilitate student's learning. An important feature of good learners' language is independence.

The English learning of secondary school students results in developing listening, reading, writing, and speaking skills. Nowadays authors (Manegre, Gutiérrez-Colón, 2020; Meinawati et al., 2020; Molway, Mutton, 2019; Naidionova, Ponomarenko, 2018) analyse key foreign language skills. L. Molway and M. Mutton (2019) disclose that students who received intervention training in reading strategies were considerably more likely than their peers to attempt the most challenging questions on the reading assessment. M. Manegre and M. Gutiérrez-Colón (2020) note that participating in knowledge building forums improved writing skills (grammar, syntactic structure, and accuracy) in the foreign language and comprehension of the material in the foreign language. J.J. Horgan (2017) suggests analysing students' experiences through written self-reflection because it allows making changes to the curriculum. According to A.V. Naidionova and O.G. Ponomarenko (2018) podcasts can be effectively used for motivating student interest in listening to English and providing them with exposure to native speakers' speech in authentic contexts. On the other hand, E. Meinawati, D.D. Harmoko, N.A. Rahmah, and N. Dewi suggest using YouTube as a media can be a good alternative media for teaching speaking in the class (Meinawati et al., 2020). In this way, students are speaking more expressive and don't have to worry about the phrases they use when speaking. Thus, the development of all these skills is the basis of language learning.

According to the classical theory of A.H. Maslow (2006), motivation is a constant and complex process, never-ending, and changing. The same behaviour can be motivated by different motives. Moreover, motivation is a psychological process that gives direction to an activity; it is an internal impulse to user needs. Needs, according to J.C. Richards (2001, 54), "the differences between what a student can presently do in a language and what he should be able to do". Students are constantly motivated by needs. R.C. Gardner (2010, 168) claims "motivation to learn a second language is influenced by group-related, context- related attitude, integrativeness, and attitudes towards learning situations respectively". The author's integrative motivation is the most suitable for language learning. The author defines integrativeness as "it is not a conscious decision on the part of the individual and . . . individuals may not be aware of it . . . The rationale underlying integrative motivation is that emotional factors can influence behaviour, sometimes in ways that are not even perceived by the individual concerned" (Gardner, 2010, 223–224). Gardner's theory shows that second language learning motivation consists of three components motivational intensity; a desire to learn the language, and attitudes towards learning the language. Needs are related to motivation, needs arise first, and then motivation arises into learners' minds. R. Gonzales and M.Y. Lopez (2016) distinguished career-economic, cultural understanding, communication, and collaboration, self-satisfaction, self-confidence, and cultural integration needs. Career – economic – is a need that is related to careers, finding a better job, financial benefits. Cultural understanding is a need that helps to understand the similarities and differences of another culture. Self-satisfaction need brings joy in learning English, and especially activities such as reading books, watching movies in English. Self-confidence need is a need that raises self-esteem. Cultural integration need is a need when learning English occurs to participate in the life of another culture. Students learn English with certain motives. Some seek to improve their careers, others seek to gain confidence, and others plan to live abroad. T.M. Thu (2009) states that students learn English through reading, listening, writing, and speaking skills. Thus, a problematic question arises: how do English language skills and learning needs of secondary school students relate to each other?

The aim of the research – to designate the relationship between English language skills and learning needs of secondary school students.

In accordance with the aim of the study, the following **objectives** were set: a) to identify the relationship between English language skills and learning needs of secondary school students by using Spearman's rank correlation; b) to analyse the relationship between English language skills and learning needs of secondary school students.

Methodology

Research question – what is the relationship between English language skills and learning needs of secondary school students?

Sample. A target criterion sample. Targeted selection is such a selection when the researcher selects elements into the sampling set depending on the purpose of the research and is selected according to certain criteria or decisions (Rupšienė, Rutkienė, 2016). The one who can provide meaningful information about the subject is selected. In this case, foreign (English) language learning is studied, so the target group is 12th grade students who learn English. The representative sample of the research is 93 students of 12th grade from Lithuanian secondary schools. According to gender 29 boys and 64 girls participated in the study. The average age is 18 years.

Methodological instrument. The T.M. Thu (2009, 57-58) questionnaire was applied to explore English language skills. A total of twenty statements were provided for 5 statements for each category: reading, writing, listening, and speaking. R. Gonzales and M.Y. Lopez (2016, 23) foreign language learning motivation questionnaire was adapted to learning needs. A total of thirty statements were provided for 5 statements for each category: career-economic, cultural understanding, communication and collaboration, self-satisfaction, self-confidence, and cultural integration needs. A 6-point scale was used: strongly disagree, disagree, disagree more than agree, agree more than disagree, agree, strongly agree. It was chosen because it is convenient and according to L. Rupšienė and A. Rutkienė (2016), it can be transformed into other scales (two or three-point scale) and this allows analysing the data using more diverse statistical methods.

Research ethics. The study according to K. Kardelis (2002) determines the main elements of research ethics as competence, volunteering, full information, and understanding. The questionnaire was intended for a 12th

grade student of age 18, so parental consent was not required. Voluntary participation in the study was ensured and confidentiality was ensured, the respondent did not have to provide either name or surname.

Data analysis. Statistical analysis was performed using "Social Sciences Statistics Package" (SPSS 17) for Windows. The methods of descriptive statistics were used. In this research, the internal compatibility was measured using Cronbach's α criterion. To designate the relationship between English language skills and learning needs, the Spearman's rank correlation was applied. According to J. Hauke and T. Kossowski (2011), Spearman's rank correlation coefficient is a nonparametric (distribution-free) rank statistic proposed by Charles Spearman as a measure of the strength of an association between two ranked variables. According to J. Lani (2010), a positive correlation coefficient indicates a positive relationship between the two variables (the larger A, the larger B), while a negative correlation coefficient expresses a negative relationship (the larger A, the smaller B). A correlation coefficient of 0 indicates that no relationship between the variables exists at all. In this case, a positive relationship between the two variables (the larger A, the larger B) has been analysed.

Results and discussion

One of the most important quality research characteristics and quality criteria of instruments, ensuring the accuracy and stability of measurements, in this study the reliability of the instrument is focused on the assessment of its internal compatibility and correlations between variables. The internal compatibility consistency approach is applied using Cronbach's α criterion. *English language skills (block A)* scale of Cronbach's $\alpha = 0.872$; $M = 81.63$; $S^2 = 250.734$; $SD = 15.835$; $N = 20$, so it can be assumed that the whole scale is a homogeneous and reliable measure. After checking each statement to see if removing it would increase Cronbach's α, no correlation coefficient greater than Cronbach's α was found, so the scale is good and no variable needs to be removed from it. *Learning needs (block B)* scale Cronbach's $\alpha - 0.939$; $M = 136.15$; $S^2 = 576.173$; $SD = 24.004$; $N = 20$, therefore, the whole scale can be considered as a homogeneous and reliable measuring instrument. After checking each statement to see if removing it would increase Cronbach's α, no correlation coefficient greater than Cronbach's α was found, so the scale is good and no variable needs to be removed from it.

The relationship between English language skills and learning needs of secondary school students

Spearman's rank correlation coefficient. Correlation values: up to 0.2 – very weak correlation; 0.2 to 0.4 – weak correlation; 0.4 to 0.7 – medium correlation; 0.7 to 0.9 strong correlation; more than 0.9 – very strong correlation (Williams, Monge, 2001). The significance level is chosen to be the lowest $p < 0,001$.

T.M. Thu (2009) questionnaire was applied to explore English learning skills. A total of twenty statements were provided for 5 statements for each category: reading, writing, listening, and speaking. Here and below in the text will be used abbreviations such as SA1, SA2, and so on. Due to this reason, every single question of the questionnaire is presented. Reading skills statements: SA1 – *When I get a dialogue task, I rehearse the future situation in my mind to make sure I can do it*; SA2 – *When I get a dialogue task, I rehearse a future situation with my classmate to make sure I can do it*; SA3 – *When I'm in a shop or cafe in my country, I try to imagine what I can say in English in this situation*; SA4 – *When I don't know how to say in a foreign language, I try to say it in other ways*; SA5 – *When I don't know how to say in a foreign language, ask the interlocutor to help me do it.* Writing skills statements: SA6 – *When I am writing, I try to choose a topic that would allow me to use what I know rather than forcing me to use what I don't know*; SA7 – *Before I start writing an essay, I make a plan of what I will write about*; SA8 – *I write everything in draft first, then correct the mistakes and provide the final version of the text*; SA9 – *When writing, I use familiar words and grammar rules more than I search for most words in dictionaries*; SA10 – *I can choose the right pattern of text to write depending on its purpose, such as writing an invitation, writing the address correctly.* Listening skills statements: SA11 – *I try to guess if not everything I understand what was said in English*; SA12 – *When I don't understand what was said during the conversation, I explain to the interlocutor exactly what I didn't understand*; SA13 – *I try to use my knowledge of the world to understand conversations, TV or radio shows or movies in English*; SA14 – *When writing, I use familiar words and grammar rules more than I search for most words in dictionaries*; SA15 – *If I don't understand what it's all about, I try to listen further to hear a hint to help me understand what is meant.* Reading skills statements: SA16 – *I use my knowledge of the sequence of events to understand an excerpt from the text*; SA17 – *I use my knowledge of English*

to understand unclear part of the text; SA18 – *I try to understand the meaning of unknown words in the text from the context*; SA19 – *I ask myself questions to check if I understand the text*; SA20 – *When I read unknown words in a dictionary, I think about the context in which they are used*.

R. Gonzales, M.Y. Lopez (2016) motivation questionnaire was applied. A total of thirty statements were provided. Here and below in the text will be used abbreviations such as SB1, SB2, and so on. Due to this reason, every single question of the questionnaire is presented. The career-economic needs statements: SB1 – Knowing English language leads to a better job; SB2 – *Knowing English leads to financial benefits*; SB3 – *Learning English is a preparation for my future profession*; SB4 – *Knowing English provides more opportunities after graduation*; SB5 – *Knowing English improves my career prospects*. The cultural understanding need statements: SB6 – *Knowing English will help me better understand other cultures*; SB7 – *I can understand more foreigners if I speak their language*; SB8 – *Knowing English gives me confidence in understanding other cultures*; SB9 – *English language is important to me in understanding other cultures*; SB10 – *Knowledge of a foreign language broadens my horizons about other cultures*. Communication and collaboration needs with foreigners' statements: SB11 – *Knowing a foreign language helps to communicate with foreigners in their native language*; SB12 – *When I know a foreign language, I can speak to foreigners in their native language*; SB13 – *Knowing a foreign language is easier to make connections with foreigners*; SB14 – *I am impressed when I hear a foreign language*; SB15 – *Knowing a foreign language is important when traveling to other countries*. The self-satisfaction need statement: SB16 – *I enjoy learning a foreign language when my friend brings me books in a foreign language*; SB17 – *I like to visit websites in a foreign language*; SB18 – *I like learning a foreign language because my friends like learning it*; SB19 – *I enjoy watching movies especially if they are in a foreign language*; SB20 – *I like learning a foreign language, in order pass the final exam*. Self-confidence need statements: SB21 – *I can communicate fluently in English in my classroom*; SB22 – *I like to communicate in English because I know it well*; SB23 – *I feel comfortable communicating in English in class*; SB24 – I like learning English even though it's *hard*; SB25 – *I am happy when the teacher notices my English progress in the classroom*. Culture integration need statements: SB26 – *I am learning a foreign language, to live in a foreign country*; SB27 – *I am learning a foreign language to communicate well with foreigners*; SB28 – *I study a foreign language because I am interested in the cultures of other countries*; SB29 – *Learning a foreign language helps me prepare for living in another country*; SB30 – *I am learning a foreign language to live in another culture*.

The relationship between English language skills and career – economic, cultural understanding needs

The correlation between English skills and career – economic needs. The mostly correlate listening and reading skills (Table 1). A medium relationship was found between listening SA15 and all statements of career – economic need ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)). This shows that the more students listen to the talker, they more understand the language, and they are more motivated to prepare for a future profession by improving their career prospects and finding a better job by gaining financial benefits from it. Exploring the relationship between statement SA13 and career economic needs statements a medium relationship was found between SA13 and SB1, SB2, SB3 ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)). It shows that students use knowledge of the world to understand conversations, TV or radio shows, or movies in English to find a better job and to prepare for a future profession. A medium relationship was found between reading SA16 and career – economic need SB1, SB2, SB5 ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)) statements. The correlation coefficient $p = 0.000$ ($p < 0.001$) indicates that the linear relationship of the variables is significant. This shows that the more students understand the text being read; the more motivated the profession is to find a better job with a good salary. Exploring the relationship between students' English reading skills statement SA17 and career economic need statements SB1, SB2, SB4, SB5, it was found a statistically significant relationship ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$). This means that careful reading is associated with motivation to improve one's career by finding a better job with a higher salary after graduation. The speaking skills statements and career economic need statement weakly correlate with each other. There is a weak correlation between SA1 and SB1 ($r = 0.2$–0.4; $p = 0.000$ ($p < 0.001$)), SA1 and SB2 ($r = 0.2$–0.4; $p = 0.000$ ($p < 0.001$)). This shows that students tend to engage in dialogue as this is weakly related to the prospects of better work.

Table 1

The correlation between English language skills and career – economic, cultural understanding needs ($p < 0,001$)

English learning skills (A)	Career–economic need (B)					Cultural understanding need (B)				
	SB1	SB2	SB3	SB4	SB5	SB6	SB7	SB8	SB9	SB10
Speaking skills										
SA1	0.373	0.365				0.362			0.361	
Writing skills										
SA6	**0.422**				0.329	**0.477**				
SA9	0.391									
SA10	**0.410**	0.388				**0.436**		0.397	0.361	0.379
Listening skills										
SA13	**0.462**	**0.455**	**0.440**		0.398	**0.531**	0.388	**0.462**	0.380	**0.414**
SA15	**0.537**	**0.499**	**0.413**	**0.509**	**0.437**	0.396	**0.407**	0.363		
Reading skills										
SA16	**0.454**	**0.459**		0.372	**0.431**	**0.404**		**0.402**		0.360
SA17	**0.531**	**0.508**	0.369	**0.516**	**0.522**	**0.415**	**0.475**	**0.402**		0.374

The correlation between English skills and the need for cultural – understanding. Mostly correlate reading skills and listening skills (Table 1). A medium relationship between reading SA17 and cultural understanding need SB6, SB7, SB8 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)) statements was found to exist. The correlation coefficient $p = 0.000$ ($p < 0.001$) indicates that the linear relationship of the variables is significant. Students are more confident in the perception of the text to understand other cultures. A medium relationship was also found between the statements SA16 and SB6, SB8 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)). It can be assumed that reading texts about other cultures, for example, in English textbook "Culture" section, deepens cultural understanding. A medium relationship was found to exist between listening SA13 and cultural understanding need SB6, SB7 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)) statements. This shows that watching or listening to English helps to understand other cultures and gain confidence. A statistically significant relationship was found between SA15 and SB6 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)). This shows that the more knowledge is used to understand TV, radio shows, or movies, the easier it is to understand the specifics of a foreign culture. A medium relationship was found between writing SA6 and cultural understanding need SB6 statements ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)). This shows that students choose essay topics that help them understand other cultures. A medium correlation between SA6 and SB6 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)) statements was also found to exist. This suggests that students choose a writing model based on cultural context. For example, to write an invitation in English, students need to follow certain English language rules. It was found that there is a weak relationship between speaking SA1 and cultural understanding SB6, SB9 ($r = 0.2–0.4$; $p = 0.000$ ($p < 0.001$)). This shows that dialogue learning is necessary to make connections with foreigners and understand the characteristics of their culture.

The relationship between English language skills and communication and collaboration needs with foreigners and self–satisfaction needs

The correlation between English skills and communication and collaboration needs with foreigners. Mostly correlate reading and listening skills (Table 2). A medium relationship was found between reading (SA16) and communication and collaboration needs (SB11, SB12, SB13) ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)). This shows that students use knowledge of the sequence of events to understand the text to communicate with foreigners in English language. SA17 and SB11, SB12, SB13, SB15 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)) statements. This shows that students develop reading skills to make contacts and communicate with foreigners in their common language. Also, they learn to read on trips to foreign countries because essential information in foreign countries is provided in English. Also, a medium relationship was found between listening SA13 and communication, and collaboration needs SB11, SB13 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)) statements. This shows that students, who watch English films, listen to radio programs, have a need to communicate with foreigners and cooperate more easily in their mother tongue. A medium relationship was found between SA6 and SB12 ($r = 0.4–0.6$; $p = 0.000$ ($p < 0.001$)) statements. This shows that students choose essays on the topic of which they have the most knowledge, and such knowledge of English encourages communication in correspondence with a foreigner. There was also a weak correlation between writing SA6 and SB13,

SA10, and SB13. This shows that students tend to choose a topic that will be useful for communicating in English in the future.

Table 2

The correlation between English language skills and communication and collaboration needs with foreigners and self – satisfaction need (p<0,001)

English learning skills (A)	Communication and collaboration need with foreigners' (B)					Self – satisfaction need (B)				
	SB11	**SB12**	**SB13**	**SB14**	**SB15**	**SB16**	**SB17**	**SB18**	**SB19**	**SB20**
Speaking skills Writing skills										
SA6		**0.429**	0.399							
SA10			0.388		0.386		0.363			
Listening skills										
SA11		0.385	0.349							
SA13	**0.420**	0.379	**0.424**				**0.489**		**0.499**	0.392
SA15		**0.444**	**0.443**		0.386					**0.406**
Reading skills										
SA16	0.427	0.446	0.461							
SA17	0.500	0.479	0.609		0.454		0.426			
SA18						0.367				

The correlation between English skills and self-satisfaction needs. The medium relationship was found between listening SA13 and self-satisfaction need (Table 2). SB17, SB19 ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)) statements. This shows that students use their knowledge of the world to understand movies and information online in English. Also, between SA15 and SA20 ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)) This shows that students are carefully developing their listening skills to pass the exam. A medium relationship between reading SA17 and self-satisfaction need SB17 statements was found to exist. This shows that efforts are being made to develop reading skills by understanding unclear parts of the text to be able to read information online in English. There was a weak correlation between writing SA10 and self-satisfaction SB17 ($r = 0.2$–0.4; $p = 0.000$ ($p < 0.001$)) statements. This shows that students tend to choose the right model of the written text on the internet. No correlation was found with the significance level ($p < 0.001$) between speaking skills and self-satisfaction need.

The relationship between English language skills and self-confidence and integration with other culture needs

The correlation between English skills and self-confidence need. Most correlate reading and writing skills (Table 3). A medium relationship was found between reading SA16 and self-confidence SB24, SB25 statements, and SA17 and SB25 ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)). This shows that students read the text so carefully and self-confidently when the English teacher notices their progress as well. Noticing a teacher's progress in understanding unclear parts of the text causes positive emotions.

Table 3

The correlation between English language skills and self-confidence and integration with other culture needs ($p < 0.001$)

English learning skills (A)	Self-confidence need (B)					Culture integration need (B)				
	SB21	**SB22**	**SB23**	**SB24**	**SB25**	**SB26**	**SB27**	**SB28**	**SB29**	**SB30**
Speaking skills Writing skills										
SA10	**0.427**	**0.406**	0.381		**0.414**		0.373		**0.418**	
Listening skills										
SA12	**0.419**	0.377	0.383							
SA13							**0.404**			
SA15							0.398			
Reading skills										
SA16				**0.406**	**0.427**					
SA17		0.394			**0.513**		0.383			
SA19				0.390						

Also, a medium correlation was found between writing SA10 and SB21, SB22 and SB25 ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)) statements. More practical writing skills are developed. the freer communication in the classroom, and the positive insights of the teacher encourage writing skills. A medium relationship was found between listening SA12 and SB21 ($r = 0.4$–0.6; $p = 0.000$ ($p < 0.001$)) statements. This shows that refining and understanding the speaker's language allows for freer English communication in the classroom. No correlation was found with the significance level ($p < 0.001$) between speaking skills and self-confidence need.

The correlation between English skills and the need for integration with other cultures. Mostly correlate writing and listening skills (Table 3). A medium relationship was found between writing SA10 and cultural integration need SB29 ($r = 0.4$–0.6, $p = 0.000$ ($p < 0.001$)) statements. Learning a foreign language helps students to prepare for living in another country. This shows that learning to apply a proper writing model is associated with emigration. Students believe that the completion of documents in English is the most needed when traveling abroad. Also, medium relationship was found between listening SA13 and cultural integration need SB27 statements ($r = 0.4$–0.6, $p = 0.000$ ($p < 0.001$)). This shows that students learn English by watching movies, listening to radio shows to communicate with foreigners in English. There was also a weak correlation between SA15 and SB27 ($r = 0.2$–0.4; $p = 0.000$ ($p < 0.01$)). A weak correlation was found between reading SA17 and need for integration with other cultures SB27 statements ($r = 0.4$–0.6, $p = 0.000$ ($p < 0.001$)). This shows that listening skills are developed to understand people from other cultures. No correlation was found with the significance level ($p < 0.001$) between speaking skills and the need for integration.

This analysis shows how students are integrated into English language learning. It is agreeable with R. Gonzales and M.Y. Lopez (2016, 18) research that learning depends on learner's motivation, on the other hand, the foreign language teacher must be enthusiastic in performing his or her job well. This research showed a correlation between English skills and learning needs. Comparing to T.M. Thu (2009) research and this research disclosed English learning skills of secondary school students. It is agreeable that all learning skills depend on practice and students learning motivation. Students' English learning the needs are similar to needs of D. Poedjiastutie and R. Oliver (2017) study. Students learn English to be: a) competitive in the employment market; b) be able to participate in international collaboration, and c) improve their life opportunities. F. Aziz and U. Quraishi (2017) study shows that spoken English would be learnt well by students. They agreed that for finding better jobs, competence in English is necessary.

Conclusions

The analysis disclosed that mostly correlated English skills are reading and listening skills. Reading skills medium correlate with cultural economic needs. Reading skills help to prepare for the future to find a better job with a good salary. Also, reading skills also correlate with cultural understanding need. Students read English texts to understand other cultures. A medium correlation was found between reading and communication and collaboration needs. Reading skills help to make contacts and communicate with foreigners in their common language. Also, reading skills medium correlate with self-confidence need skills. Students are self-confident when they are ensured in their knowledge and the English teacher notices their progress. Listening skills medium correlate with career economic need. Students develop listening skills to understand conversations, TV or radio shows, or movies in English or to find a better job in the future. Also, listening skills mostly medium correlate with cultural understanding need. Students watch or listen to in English to understand other cultures. Besides that, listening skills correlate and with self-confidence needs. Students use their listening knowledge of the world to understand movies and information online in English. The writing skills mostly correlate with cultural integration needs. Students learn writing to live abroad in the future. No correlation was found between speaking skills and the chosen level of significance with all needs, except between career-economic, cultural understanding it was found a weak correlation. Moreover, learning English depends on learner's motivation, on the other hand, the foreign language teacher must be enthusiastic in performing his or her job well. We can assume that students give the most priority to comprehension skills – reading and listening than to communicative skills – writing and speaking. In the future, the research is planned to develop more widely.

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Evaluation of IT Companies as Learning Organizations
from the Programmers' Perspective

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Abstract: The modern social science faces a new synergetic and social-ecological paradigm and the respective approaches in research activity. The synergetic approach allows for the investigation of a learning IT company as a "living" system, a synergic organization notable for its teamwork and team learning to ensure the introduction of innovations in the company and, along with that, a sustainable development and competitiveness of the company in a constantly changing environment. In its turn, the social-ecological approach allows a researcher to focus his attention on a continuous professional development of an individual programmer or a team of programmers by mutual cooperation and interaction with the whole IT company representing the environment of their professional activity and continuous learning. A learning organization has certain traits or indicators, which can be used for the evaluation of IT companies. The authors have developed a methodology for the evaluation of learning IT companies, which has been approved during the experimental research: a case study. 102 programmers working for various Latvian IT companies participated in the study. *The aim of the study*: to analyse the IT companies where the research participants work, evaluating them as learning organizations, as well as to assess the informational awareness and knowledge of the programmers about the continuous professional development and career growth possibilities at the respective companies. Among the 19 indicators (traits) of evaluation of a learning organization, the following three traits are the most typical ones for the IT companies where the research participants are working: (1) friendly atmosphere and mutual support within a company, cooperation when working as a team, sharing their knowledge, skills, competencies and experience while performing their work duties; (2) a company is trying to ensure its sustainable development and competitive ability; (3) self-education and continuous learning of a company to improve its activity and to diversify the variety of the target groups along with a continuous improvement of its products and services.

Keywords: evaluation, IT company, learning organization, programmers' continuous professional development.

Introduction

Nowadays the synergetic approach becomes topical in the social sciences, highlighting the role of synergy within an organization (Dhurup, Surujlal, Kabongo, 2016; Haken, 1985; Pakeltienė, Ragauskaitė, 2017; Tarba et al., 2019; Wang et al., 2020). The synergetic approach allows for the validation of an IT company as a *synergic organization*, which is able to cooperate, to change its internal structure according to certain goals and objectives of the activity, to be creative in the introduction of innovations to ensure its development and sustainability. The synergetic approach allows for the examination and evaluation of any organization, any IT company as a "living" system, which is able of self-organisation, self-development with the aim to ensure its viability in modern changing environment, as well as its sustainability in the long run (Bryanskiy, Pozharskiy, 2002; Haken, 1985; Katane, 2005; Katane, Katans, 2018; Prigozine, 1980; Shevlokov, 2016). *The synergy* in a synergic organization becomes actual not only in the common goal-based professional activity, which implies a well-coordinated teamwork, but also in common learning. A synergic organization as such is a *learning organization* that is capable and able to analyse the surrounding environment, the changes happening in this environment, as well as to assess its advantages and drawbacks.

Whereas, based on the ecological approach in the social sciences (Bronfenbrenner, 1979; Katane, 2005; Katane, Kristovska, Katans, 2014; Mas, Gomez, 2021; Säljö, 2020; Steiner, 2008), an important declaration has been made that both the professional development of the whole synergic learning organization and of its specialist is happening in interaction with the surrounding environment. The environment of professional activity plays a big part in the professional development of a specialist (Iriste, 2018; Katane, 2007). This main point can be applicable also for the programmers, whose

professional development happens in cooperation with the IT company (Katane, Katans, 2016) he works for. On the one hand, the continuous professional development of programmers not only ensures their competitiveness but also ensures the competitiveness and sustainability of the whole IT company. On the other hand, many IT companies have become the learning organizations, thus ensuring the possibility of continuous professional development of their specialists within the company's environment (Baranova, 2012; Chen, 2005; González-Torres et al., 2016; Bologa, Lupu, 2014; Katane, Katans, 2018; Katans, 2019; Lipowsky, 2017; Shujahat et al., 2019).

Nowadays, to ensure its sustainable development and competitive ability in the constantly changing conditions (environment), increasingly companies become learning organizations with the characteristic management of knowledge and competencies. The sprouts of a learning organization concept can be found at the end of the 20th century, but it is still developing and it is also highly topical nowadays (Anjaria, 2020; Antunes, Pinheiro, 2020; Barão et al., 2017; Bootz et al., 2019; Judrups, 2017; Serrat, 2017; Yang et al., 2020).

A number of basic insights characterising the learning organization was actualised already at the end of the 20th century (Garvin, 1993; Rozenholtz, 1989; Senge, 1990). New and wide thinking models have been created within a learning organization, which imply a free striving of a team in pursuing a goal to be achieved thanks to team learning, which is consistent with the basic principles of a synergic organization actualised nowadays. Within these organizations, people as personalities and as professionals are constantly enlarging their capacity, the specialists are learning from one another. A learning organization are able to create, acquire and transfer knowledge and to transform their activities based on the new knowledge and comprehension. The organizational learning has a *transformative influence* as it helps the organization: (1) to find and correct mistakes in its activities, thus maintaining the policy of its activities and achieving the set goals; (2) to change by modifying the existing norms, working strategies, directions and aims.

The cooperation in efficient learning organizations is connected with a *continuous professional development* throughout the career and *learning from personal experience and the experience of other people.* Nowadays, as a part of knowledge and competence management, many learning organizations are offering their specialists ample possibilities of formal and non-formal continuous in-company professional development (Argote, Hora, 2017; Bootz et al., 2019; Huang, Zhang, Huang, 2020; Katane, Katans, 2018; Kianto, Sáenz, Aramburu, 2017).

Scientists and practitioners have conceptualised the essence of professional development, where equal importance is attributed to both formal and non-formal continuous learning for professional development, including well-structured, specially organised in-company training courses, co-education or team learning, experience exchange, including improvised non-formal discussions with colleagues, thematic practical conferences and/or seminars, etc. (Halpin, Curtis, Halpin, 2015; Kennedy, 2016; Masoumi, Hatami, Pourkaremi, 2018; Mitina, 2004).

Working and learning by cooperating in a team is a characteristic feature of a learning organization, which can be referred to many IT companies, especially those where the programmers are working and cooperating within the *Agile* methodology. The process of continuous self-development of a team, experience-based training and close ties with the client is an integral part of the *Agile* methodology (Drury-Grogan, Conboy, Acton, 2017; Katans, 2019; Lipowsky, Schmidt, 2016; Lipowsky, 2017; St-Germain et al., 2020).

As the experience shows, many learning IT companies offer multiform mentoring aimed at promoting the continuous professional development of programmers. The multiformity of mentoring in various enterprises and institutions has been validated and explored by a number of authors (Bendickson, Madden, Matherne, 2020; Gay, 1995; Cranwell-Ward, Bossons, Gover 2004; Kačkere, Odiņa, Rieksta, 2005; Katans, 2019; Konstantinova, Rivža, 2007; Konstantinova, 2008; Krūzmētra, 2006). The experience suggests that to support the career growth of programmers, many IT companies have developed, approved and implemented the methodology for the evaluation of professional development of programmers during career talks. It allows for the understanding of problem areas that should be solved within the framework of knowledge and competence management of the IT company, including the promotion of each programmer's professional development.

At the same time, it is important for each programmer to know what are the possibilities of his/her professional development and career growth within the learning IT company. This information allows to self-manage his/her continuous learning and career at the company. Information awareness and knowledge about the possibilities of continuous professional development offered by the IT company, including special continuous professional training courses for programmers, forms of mentoring performed within the framework of knowledge and competence management, become a basis for professional self-development of programmers in interaction with the IT company as the environment of professional activity and continuous learning.

The aim of the study: To analyse the IT companies where the research participants work, evaluating them as learning organizations, as well as to assess the informational awareness and knowledge of the programmers about the continuous professional development and career growth possibilities at the respective companies.

Methodology

The research occurred in 2019 – 2020 and by definition it is a case study. In the research 102 programmers from various Latvian IT companies voluntary participated. The information about the research participants is summarised in Table 1, showing the age of the participants, the total work experience in years and the length of employment in IT companies.

Table 1

Descriptive information about the research participants (n=102)

N	Indicators	Min	Max	A	Me	Mo	$\overline{x}$
1	Age (years)	20	50	30	28	23	29.2
2	Work experience in total (years)	2	25	23	6	4	8,1
3	Programming work experience in IT companies (full years)	0 (...< 1)	25	25	4.5	4	7.2

The research participants represented the IT companies that can be characterised by two important criteria:

- *location*: 1) Latvia: Riga; 2) Latvia: near Riga; 3) Latvia: other city/town (the research participants do not work for any IT companies located abroad);
- *type of company*: 1) a Latvian company without representation abroad; 2) a Latvian company with a representation abroad; 3) a foreign company with a representative office in Latvia (the research participants do not work for any IT company that can be characterised as a foreign company without a representative office in Latvia.

Research methods: 1) methods of data collection: survey (questionnaire); 2) data processing: primary data processing for the obtaining of descriptive statistics (the number of positive responses (n), the coefficient of specific weight of positive responses, the rank sum of positive responses ($\sum_R$), overall rank considering both the sum of positive responses for each indicator and the sum of the positive response rankings ($R_{coeff.; \sum R}$); secondary data processing for the obtaining of the inferential statistics (Spearman's rank correlation coefficient r_s) by using the Spearman Rank Correlation Test (SPSS).

The questionnaire included 19 questions with the following options to answer: yes; rather yes than no; rather no than yes; no. The respondents had to choose one of the options. Entering the data in the SPSS 21.0 software, the responses were ranked from a very negative to a very positive response: "no" =1; "rather no than yes" = 2; "rather yes than no" = 3; "yes" = 4 (the results were summarised in a table).

The evaluation indicators represented the following indicators groups: (1) learning at an IT company as a guarantee for its sustainability and competitive ability; (2) learning and continuous professional development of programmers in a learning IT company from the perspective of knowledge management; (3) mentoring at an IT company as a part of the knowledge management; (4) methods for the evaluation of professional development of programmers in IT companies and the influence over their career's self-management.

Results and Discussion

Primary data processing for obtaining descriptive statistics. Firstly, the primary data processing was performed to obtain the descriptive statistics: 1) the number of positive responses (n) in accordance with every evaluation indicator, 2) the coefficient of specific weight of positive responses; 3) the rank sum ($\sum_R$). Ranking the results obtained, the coefficient of the specific weight of positive responses was firstly considered. If the coefficients were equal in accordance with several indicators, the secondary value used for ranking was the rank sum of positive responses ($\sum_R$). Consequently, the overall rank symbol is $R_{coeff.; \sum_R}$ (Table 2).

Table 2

Evaluation of IT companies as learning organizations, as well as the possibilities of professional development and career growth within such companies from the programmers' perspective: descriptive statistics (n=102)

N	Indicators	Positive Responses			$R_{coeff.; \sum_R}$
		n	Coeff. of specific weight	$\sum_R$	
1	Indicator 11. The company is characterised by a friendly atmosphere and mutual support, cooperation and teamwork, sharing their knowledge, skills, competencies and experience	102	1.00	378	1
2	Indicator 1. The company tries to ensure its sustainable development and competitiveness	96	0.94	363	2
3	Indicator 14. The company is self-educating and continuously learning to improve its activity and diversify the variety of target groups along with a continuous improvement of its products and services	96	0.93	339	3
4	Indicator 13. The company is flexible in reacting to the market demand and the needs of existing and potential clients	93	0.91	333	4
5	Indicator 3. The company has a tradition to attend various conferences, seminars and other events organised outside the company, to share the acquired knowledge and experience by giving presentations and organising discussions with their colleagues	93	0.91	330	5
6	Indicator 2. The corporate culture of the company attaches great importance to education and continuous professional development: it organises continuous professional training courses, seminars, conferences, as well as it has a tradition of sharing experience	93	0.91	321	6
7	Indicator 15. The company's specialists know the development strategy of the company, its corporate objectives and tasks to be performed in the near and remote future	90	0.88	327	7
8	Indicator 12. The company supports the proactivity of the specialists and their pioneering and creative activities	87	0.85	306	8
9	Indicator 5. The company investigates the needs of the continuous professional development of employees by providing flexible education and career development support	87	0.85	303	9
10	Indicator 6. The company has a well-developed mentoring system for rendering support to programmers and ensuring their continuous professional development	87	0.85	300	10
11	Indicator 19. Each programmer (respondent) is well aware of his career possibilities in the respective IT company and clearly understands the tasks to be performed to ensure his career growth	81	0.79	292	11
12	Indicator 10. The company ensures mentoring of novice specialists during their first year of employment	78	0.76	279	12

N	Indicators	Positive Responses			R$_{coeff.;}$ $\sum R$
		n	Coeff. of specific weight	$\sum R$	
13	Indicator 9. In cooperation with higher education institutions, the company ensures working environment-based training, offering the professional and pedagogic support of mentors for students during practice	75	0.74	243	13
14	Indicator 4. New knowledge, skills and competencies obtained during the continuous professional development are immediately used, thus promoting the introduction of innovations in the IT company	72	0.71	258	14
15	Indicator 8. The company has experienced career growth mentors and experts who regularly assess the professional growth of the employees	63	0.62	222	15
16	Indicator 7. The company has experienced education mentors who hold continuous professional training courses for the company's specialists	60	0,59	216	16
17	Indicator 17. The company's specialists are well aware of the criteria for the evaluation and self-evaluation of their professional development in accordance with the methodology elaborated by the IT company, to define their suitability to a certain position at the respective IT company they work for	60	0.59	210	17
18	Indicator 18. The methodology of the evaluation and self-evaluation of professional development (its indicators) existing at the respective respondent's IT company helps the programmer in his professional self-development and improvement, as well as in planning his career within the company	54	0.53	186	18
19	Indicator 16. The IT company of the respondent has the methodology for the evaluation of professional development available for all specialists, which is usually used during the career talks	48	0.47	168	19

The obtained results testify that the highest values of positive responses were obtained according to the following indicators (Table 2):

- Indicator 11: Coefficient of specific weight: 1.00; Positive response $\sum R$: 378; R$_{coeff.; \sum R}$: 1;
- Indicator 1: Coefficient of specific weight: 0.94; Positive response $\sum R$: 363; R$_{coeff.; \sum R}$: 2;
- Indicator 14: Coefficient of specific weight: 1.00; Positive response $\sum R$: 339; R$_{coeff.; \sum R}$: 3.

The highest values of assessment refer to the evaluation of an IT company as a learning organization. The respondents gave the highest assessment of the friendly, favourable atmosphere in the IT company they are working for, as well as of the possibility to work in a team, to cooperate by sharing their knowledge, skills, competencies and experience. From the perspective of the programmers who participated in the survey, the IT companies they are working for, take care and try to ensure their sustainable development and competitiveness, as the company is self-educating or continuously learning to improve its activities and diversify the variety of target groups along with a continuous improvement of its products (usage and quality) and production process as such.

The lowest values of positive responses were obtained according to the following indicators (Table 2):

- Indicator 17: Coefficient of specific weight: 0.59; Positive response $\sum R$: 210; R$_{coeff.; \sum R}$: 17;
- Indicator 18: Coefficient of specific weight: 0.53; Positive response $\sum R$: 186; R$_{coeff.; \sum R}$: 18;
- Indicator 16: Coefficient of specific weight: 0.47; Positive response $\sum R$: 168; R$_{coeff.; \sum R}$: 19.

These results attest that the lowest values of assessment were obtained within the indicator group representing the information awareness of programmers in relation to the evaluation of their professional development in the IT company they work for, which affects the self-management of their professional development and career growth.

The obtained results allowed to conclude that not all IT companies represented by the respondents have the methodology elaborated and used for the evaluation of professional development of programmers. If such a methodology still exists at the IT company represented by the respondents, then only 59 % of respondents know the criteria and indicators of assessment of this methodology, as there are problems with the exchange of information. Only 53 % (n=54) of the respondents answered that the methodology existing in the company helps them in their professional development and improvement, as well as in planning their career

within the company. Only 48 respondents (that is, less than half (47 %)) admit that the methodology for the evaluation of professional development and improvement, which is elaborated and introduced to all the specialists, is used at their IT companies during career talks and in the preparation for such talks.

The earlier studies in the field of the assessment of specialists' competitiveness (Iriste, 2018; Katans, Katane, Baltusite, 2020) attest that it is very important for both the specialists-to-be and for the existing specialists to know the criteria for their self-evaluation. This is attested by the transformational experiment results. During this experiment, the research participants were offered a possibility to familiarise themselves with a system of self-evaluation indicators. The obtained results allowed for the conclusion that there are critical differences between the self-evaluation before and after the experiment.

Secondary data processing for obtaining inferential (conclusive) statistics. During the next stage of data processing, all possible sets of pairs of features (indicators) have been compared (Table 3). The respondents' responses were offered in a verbal form, but they have been ranked by attributing mathematical values, moving from a strongly negative response "no" = 1 toward the strongly positive response "yes" = 4. Therefore, the Spearman's Rank Correlation Test was used for the secondary data processing. A number of indicator pairs have been selected for data processing, among which the semantic coherence can be found in the meaning of their wording.

Research question: is there a correlation between the respondents' responses in accordance with these pairs of indicators (set of features)? The correlation levels were defined and interpreted in accordance with the approach accepted by the research methodology in the field of social sciences (Pelšs, 2015).

The correlation in 50 pairs of sets of features was established, that is, among the respondents' responses (assessments) in accordance with the indicator pairs. The values of the correlation coefficient were obtained within the following limits: $0.50 < |r_s| < 1.00$: from moderately strong correlation to strong correlation. Table 3 summarises 7pairs of sets of features with the following limits of correlation values obtained in the result of comparing: $0.75 \leq |r_s| < 1.00$, which indicated moderately strong and strong correlation.

Table 3

Correlation results between the pairs of sets of indicators: Inferential (conclusive) statistics
(n=102)

N	Pairs of sets of indicators	Spearman's Test (r_s)	Conclusions
1	Indicator 16. The IT company of the respondent has the methodology for the evaluation of professional development available for all the specialists, which is usually used during the career talks Indicator 18. The methodology of the evaluation and self-evaluation of professional development (its indicators) existing at the respective IT company of the respondent helps the programmer in his professional self-development and improvement, as well as in planning his career within the company	0.85 ($|r_s| > 0.80$)	There is a statistically significant (strong) correlation
2	Indicator 2. The corporate culture of the company attaches great importance to education and continuous professional development: it organises continuous professional training courses, seminars, conferences, as well as it has a tradition of sharing experience Indicator 3. The company has a tradition to attend various conferences, seminars and other events organised outside the company, to share the acquired knowledge and experience by giving presentations and discussions with their colleagues	0.84 ($|r_s| > 0.80$)	There is a statistically significant (strong) correlation
3	Indicator 2. The corporate culture of the company attaches great importance to education and continuous professional development: it organises continuous professional training courses, seminars, conferences, as well as it has a tradition of sharing experience Indicator 4. New knowledge, skills and competencies obtained during the continuous professional development are immediately used in the professional activity of programmers and other specialists, thus promoting the introduction of innovations in the IT company	0.84 ($|r_s| > 0.80$)	There is a statistically significant (strong) correlation

N	Pairs of sets of indicators	Spearman's Test (r_s)	Conclusions
4	Indicator 13. The company is flexible in reacting to the market demand and the needs of the existing and potential clients Indicator 15. The company's specialists know the development strategy of the company, its corporate objectives and tasks to be performed in the near and remote future	0.84 ($\|r_s\| > 0.80$)	There is a statistically significant (strong) correlation
5	Indicator 8. The company has experienced career growth mentors and experts who regularly assess the professional growth of the employees Indicator 10. The company ensures mentoring of novice specialists during their first year of employment	0.79 ($0.5 < \|r_s\| < 0.8$)	There is a moderately strong correlation
6	Indicator 6. The company has a well-developed mentoring system for rendering support to programmers and ensuring their continuous professional development. Indicator 8. The company has experienced career growth mentors and experts who regularly assess the professional growth of the employees	0.78 ($0.5 < \|r_s\| < 0.8$)	There is a moderately strong correlation
7	Indicator 2. The corporate culture of the company attaches great importance to education and continuous professional development: it organises continuous professional training courses, seminars, and conferences, as well as it has a tradition of sharing experience Indicator 10. The company ensures mentoring of novice specialists during their first year of employment	0.75 ($0.5 < \|r_s\| < 0.8$)	There is a moderately strong correlation

The results of the inferential (conclusive) statistics demonstrated in Table 3 give evidence of a strong correlation in 4 pairs of compared sets of indicators and allows for making the following conclusions: 1) if the IT company has a methodology for the evaluation of professional development of programmers and there are clear criteria and indicators of assessment, it helps the programmers in self-management of their professional development and career growth within this company; 2) if the corporate culture of the company attaches great importance to education and continuous professional development: it organises continuous professional training courses, seminars, conferences, as well as it has a tradition of sharing experience, then this company will also have the tradition of sharing new knowledge and experience obtained by attending various conferences, seminars organised outside the company, by making presentations and organising discussions with their colleagues; 3) if the IT company became a learning organization, the culture of which attaches great importance to various traditions of continuous professional development, including continuous professional training courses, then this learning IT company will be equally notable for another distinctive indicator: new knowledge, skills and competencies obtained during the continuous professional development are immediately used in the professional activity of programmers and other specialists, thus promoting the introduction of innovations in the IT company; 4) a learning IT company is able to react to the market demand, as well as to the needs of the existing and potential clients, as the IT company specialists, including programmers, have a clear understanding of the company's development strategy, its corporate objectives and tasks to be performed in the near and remote future.

Conclusions

- There are three most distinctive aspects among 19 indicators (features) of the evaluation of a learning organization in relation to the IT companies, where the research participants work: (1) a company with friendly atmosphere and mutual support, cooperation while working in a team, sharing their knowledge, skills, competencies and experience during the performance of their work duties; (2) a company is trying to ensure its sustainable development and competitiveness; (3) a company is self-educating and continuously learning to improve its activity and diversify the variety of the target groups along with a continuous improvement of its products and services.

- In its turn, the lowest results were obtained in the group of indicators that represent the information awareness of programmers about the evaluation of their professional development and its methodology within their IT companies, as well as the influence of this methodology over the self-

management of their professional development and career growth. As a result, the following questions emerged, which should be answered within the respective companies represented by the respondents:

- o have all the IT companies elaborated and use the methodology for the evaluation of the professional development of programmers?
- o if such a methodology exists, are the programmers informed about its use for the evaluation of their professional development?
- o if the programmers are aware of the indicators of the methodology for the evaluation of their professional development existing in the IT company, does it help them in the management of their professional development and career growth within their IT companies, and does it help them in the preparation for the career talks with a career assessment expert/career growth mentor or a company's career counsellor?

- The obtained results testify that in general the IT companies represented by the respondents and assessed during the research correspond to the status of a learning organization.

- The results of the secondary data processing showed the correlation in 50 pairs of sets of features, that is, among the responses (assessments) given by the respondents. The correlation coefficient values were obtained within the following limits: $0.50 < |r_s| < 1.00$: from moderately strong correlation to strong correlation, which confirms the correlation not only between the content of the indicator wording (semantic meaning), but also between the assessments of the research participants in accordance with the respective pairs of indicators. This implies that the assessment indicators are represented in a clear and understandable manner; 2) the respondents fairly answered the questions included in the questionnaire; 3) the presented assessment methodology is valid and can be used also in other researches in respect to learning IT companies.

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Development of E-Learning in a Modern Technical University

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Abstract: The article is devoted to the increasing role and prospects for the development of e-learning in modern transformation of higher polytechnic education. In the context of preventing the spread of coronavirus infection COVID-19 and the transition of universities to various forms of distance education, this issue is of particular relevance. The aim of the study is to assess the process of introducing e-learning into the educational process of higher technical educational institutions in Russia. The methodological basis of the work was the analytical and systematic approach to the study of the object of research using methods of data systematization, evaluative analysis and forecasting, as well as logical generalization. The authors come to the conclusion that the introduction of e-learning in technical universities in Russia until recently played a supporting role in the reorganization and optimization of the processes of training engineering personnel. The development of e-learning helped to reduce the costs of the educational process, reduce the number of employees, as well as solve the problem of the classroom fund. An important role in the development of e-learning was played by the desire to increase the rating indicators. The desire to expand non-budgetary sources of funding for modern technical universities and the possibility of implementing new learning models were only additional incentives for expanding the e-learning system. The results of this study can be used in further studying the digitalization of higher education and assessing the prospects for the development of professional training in Russia.

Keywords: e-learning, technical university, educational resources, distance learning.

Introduction

Today, the accelerating digital transformation of the higher professional education system is one of the key factors in the development of a higher technical school. One of the leading areas for the introduction of information and communication technologies into the education system is e-learning, the role of which is especially noticeable at the moment when all universities in the country continue to function remotely in the context of preventing the spread of coronavirus infection COVID-19. Under the circumstances, the preservation of the quality and high level of domestic polytechnic education directly depends on the level of development of the electronic information and educational environment and especially the e-learning system, as well as the digital literacy of employees (Osina, Tolstopyatenko, Malinovsky, 2021).

The relevance of this study is determined both by the current conditions of the functioning of a higher technical school, and by the need for its development, considering the socio-economic transformations of the last decades and the prospects of the 4th industrial revolution. The current conditions are determined not only by the fight against the escalation of coronavirus infection (Zenner, Oshkina, 2020; Arora, Srinivasan, 2020), but also by the forced intensification of research activities and optimization of the educational sphere, commercialization of the latter with the achievement of variability, accessibility and mobility of educational programs. The key prospects for the development of polytechnic education converge on the tasks of training personnel with competencies corresponding to the challenges of the digital economy, as well as rapid changes in socio-economic and industrial realities.

Many western and domestic authors carefully studied the problems of introducing e-learning into the higher education system. However, much less attention has been paid to the role of e-learning in the development of technical higher education. Moreover, most of the publications on this topic are devoted to either the implementation of online education in individual universities in the country (Nikiforov, 2019; Efremova, Rybakova, Alekseenko, 2015; Chupandina, Semenikhina, 2018), or applied and extremely specific nuances of the implementation of information and communication technologies in the functioning of a technical higher education (Queiros, Gomes, De Oliveira, 2017; Balogh, Koprda, 2012). In recent years, more and more researchers are asking questions about the role of e-learning in the development of higher technical education. The growing importance of training highly qualified technical specialists in

a new economic situation requires an in-depth analysis of the e-learning system as one of the key factors in the development of technical universities in the country (Kozlov, Kankovskaya, Teslya, 2019).

The purpose of this study is to assess the process of introducing e-learning into the educational process of higher technical educational institutions in Russia to determine: the importance and role of online learning in the reorganization of the country's technical universities; the effectiveness of the Russian e-learning model in the field of professional training; the specifics of the relationship between the teaching staff and students of technical universities in the implementation of e-learning; the main directions for the introduction of new digital aspects of education and the selection among them of the most effective, and most importantly, meeting the planned development prospects of a higher technical school.

Methodology

A significant role in achieving the objectives of the study was played by SPbPU's internal regulatory documents and materials regulating the functioning of the electronic information and educational environment of the university. In the study and processing of the materials used in the article, the main ones were analytical and systematic approaches to the study of the research object using methods of data systematization, evaluative analysis and forecasting, as well as methods of pedagogical diagnostics. When formulating conclusions based on the research results, the method of logical generalization was used. The overall assessment of the results of the expansion of the e-learning system in technical universities took into account the experience gained by students and teachers using e-learning in an educational context. This experience was explored using an in-depth review and open-ended survey methods during the study.

To achieve the set research goals, we used the results of the conducted surveys in the form of a questionnaire among first-year students of SPbPU who are directly involved in e-learning initiatives. During the study, materials of a survey of the teaching staff were also involved, in which 120 teachers (10 from each SPbPU institute), 15 responsible for e-learning and distance learning technologies of the basic structural divisions of the university, heads of institutes and the SPbPU Center for Open Education took part.

Results and Discussion

Prospects for the development of polytechnic education are firmly associated with the new model of a technical university, which is so colourfully described by H. Etzkowitz, who considers the university to be the core of the knowledge society, the most important channel for technology transfer that plays a substantial role in the formation of a modern knowledge economy (Etzkowitz, 2008). The new technical university is considered a global, open, dynamically developing centre for the creation and commercialization of intellectual property, which not only fulfils orders for research and development, but actively creates technologies and technology companies (Kulik et al., 2020). This direction of transformation of the higher technical schools in Russia is also supported by the state.

Earlier, the idea of turning a university into a client-oriented organization that produces educational services was directly related to state policy in relation to higher professional education (changing the system of budget allocations, funding principles and system for evaluating the performance). The new model of a technical university, which occupies a leading position in the markets of high-tech sectors of the economy, is also a well-founded concept arising from government programs and initiatives (the Digital Economy national program and the earlier adopted National Technology Initiative).

The willingness to transform Russian technical universities is largely caused precisely by the accelerating digitalization of the economy, which directly affects projects for the modernization of higher professional education with the tasks of advanced restructuring and reorientation of specialist training. It should be noted that the qualitative changes in the reorganization of the country's leading technical universities in recent years have been directly related to the accelerated development of online education in the country's leading technical universities (Moscow Institute of Physics and Technology (MIPT), Moscow Institute of Engineering and Physics (MEPhI), Murmansk State Technical University (MSTU), Tomsk Polytechnic University (TPU), Peter the Great St. Petersburg Polytechnic University (SPbPU) and Ural Federal University (URFU)), and in other higher educational establishments (Higher School of Economics (HSE), Saint Petersburg State University (SPSU), Tomsk State University (TSU), Novosibirsk State University (NSU), Moscow State Institute of Music (MGIM), University of Information Technologies, Mechanics and Optics (ITMO), Moscow Institute of Steel and Alloys

(MISiS)). A striking example is Peter the Great St. Petersburg Polytechnic University, where a sharp acceleration in the development of the e-learning system was recorded in 2016, when the university model 4.0 was updated, and this coincidence is not accidental and very indicative.

The introduction of e-learning turns out to be one of the key points in the overall inevitable digitalization of a modern university and the desire to intensify all levels of the scientific and educational process, as well as to increase the efficiency and effectiveness of the management of an educational institution as a whole (Vershitskaya et al., 2020). Under the current circumstances of the new industrial revolution, a large amount of data, the speed of response to requests dictate the need to use information systems at almost every stage of the university's functioning. At present, the opinion of those researchers who note that the problem of the development of the information and educational environment becomes the main one for the education system as a whole sound quite justified (Krevskiy, Bershadsky, Glotova, 2018). However, it should be recognized that the intensive introduction of e-learning in the new educational policy was conditioned by a number of other and much more vital circumstances. The administrations of higher educational institutions tried to reduce costs and optimize the educational process, primarily in non-core, but mandatory components. The expansion of the scope of digital technologies was expected to save time and material resources, reducing the staff to resolve or alleviate the problem of the audit fund while the number of applicants is increasing. Expectations were justified, although certainly to different degrees, which turned out to be an important moment in the restructuring of technical universities and increasing the profitability of education.

Optimization and reduction, as well as an increase in the profitability of education, refer to the inevitable expansion of off-budget sources of financing of a modern university. A technical university is no exception, but in the current reality it is necessary to effectively combine the progressive commercialization of higher professional education with a qualitative update of the content and technological aspects of future professional training that meet the expectations and demands of the market. In the context of a forced struggle to increase the competitiveness of domestic higher professional education and the rapid technical and technological renewal of the system of higher technical schools in the world, the time allotted for the restructuring of polytechnic education is significantly reduced.

It is assumed that the thoughtful introduction of e-learning will significantly accelerate both the commercialization of educational services and the updating of the content and technological aspects of training the specialists in demand. Moreover, commercially effective online education is the innovative activity of the university, which is not only directly related to modern technical and technological solutions, but also acts as an element of the digital economy. Technological novelty, economic effects, cross-sectoral nature and orientation to the global market, all of this can turn e-learning into a point of joining scientific, educational and entrepreneurial activities with the formation of an ecosystem of innovations in the life of a technical university. In the current situation, it is important for a university to turn e-learning into a source of financial income, not costs. Meanwhile, Russian universities have not yet succeeded in this and, accordingly, today, not so much commercial as administrative procedures for the development of e-learning are in force.

Currently, each educational institution creates its own information and educational environment. The amount of invested funds, the interest in its improvement and the development of e-learning largely determines the competitiveness of the university not only in the Russian but also in the international market of educational services (Nie et al., 2020). Therefore, the leaders of Russian online education quite naturally become the country's leading universities that have sufficient funds and technical capabilities to create an extensive e-learning system with the placement of online courses on leading Russian and international platforms, such as the National Platform for Open Education, Coursera, edX. Figure 1 shows the presence of Russian universities on the open educational platforms Coursera and edX.

It is difficult to overestimate the role of education in the information era, and the rapidly growing market for digital educational services turns out to be an important component of the new economic situation. In addition, in the context of measuring the knowledge economy (mass introduction of cyber-physical systems into production, automation of production processes, endowing devices with artificial intelligence and total digitalization), the digital format of education is acquiring special significance in the life of a modern university. With the development and spread of information and communication

technologies, there has been a transformation of the human personality, according to the sociologists who study this problem (Rosenberg, Foshay, 2002).
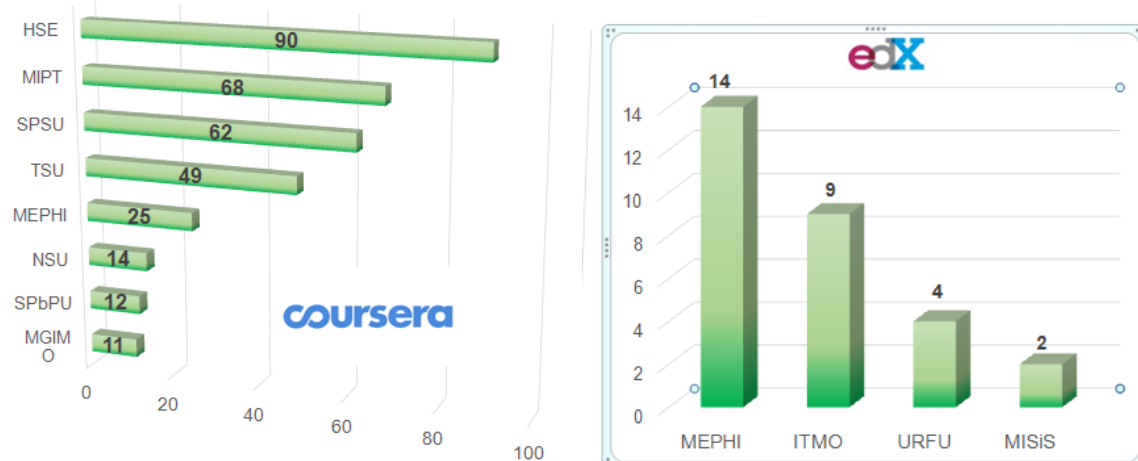
Figure 1. The presence of Russian universities on the open educational platforms Coursera and edX.

Indeed, a whole generation of people has grown up, for whom the mobile phone, computer and Internet are natural components of their living space, without which the functioning of any socio-economic system is unthinkable. Therefore, e-learning is as adequate as possible to the new digital format in key areas of the information society. In the future, the role of the digital component of educational services will only grow, and those universities that lag behind in the pace and quality of digitalization of education and commercialization of this sphere will find themselves in a very vulnerable position. The current situation is pushing Russian universities to activate the development of the e-learning system and increase the number of online courses, their students and qualified personnel involved in their development and administrative support. The pace of the development of Russian online education is clearly illustrated by the growth in the number of online courses on the National Open Education Platform, where in 2015 there were 51 courses, and in 2019 there were already 431 courses with almost 5 million listeners (Figure 2).
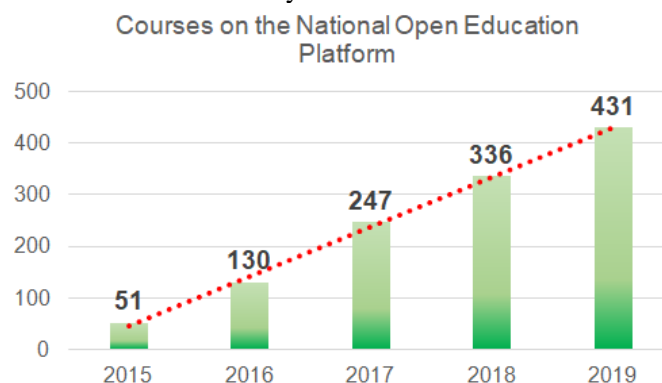
Figure 2. The pace of development of Russian online education.

The successful development of the e-learning system is possible if all basic components of the functioning and expansion of the e-learning system with competent personnel for its technical support and resource provision, a certain set of tools and technologies of information and educational space are available. At a minimum, it is necessary to have open education centres, educational portals, video conferencing, a number of electronic services (E-mail, file storage, virtual workstations) and various resources of the information and library complex (electronic catalogue, electronic library, databases). Developed e-learning system is an important indicator of the technological University, as connected with the use in the educational process of the latest achievements of information and telecommunication technologies in the design and improvement of e-learning. These conclusions are confirmed by the experience of introducing e-learning at Peter the Great St. Petersburg Polytechnic University. It is significant that the introduction and successful development of e-learning at SPbPU turned out to be closely related to the general digitalization of the university, which positions itself as a "digital university". The distributed e-learning system operates on the basis of the learning management systems

Moodle, Sakai and Open edX, the Clipbucket video hosting platform, the ITMOproctor remote supervision system, and the WordPress content management system. Today, the distributed e-learning system at SPbPU is a network of educational portals and Massive Open Online Courses (MOOC) courses on various platforms, which makes it possible to implement the modular design of educational programs, individualize the learning path, academic mobility, and build network interaction.

SPbPU educational portals include a central server and portals to all key (17) structural units of the university, including portals for graduate school and state final certification. External portals for SPbPU courses are the Modern Digital Educational Environment of the Russian Federation (https://online.edu.ru/), the National Platform "Open Education" (https://openedu.ru/), Coursera (https://www.coursera.org/), Project Lectorium (https://www.lektorium.tv/). The distributed e-learning system functioning at SPbPU also includes a number of auxiliary systems: a video hosting server, a proctoring system, a web conference service, and an Examus online proctoring service. The development of the e-learning system is closely related to the creation of an extensive electronic information educational environment of the university (EIEE), which includes electronic information resources, electronic educational resources, a set of information technologies, telecommunication technologies, appropriate technological means and ensuring the development of educational programs by students in full independently from the location of the students. Key components of EIEE: Personal accounts of employees / students and portfolio; University websites; IT services; Information and library complex; Automated educational process control systems.

EIEE provides students with access to curricula, work programs of disciplines (modules), practice programs and final certification with publications of electronic library systems and electronic educational resources specified in work programs for all educational programs implemented at the university. In addition, EIEE SPbPU provides all types of classes, procedures for assessing learning outcomes, the implementation of which is provided with the use of e-learning distance learning technologies. Participants in the educational process have the opportunity to form an electronic portfolio of students, including the preservation of works, reviews and assessment of these works by any participant in the educational process. Interaction is created between the participants of the educational process, including synchronous and (or) asynchronous interaction, via the Internet. Today, there is a lot of talk and writing about the acceleration limit of scientific and technical transformations in the conditions of the 4th industrial revolution and the need for a flexible system of polytechnic education that can quickly respond to changes in the socio-economic environment (Aladyshkin et al., 2020; Gabdrakhmanova, Izmailova, Vasilyeva, 2019). The traditional educational system, built on strict standards and unchanged during the implementation of a 4-or 6-year plan for training a specialist in the education strategy, does not have the time to master all innovations that occur in the advanced sectors of the modern economy, especially in conditions of technical uncertainty. Therefore, one of the main requirements for the higher professional education system today is its flexibility, changeability and openness (Gleason, 2018). Hopes are pinned on electronic forms of education for the possibility of implementing continuous, open education with a wide field of variability and interdisciplinary communication (Shipunova et al., 2018).

The obvious advantage of e-learning forms is their changeability, which is inherent in the universality of technological processes for creating, storing and using educational information resources (Katane, Katans, Vavere, 2012). The combination of information and communication technologies in modern universities is moving to a new quality of communication between students and educational institutions, when the "classic" e-learning is gradually replaced by smart education, characterized by adaptation to the user's needs during training. They are being modernized as information technology develops, which makes it possible to design an e-learning system, adjusting it in accordance with the current and future demands of the educational services market or changing the training format. The latter is well illustrated by the current situation, when, in the context of preventing the spread of coronavirus infection, almost all Russian universities have switched to partial or full distance learning. It is the distributed e-learning system created at SPbPU in recent years that has made it possible to forcefully transfer the educational process to a distance format.

It is believed that the developed e-learning system significantly facilitates the integration of the university and its individual programs directions into the international scientific community. The goal of creating a mobile, extensive system of additional training, retraining, and advanced training, which is not limited to the resources of the university, but is associated with the global scientific and educational community, with prestigious universities and world-renowned scientists, is quite achievable.

It is also important that the e-learning system is much easier to adjust. Existing educational programs and individual disciplines are supplemented, and they include separate blocks or competencies. As a result, the list of students' knowledge and skills becomes adjustable to meet changing socio-economic needs and challenges (Meskhi, Ponomareva, Ugnich, 2019; Gilmanshin, Gilmanshina, 2018).

Moreover, the variability of the educational process achieved through the e-learning system allows students to choose an educational trajectory, plan the time, place and duration of classes (Krasnov et al., 2018) If we turn to the experience of SPbPU, the university implements the so-called "Mobility Module" - an educational cycle within the educational program, which represents an additional educational trajectory for students beyond training in the main educational direction. The mobility module refers to the variable part of educational programs and is implemented as a choice of a number of disciplines by students. The curriculum mobility module is implemented in two optional disciplines:
1. "Educational Foresight", which includes two blocks: a mandatory block for all (1 credit unit) and a variable block (duration varies), containing a list of online courses offered for the study;
2. "Career adaptability", which makes it possible to credit learning outcomes obtained in the framework of academic mobility and/or in other organizations.

Independence in the choice of educational paths develops the skills of future specialists to search for information, the most effective solutions within their own training, the use of various sources of information to solve emerging problems, i.e., the skills that are so necessary in the new economic realities. Thus, the e-learning system significantly simplifies and accelerates the process of expanding the range of competencies of the student with the intensification of continuous self-development in a dynamically changing world. A modern technical university is also faced with the task of developing an educational model that makes it possible to accompany a person throughout the life through a flexible system of modules, courses, and programs at the request of the student and the challenges of the market.

The results of the survey conducted in the form of a questionnaire among SPbPU students and teachers who are directly involved in e-learning initiatives speak volumes about the positive perception of the increased variability of the educational process and the students' independent choice of the educational trajectory. Negative responses and problems noted by the respondents turned out to be associated with particular moments: the level of computer literacy, the level of technical support and university support.

The use of information and educational resources with access to them from any point of the network and their transfer to other addresses determines the maximum availability and mobility of e-learning, regardless of the geographical and temporary location of the student and educational institutions, researchers and scientific institutions. The weakening of barriers of space (distance, territory, borders) and time (time zones and work schedules) expands the boundaries of educational services of the university with access to many sources of scientific and educational information (electronic libraries, databanks, knowledge bases, scientific publications, etc.). The developed e-learning system allows to significantly reduce the costs that traditional classroom practice requires, providing living and learning conditions for foreign students, as well as attracting outstanding foreign specialists. It is no coincidence that the image of a virtual university is on the agenda, in which at least, a significant proportion of educational and scientific processes occur in virtual parameters (Dneprovskaya et al., 2018).

The development of EIEE at SPbPU sets new guidelines for thinking in the development of the educational process, ensuring not only intra-university needs, but the fulfillment of external orders and attracting outside students and listeners. Therefore, in the context of the prevention of coronavirus infection in the spring and summer of 2020, more than 40,000 people were recorded at SPbPU courses hosted only on the National Platform "Open Education" at the request of other universities. The teaching staff of the university is also actively involved in the development of courses, and the parameters of motivation include both the possibility of implementing a wide range of disciplines, advanced training and professional retraining programs, and the growth of the intra-university rating depending on the number of developed online courses, as well as percentage of the cost of network agreements concluded with partner universities / issued certificates.

If we return to the issue of optimizing the educational process in technical universities, it should be pointed out that it is often associated with both cost savings and the approval of strict priorities in the training of future specialists with a noticeable reduction in costs for non-core disciplines. Optimization of the educational process also implies the necessary reduction of the academic "load" of the teaching

staff for the state-forced intensification of research work of universities. Electronic forms of training were initially intended to improve the effectiveness of the teacher. Proponents of e-learning appeal to reducing the time spent searching, transmitting and working with educational materials, simplifying the processing of considerable amounts of data, and auto-mating many routine processes (checking tasks, student progress). As a result of freeing up the time of university employees, it becomes possible to transfer the load from educational practice to research work, activate publication activity and develop innovative training technologies. It cannot be said that today, as a result of the introduction of e-learning for the bulk of the teaching staff, there has really been a qualitative redistribution of the workload and the release of time for research work. This task remains rather for the future. Meanwhile, based on the example of SPbPU, we can conclude that there is an inevitable redistribution of functions among the teaching staff to those who accompany, support and actively participate in the expansion of the distributed e-learning system and those who implement the main pedagogical process or research activity.

There are different attitudes to e-learning and the openness of the educational process, and the Russian scientific community remains extremely ambivalent about distance learning technologies, especially in the bulk of the teaching staff of universities (Almazova et al., 2020). However, all world's universities are expanding their MOOC programs. Tens of millions of young people are studying online courses, and their number is only growing. The numbers speak volumes about the growing demand for e-learning. Figures 3, 4, 5 show five-year trends – from 2014 to 2018 and an increase in the number of users, courses and listeners on open educational platforms.
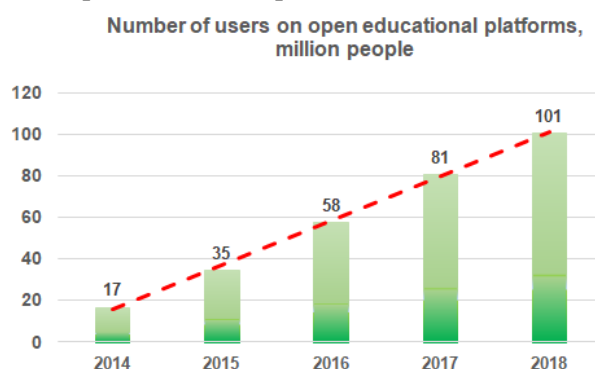
Figure 3. Dynamics of the number of users on open educational platforms.
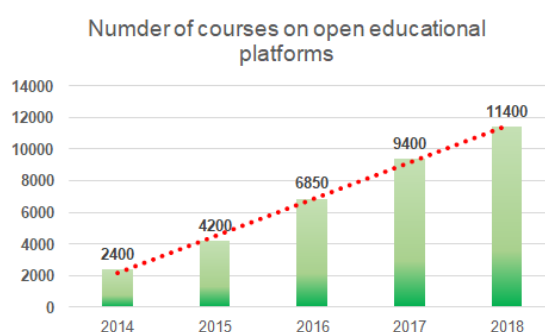
Figure 4. Dynamics of the number of courses on open educational platforms.

And after all, these are the numbers before those conditions for preventing the spread of the coronavirus infection COVID-19, which led to an unprecedented demand for online education. Perhaps, due to emergency circumstances and full-scale testing of the distance learning format for most educational institutions in developed countries, 2020 will be a turning point in the development of e-learning. Some of the effectiveness of online courses is as obvious as their profitability and commercialization opportunities. Ultimately, the introduction of e-learning is one of the measures to improve the scientific and educational reputation of Russian polytechnic education.
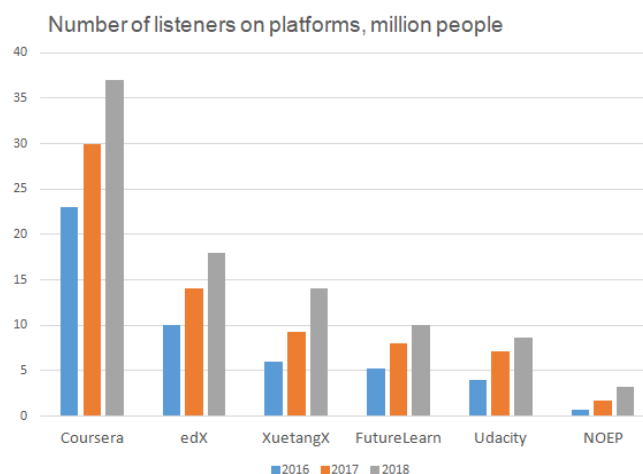
Figure 5. Dynamics of the number of listeners on platforms.

Thoughtful digitalization of polytechnic education with systematic and effective use of e-learning opportunities contributes to the necessary transformation of the national higher engineering school. At the moment, it is important for the University community to understand the direct relationship between the development of e-learning and the advanced renovation of the higher school of engineering, to transform Russian technical universities into global, open, dynamically developing centres for the creation and commercialization of intellectual property, occupying leading positions in the markets of high-tech industries.

And here it is necessary to clearly define the direction of the development of the e-learning system in the context of increasing the competitiveness of Russian technical universities, the formation of new models of their functioning with a variable and effective system of training engineering personnel adequate to the digital age:

- accumulation and implementation of world experience achievements in the further development of the considered sphere of educational technologies;
- focus on the future: understanding trends in future changes in e-learning, implementing and improving its smart components;
- progressive renovation of technical and technological components in the design and improvement of e-learning;
- innovative updating of forms and methods of training with the development of variability and adaptability of curricula and training formats in the light of changing socio-economic needs;
- qualitative deepening of the integration of electronic educational programs of Russian technical universities into the global e-learning system and the development of inter-national partnerships in this field;
- increase the profitability and commercial efficiency of online training;
- general development of the electronic information and educational environment of Russian universities.

Conclusions

At the moment, it is quite justified to say that the availability and successful development of the e-learning system is one of the most important conditions for the functioning of a modern competitive technical university. And it should be recognized that online education and the electronic information and educational environment of the institution in general are well-established not only in the list of integral components of a modern higher technical school, they are increasingly associated with the future of polytechnic education.

The main conclusion of the study is that, until recently, the introduction of e-learning in technical universities in Russia played a supporting role in the reorganization and optimization of the processes of training engineering personnel. The development of e-learning helped to reduce costs and optimize the educational process, primarily in non-core, but mandatory components, as a result, and a reduction

in the number of employees and, if not resolution, then mitigate the problem of the classroom fund against the background of an increase in the number of applicants. An important role in the development of the e-learning system was played by the fact that its development turned out to be an important component in the rating indicators. Therefore, the accelerated timing of the introduction of e-learning (as some researchers write) was not dictated by the prospects of the 4th industrial revolution and the accelerated digitalization of the economy, but by the tasks of reorganizing and optimizing the educational process.

The desire to increase the profitability of education and expand non-budgetary sources of funding for a modern technical university were only additional incentives for expanding the e-learning system. Moreover, it was not possible to achieve commercial efficiency, the formation of stable income streams and less dependence on budget financing.

However, today, other promising areas for the further implementation and development of online learning are quite clearly emerging: 1) training of new specialists that meet market expectations; 2) the formation of information conditions for the creation of advanced technologies and technology companies (in cooperation with the business community, industrial leaders – Russian and global); 3) the possibility of implementing modular construction of educational programs, as well as individualizing the learning path; 4) increasing the competitiveness of the university in the rapidly growing digital market of educational services.

When evaluating the e-education system, it is always important to keep in mind that it is based on those information and communication technologies that are crucial or, as they are often called, critical technologies. The latter imply an intersectoral nature, create significant prerequisites for the development of many technological areas or areas of research and development, and together make a major contribution to solving key problems of development and progress. Today, there is every reason to agree with the opinion that the role of critical technologies in education is related to those forms of education that are built on the means of information and computing and telecommunications technologies, i.e., with the electronic format of education.

The results of this study can be used in further studying the digitalization of higher education and assessing the prospects for the development of professional training in Russia.

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Transversal Skills in Mathematics Curriculums of Latvian Secondary Education: 1940-2020

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Abstract: Digital technologies are rapidly changing our daily lives and work environment, encouraging the review of current curriculums in schools. The implementation of the new curriculum in Latvian schools begins on September 1st, 2020. As transversal skills as a term are included for the first time, teachers feel confused regarding the inclusion of such skills in the learning process and the implementation of experience in practice in the new context, simultaneously raising doubts about their professional capacity in practice, teachers are guided by the requirements of the curriculum. The study focuses on the analysis of 11 secondary school mathematics curriculums, using document analysis. The aim of the research is to analyse transversal skills and their development in secondary school mathematics curriculums, by analysing various mathematics curriculums in Latvia from 1940 to 2020. It is essential to accentuate the importance of transversal skills and content that has assisted in the development of transversal skills in earlier teaching practice, to aid teachers in choosing methods and activities that are applicable, as well as necessary changes to achieve new education goals. The research results indicate that transversal skills have been essential in previous mathematics curriculums. The most important transversal skills that have been highlighted in all analysed curriculums are thinking skills, skills that are necessary for individual work and career skills. The new challenges are related to transversal skills that are required for civic activity, the use of different learning methods and lifelong learning.

Keywords: secondary education, mathematics curriculum, transversal skills.

Introduction

There are significant changes in society which have an impact on learning and work environment, and therefore, the necessity for transversal skills has increased significantly (European Commission, 2018; European Commission, 2019) as an instrument for lifelong learning, as well as a skill set required for everyone to navigate in today's changing world. Students should be prepared for jobs not yet created, technologies that have not been invented or even are not imaginable yet (OECD, 2019). The development of transversal skills is not only important for students to prepare for future job or education challenges, but it is essential for students to be properly prepared for a meaningful, sustainable and responsible life in a rapidly changing and interconnected world (Trzmiel, 2015). Although transversal skills and their role have been studied for several decades in the context of education, there are still significant challenges related to both the use of terminology and the meaningful implementation in every-day practice and school curriculum.

There are many terms to refer to general skills applied in the various initiatives which define and improve the understanding of the concept of transversal skills. All terms used to refer to transversal skills, for instance, non-technical skills, 21st century skills, transferable skills, soft skills, generic skills and many other terms, generally relate to the skills, competencies, values and attitudes essential for the comprehensive development of learners, such as cooperation, self-discipline, resourcefulness and respect for the environment (Trzmiel, 2015). The origin and use of various terms may relate to local, governmental, or global characteristics and needs. The wide variety of terms leads to inconsistency that significantly complicates the research process. There is still no clear view on how best to prepare pupils for a successful and meaningful life outside the classroom (Trzmiel, 2015) and which of the skills are needed to overcome these challenges.

Since the integration of transversal skills into education practices may require significant changes in the learning methodology, the implementation of this process is closely linked to teachers and their professional activities (Trzmiel, 2015). One of the most significant challenges of the teacher's day-to-day classroom activities is the lack of understanding of the necessity to change their learning and evaluation practice (Care, Luo, 2016). Transversal skills are widely applied; interdisciplinary skills that go beyond a specific area or curriculum (Flora, 2014) are needed to successfully adapt to changes and live a meaningful and productive

life (Trzmiel, 2015). Transversal skills are characterised by personal autonomy and responsibility, social interaction, personal and professional development (Ipate, Mitran, Pârvu, 2014).

The new curriculum implementation process has been started in Latvian schools since September 1st, 2020 (Skola 2030, 2018). This is the first school curriculum in Latvia, which refers to the actual term "transversal skills". To change current classroom practice and to successfully introduce the new content, it is essential to comprehend that although part of transversal skills has not been included in previous school curriculums, a large part of transversal skills, directly or indirectly, can be found in previous school curriculums and has been developed in the learning process for many years.

Consequently, there is a need to analyse previous and new curriculums, raise awareness and distinguish which transversal skills are actually well-known and have already been successfully included in classroom practice for decades, and which of the skills in the curriculum are newly introduced, thus, requiring teachers to devote additional attention to adjust the teaching methodology to address this challenge. Such an approach would allow teachers not only to better understand the nature of transversal skills by connecting new methods and knowledge with previous practices, and would allow them to focus on the development of transversal skills that have been integrated into the curriculum relatively recently. Better understanding of transversal skills and their connection with secondary school mathematics would not only lead to a better understanding of transversal skills and their importance in teaching practice, but would address one of the major challenges of integrating transversal skills – teachers' heavy workload (Trzmiel, 2015).

Transversal skills can be integrated into the school curriculum in three ways (Gordon et al., 2009):
- **Developing transversal skills in a specific subject**
    The acquisition of transversal skills is included in the curriculum as a specific subject with specific objectives and formal learning goals.
- **Developing transversal skills by integrating them into each subject (cross–subject)**
    Development of transversal skills occurs in all traditional subjects.
- **Developing** transversal **skills with extra curriculum activities**

Accordingly, the aim of the research is to analyse the variability of transversal skills in secondary school mathematics curriculums, by analysing the importance of transversal skills in various Latvian secondary school mathematic curriculums from 1940 to 2020.

Methodology

The researchers, using document analysis, selected various secondary school mathematics curriculums from 1940 to 2020. Overall, 11 different secondary school mathematics curriculums are analysed: Mathematics curriculum (Tartakovskis et al., 1940), Mathematics curriculum. Grades V-XI (Matemātikas programma…, 1949), Mathematics curriculum. Grades V-XI (Matemātikas programma…, 1953), Mathematics curriculum. Grades V-XI (Matemātikas programma…, 1958), Mathematics curriculum for secondary schools. Grades IX-XI (Matemātikas programma…, 1965), Mathematics curriculum for secondary schools. Grades IX-XI (Matemātikas programmas…, 1968), Mathematics curriculum for secondary schools. Grades IX-XI (Matemātikas programma…, 1975), Mathematics curriculum. Grades IX-XI (Matemātikas programma…, 1981), Secondary education curriculum in mathematics (Vidējās izglītības standarts…, 1993), Mathematics. Grades 10-12. Sample of curriculum (Matemātika 10.-12. klasei…, 2010), Mathematics I. Basic course curriculum for general secondary education (Vilciņš et al., 2020). Over the years, the duration of high school has changed as well as the age of students starting secondary school. In 1940 students had to study in secondary school for 6 years and the students started secondary education at the age of 11, it has reduced over time to 3 years: nowadays students start secondary school at approximately age 16. As part of this research, the last three secondary education years are considered secondary school. In the analysis of the common characteristics of secondary education curriculums, transversal skills were grouped into unitary domains (Table 1):
- transversal skills required to address secondary school mathematical challenges,
- transversal skills required for the use of different teaching methods,
- transversal skills needed for everyday life and that can be developed through secondary school mathematics.

Results and Discussion

The analysis of the transversal skills required to address secondary school mathematical challenges, shows that these skills are sustainable and very similar in all analysed secondary school curriculums. The reason for transversal skill sustainability is also determined by the similarity and resilience of the mathematical content in secondary school mathematics. The content of secondary school mathematics determines the need for different thinking skills, problem solving skills and research skills, and in the context of geometry spatial imaginations. Thinking skills, as a key element required in each mathematics topic, include analysis, generalization, and demonstration skills, the use of deduction and induction, analogy, mathematical proof, interpreting and many others. Without these skills, it is impossible to acquire mathematical knowledge and develop technical or subject skills (Vorobjovs, 2019). Even more, in the context of secondary school mathematics these skills should be considered technical or subject skills. Over the years, there is a trend for secondary school mathematic curriculums to be increasingly detailed which means that the intensity of mentioning transversal skills is increasing as well, and skills can be specified in a more detailed manner as well.

From 1949 to 1981, thinking skills are included as a short and concise learning objective: to develop logical thinking. More detailed information about these skills can be gained only by analysing mathematics content which leaves a place for interpretation. Since 1993, a more general objective has emerged in the secondary education mathematics curriculum - the development of thinking techniques. It is described more detailed in new secondary education mathematics curriculum in 2020 by highlighting skills like analysing, interpreting, reasoning, proving, generalizing and many other thinking components.

Similarly like with thinking skills, problem solving skills as a term indirectly appears in secondary school mathematics curriculum since 2010, defined as a problem formulation and raising hypothesis (Matemātika 10.-12. klasei…, 2010), and in 2020 – as problem solving (Vilciņš et al., 2020). However, these skills have always been important in secondary school mathematics and have been included in curriculums in an indirect way, as shown by the mathematics content. For example, problem solving skills had to be developed through solving different types of textual tasks which requires problem solving skills and has been included in secondary school mathematics curriculum since 1940 (Tartakovskis et al., 1940).

The analysis of the transversal skills required for the use of different learning methods shows the significant variability of methods used in secondary school mathematics over years, caused by paradigm change. Following the adoption of the Latvian Declaration of Independence on 4 May 1990, the process of democratisation starts in Latvian schools, which increased the freedom of the teacher in the implementation of the learning process, delegating the right and responsibility to organise the training process independently to the teacher. It was allowed to include some new topics as well as change the depth of the content provided in the curriculum (Vidējās izglītības standarts…, 1993). These processes also start a transition from teacher-centred to student-centred approach.

Individual work methods dominate over other learning methods up until 1993. Individual activity of the student is essential to the day-to-day learning process, and provides skills for independent (Matemātikas programma…, 1965; Matemātikas programmas…, 1968; Matemātikas programma…, 1975) and rational work (Matemātikas programma…, 1949; Matemātikas programma…, 1953; Matemātikas programma…, 1958; Matemātikas programma…, 1981), as well as persistence in achieving the stated objective. Although the methods used until 1993 were limited to individual work, there is a comprehensive application of teaching methods, including the need for students to be able to work with books, manuals and other literature, tables, and charts individually. In addition, the secondary school curriculum outlines the need for extra curriculum activities, for example, after school mathematics, school papers, evenings with mathematical games. This kind of extra curriculum activities increase students' interest in mathematics. Although there is no detailed explanation and methods to be used for extra curriculum activities and the skills needed for students to participate in these activities are not specified, the nature of these activities indicates the need to collaborate (Vorobjovs, 2017, Lama, 2020), which means that transversal skills required to successfully work in teams were partly developed in extra curriculum activities.

Since the restoration of independence, secondary education curriculum has been supplemented with many different learning and teaching methods. For example, the 2010 secondary education mathematics curriculum includes a section with different teaching methods. Such methods as inquiry, laboratory

work, research project, games, role play, problem solving as a teaching method and many others are included in the curriculum.

In all analysed secondary school mathematic curriculums, the necessity to use topical innovations in the learning process has been stressed. From 1968 to 1975 pupils were urged to use a logarithmic ruler, later in 1993 – a micro calculator, and finally, since 2010, the application of a variety of digital technologies has been encouraged.

Regarding transversal skills which is needed for everyday life and may be developed through secondary school mathematics, only career skills (defined as 'skills for practical work') are included in this category up until 1993. From 2010, secondary education mathematics curriculum, in addition to career skills, introduces skills that ensure the development of society and individual admirable characteristics. The new 2020 secondary school curriculum also includes and specifies the skills needed for active engagement in societal processes, including civil and global competence.

Table 1

Transversal skills in secondary school mathematics curriculums

Secondary school mathematics curriculum	Transversal skills required to address secondary school mathematical challenges	Transversal skills required for the use of different teaching methods	Transversal skills needed for everyday life
Mathematics curriculum 1940	- One of the objectives of learning geometry is the development of the **spatial imagination** - when solving construction exercises, it is necessary to use all phases of solution: **analysis, design, mathematical proof,** and **research.** Examples of task solving: - **Prove** that square root of 2 is a rational number - **explore** the approximate value of square root of 2 - **generalize** the specified process to all non-repeating decimal numbers	None	None
Mathematics curriculum. Grades V-XI 1949	- students should be taught to **draw** and **analyse** diagrams and charts - students need to develop **spatial imagination, logical thinking,** and **resourcefulness** - when solving construction exercises, it is necessary to use all phases of solution: **analysis, design, mathematical proof,** and **research**	- The aim of mathematics is to develop student's skills to work **rationally** and **independently** - students interest in mathematics is particularly increased by extra curriculum activities (after school mathematics, school papers, evenings with mathematical games, etc.). - students should develop **persistence** in achieving the stated objective	- The aim of mathematics is to develop student's **skills** required **for practical purposes** - training for **practical work** of the students which will not continue education has to be concluded
Mathematics curriculum. Grades V-XI 1953	- The aim of mathematics is to develop student's **spatial imagination** and **logical thinking** - students should be taught to **draw** and **analyse** diagrams and charts	- The aim of mathematics is to develop student's skills to work **rationally** and **independently** - students interest in mathematics is particularly increased by extra curriculum activities (after school mathematics, school papers, evenings with mathematical games, etc.).	- The aim of teaching mathematics in secondary school is to provide students with real life knowledge and to develop the skills to apply this knowledge

Secondary school mathematics curriculum	Transversal skills required to address secondary school mathematical challenges	Transversal skills required for the use of different teaching methods	Transversal skills needed for everyday life
	- students should be capable of **generalizing** the solution - when solving more difficult construction exercises, it is necessary to use all phases of solution: **analysis, design, mathematical proof,** and **research**	- students should develop **persistence** in achieving the stated objective - a great deal of attention should be paid to organising the students **individual work**	**for practical purposes** - training for **practical work** of the students which will not continue education has to be concluded
Mathematics curriculum. Grades V-XI 1958	- The aim of mathematics is to develop student's **spatial imagination, resourcefulness, creativity** - students should be taught to **draw** and **analyse** diagrams and charts - only equation systems that are easily **interpreted** geometrically should be taught. - the teacher needs to get students to learn the idea of a **functional relationship**. How to **compose, solve** and **analyse** equations.	- The aim of mathematics is to develop student's skills to work **rationally** and **independently** - students should develop **persistence** in achieving the stated objective - pupils should acquire skills in the use of **calculating tools** and different **measuring instruments** - special attention should be paid to the organisation of students' **individual work** inside and outside the classroom - to increase students' interest in mathematics, it is important to organise extra curriculum activities (after school mathematics, school papers, evenings with mathematical games, etc.).	- Teaching of mathematics serves to prepare pupils for future **practical work** and helps to choose future **career**
Mathematics curriculum for secondary schools. Grades IX-XI 1965	- The aim of mathematics is to develop students **logical thinking** - pupils should be able to use mathematical **induction** to obtain new formulas - the topic "repetition" **generalises** and **compiles** the entire course of the geometry	- Teacher should focus on teaching methods that stimulate pupils' activity and **conscientious** learning - the curriculum provides possibilities for the use of different methodological techniques in a specific material presentation - students should be prepared to **work individually** - students must be prepared to work with books, manuals and other literature, tables, and charts individually	- The aim of teaching mathematics in secondary school is to achieve a level of knowledge and skills that is indispensable for successful **practical work** and to provide them with sufficient knowledge necessary for other school subjects
Mathematics curriculum for secondary schools. Grades IX-XI 1968	- The aim of mathematics is to develop students **logical thinking** - pupils should be able to use mathematical **induction** to obtain new formulas - the topic "repetition" **generalises** and **compiles** the entire course of the geometry	- Calculations must be performed mainly with **logarithmic ruler** - teacher should focus on teaching methods that stimulate pupils' activity and **conscientious** learning - the curriculum provides possibilities for the use of different methodological techniques in a specific material presentation - students should be prepared to **work individually** with books, manuals and other literature, tables, and charts	- The aim of teaching mathematics in secondary school is to achieve a level of knowledge and skills that is indispensable for successful **practical work** and to provide them with sufficient knowledge necessary for other school subjects

Secondary school mathematics curriculum	Transversal skills required to address secondary school mathematical challenges	Transversal skills required for the use of different teaching methods	Transversal skills needed for everyday life
Mathematics curriculum for secondary schools. Grades IX-XI 1975	- The aim of mathematics is to develop students **logical thinking** - pupils should be able to use mathematical **induction** to obtain new formulas - the topic "repetition" **generalises** and **compiles** the entire course of the geometry	- Teacher should focus on teaching methods that stimulate pupils' activity and **conscientious** learning - students should be prepared to **work individually** - students must be prepared to work with books, manuals and other literature, tables, and charts - the curriculum provides possibilities for the use of different methodological techniques in a specific material presentation - the logarithmic ruler should be used as a typical computing tool	- The aim of teaching mathematics in secondary school is to achieve a level of knowledge and skills that is indispensable for successful **practical work** and to provide them with sufficient knowledge necessary for other school subjects
Mathematics curriculum. Grades IX-XI 1981	- The aim of mathematics is to develop students **logical thinking** and **spatial imagination** - students should study functions and get an idea of the **deductive** nature of mathematics - students need a **systematic** knowledge - **mathematical proof** must be used to acquire theoretical knowledge - the acquisition of new knowledge needs to be linked to the **generalisation** of the previously acquired - special attention should be paid to the derivative and to the **interpretation** of the findings obtained	- Teaching methods that stimulate students' activity should be used and methods that stimulate **conscientious** learning - students should be provided with general information on **electronic computing** - teaching should use methods that develop students' skills required to work **individually**, **rationally,** and **creative** - students should be prepared to work with books, manuals and other literature, tables, and charts - extra curriculum activities can help to raise students' mathematical level	- Linear programming contributes to an informed perception of mathematical methods to be used in manufacturing
Secondary education curriculum in mathematics 1993	- The aim of mathematics is to develop **general intellectual capacity** and skills, including **thinking techniques** and methods - students should understand and study the inherent **functional relationships** and have **spatial understanding** of the position of geometrical figures - students should be able to **compare, prove identity, simplify, analyse**	- Students should be able to use micro-calculators - students should develop skills necessary for intellectual work	None
Mathematics. Grades 10-12. Sample of curriculum 2010	Students should be able to: - **formulate** a problem and raise a **hypothesis** - form an **argument**	Students should be able to: - **search** for information - to use an **ICT** - **present** individual and group work	- Students should realise the importance of spatial imaginations and modelling in different

Secondary school mathematics curriculum	Transversal skills required to address secondary school mathematical challenges	Transversal skills required for the use of different teaching methods	Transversal skills needed for everyday life
	- carry out **mathematical proof** - **assess** the reliability and relevance of the results - see analogy, process trends, and generalize	- **create report** - to **collaborate** in research and practical work - to **formulate** a **reasoned** opinion	professions and areas of everyday life - It is important to improve students' understanding of the role of mathematics in everyday life and the role of mathematics in other sciences, society, and individual development.
Mathematics I. Basic course curriculum for general secondary education 2020	- **Solving** the **problem** mathematically means **identifying** structures, **systems**, **relationships**, creating **generalisations** and **proving** them - data can be mathematically **processed**, **analysed,** and **interpreted** for **reasoned** and **relevant decisions** - student can make transition between **specific** and **general** - think **inductively** and **deductively**	- Students can **collaborate** to **prove**, **critically assess** the various offers and information, e**valuate**, and **explain** what it means to **solve** the **problem** students should be able to: - **collect** information **independently** using **digital tools** - **set objectives** and criteria for assessing whether the goal has been achieved, **plan** and **implement** steps to achieve that - carefully **plan** the data collection and **presentation** process, develop students' thinking skills	- To improve **foreign language skills**, it is recommended to use sources in different languages - the student is capable to contribute to improving the current situation, accepting complex challenges, and maintaining emotional balance and **openness** in times of uncertainty - students can explain and justify their views on interrelations, assess the interaction between individuals, society, and the environment - be able to refuse if the initiative does not meet the values and is able to defy the pressure from others

Comparing the three proposed domains of transversal skills there are common features in their development. They have been topical in line with the everyday needs and requirements of the labour market. However, there are also specific features in each of the groups. The transversal skills needed to address mathematics challenges are determined by the mathematics content and its variability. This transversal skill domain is also the most resilient and has not actually experienced significant changes.

The skills needed to use different teaching methods depend directly on the philosophical approach to the learning process. This domain is also affected by important skills needed for lifelong learning. Which points to the necessity to acquire skills to be able to fully improve their knowledge and skills to be competitive in the labour market.

The transversal skills needed for everyday life and that can be developed through secondary school mathematics are influenced by societal variability and impact of the political regime. Until the restoration of Latvia's independence in 1990 important are skills required for practical life and career with heavy emphasis on skills required for blue colour workers. Since 1993 the need for skills to secure democratic processes and increasing citizenship activity increased significantly. Although researched

transversal skills are viewed from school and teaching perspective, these domains are not isolated or unambiguous and can overlap with each other.

The new secondary school mathematics curriculum is in line with other countries secondary school curriculums. The Australian secondary school mathematics curriculum emphasizes transversal skills like literacy, numeracy, ICT skills, critical and creative thinking, personal and social capacity, ethical awareness, intercultural understanding (Senior Secondary Mathematics…, 2018). In return, the Hong Kong Secondary mathematics curriculum aims to develop transversal skills such as basic skills (communication skills, mathematical skills, ICT skills), thinking skills (critical thinking skills, creativity, problem solving skills), personal and social skills (self-driving skills, self-learning skills, collaboration skills) (Mathematics Education Key…, 2017). In the context of secondary school mathematics problem solving skills students must have skills (Mathematics, 2012, Common Core State…, 2010, (Mathematics Education Key, 2017, Senior Secondary Mathematics…, 2018) including problem solving as a complex collaborative problem-solving skill (Mathematics Education Key…, 2017). This similarity also points to the importance of transversal skills in addressing current challenges and the experience of Latvia can be generalized.

Conclusions

Although the term 'transversal skills' is included in the secondary education curriculum only since 2020, it can be concluded that most of the transversal skills were present in all 11 analysed curriculums from previous years.

Transversal skills from the school perspective can be grouped into three domains:
- transversal skills required to address secondary school mathematical challenges, thinking skills (logical, critical, creative, systemic thinking) and problem-solving skills;
- transversal skills required for the use of different teaching methods, collaboration skills, communication skills, skills to work individually, planning skills, information search, processing, adaptation skills, presentation skills, decision-making skills and digital skills;
- transversal skills needed for everyday life and that can be developed through secondary school mathematics, career skills, creativity and entrepreneurship, intercultural awareness and civic engagement.

The research shows that the transversal skills required to solve mathematical tasks are essentially determined by the content and have not changed significantly over time. The role of research tasks has slightly increased and the role of proof has been diminished. The skills needed to use different learning methods have changed over time in the context of a paradigm shift. From 1990 political regime has changed in Latvia and that has led to a paradigm shift from teacher-centred to student-centred learning process. It had determined the change of emphasis of teaching methods from individual work to teamwork. The third domain of transversal skills, which contains all skills needed for everyday life and which can be developed through mathematics, has changed fundamentally. Until the recovery of Latvia's independence in 1990, the primary emphasis in secondary school mathematics was placed on career skills and on the skills needed in practical activities. The new secondary school mathematics curriculum implemented in 2020 accentuates skills needed for lifelong learning like digital skills, collaboration skills and the promotion of civic activities.

Therefore, teachers are advised (1) to study the definition of different transversal skills, (2) to recognize the skills already familiar to them, (3) to connect with and utilize their past experience in transversal skill development in the classroom, (4) to supplement the everyday learning process with methods required to develop those particular transversal skills that are new and have been included in secondary school curriculum only recently.

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Applicability of Stoic Philosophy to Character Education

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Abstract: Character education requires an interdisciplinary approach of education, philosophy, and psychology. Philosophical school of Stoicism is well positioned to be used as an underpinning philosophical theory to reinforce and fortify the effectiveness of character education, as it resembles both virtue-based approach and shares virtues with those promoted by character education. The article contains an example of Latvia's government regulations and approach to virtue-based character education. The aim of a study is to explore how Stoic philosophy can be instrumental for educators implementing a character education approach within school education. The study was conducted using qualitative research methods, by analysing sources of Stoicism and applying them to contemporary concepts and understanding of character education. The results of the study consist of the identified seven key insights how Stoic philosophy can make a valuable contribution, supplemented by recommendations for each key insight in a form of conclusion. Stoic philosophy emphasises teaching through context, role models, and through Stoicism itself, based on an assumption of a sustained process. Since character education in schools is a growing movement, today's educators can draw ideas directly from these findings, as well as approaching character education through a lens of Stoicism.

Keywords: character education, Stoicism, values, virtues, school education.

Introduction

Schools and teachers affect the character and values of students, regardless of whether there is a deliberate intent to influence them or not. Students spend around 12 years of their lives in school, being exposed to the specific school environment, social interactions, curriculum, and values they express. "Character education is thus not optional in school – it is inevitable" (Berkowitz, Bier, 2005, ii). It is not an option for educators to choose whether to do character education or not at all, instead – whether educators choose to conduct it in "intentional, conscious, planned, proactive, organized and reflective" or "assumed, unconscious, reactive, subliminal or random" (Kristjánsson, 2013, 276) manner.

T. Lickona, who has been called "the father of modern character education" summarizes deliberate character education as follows: "it is the deliberate effort to cultivate virtue in its cognitive, emotional, and behavioural dimensions. It does so intentionally through every phase of school life, from the teacher's example to the handling of rules and discipline to the content of the curriculum to the conduct of sports" (Lickona, 2001). This interpretation of deliberate effort is used as a basis to describe character education in the article. Character refers to "that subset of personality traits that are morally evaluable and considered to provide persons with moral worth" (Kristjánsson, 2013, 270). Values are understood as ideals or goals, which are aspirational and govern our thinking and actions. While virtues are values put to use in a persistent way, "that is to say, a characteristic and tendency to be (think and act) in a certain way" (Whiting et al., 2018, 3). Character education provides a framework for the inculcation of values and moral habits (developing virtues) within school education.

Even though recognizing that schools are not the only or most powerful habitat for the development of character and having some reluctance of pluralist societies to agree to any definite set of values, the character education approach within school education is a growing movement. It is fuelled by the needs of the society to promote both good individuals and good citizenship (Arthur, 2010; Citizenship education…, 2017; Ozoliņš, 2010). Properly done character education is not an indoctrination into any particular political or religious doctrine, striving not for an excellent, predictable behaviour in any situation, but instead "teaching students what a morally good life consists of" (Kristjánsson, 2013, 276). In their study M.W. Berkowitz and M.C. Bier conclude that character education "does work, if effectively designed and implemented", "it affects much", and "it lasts" (Berkowitz, Bier, 2005, 19), pointing strongly to the efficacy of the undertaking of character education in schools.

In Latvia the ideas of schools as habitats for character education are embedded within government regulations (Izglītojamo audzināšanas vadlīnijas…, 2016; Vērtības darbos…, 2019). Shortly before their approval, M. Kūle wrote: "thus far there has not been willingness to strengthen values in Latvia" (Kūle, 2016, xx). As a very welcome development, government regulations address this very issue (among other valuable notions) by defining values to be promoted within Latvian school system: life, respect, freedom, family, marriage, work, nature, culture, Latvian language, and the country. Alongside with twelve virtues: responsibility, studiousness, courage, honesty, wisdom, kindness, compassion, moderation, self-control, solidarity, justice, tolerance. Notably, the list of virtues includes four of the so-called cardinal virtues of Greco-Roman antiquity: courage, wisdom, moderation and self-control, and justice. These values and virtues are to be promoted throughout the entire school life of a student. The intention of the article is not to argue for or against one or another value, virtues or notions which are included (or not included) within government regulations, or whether it is the best solution in general, but to offer some insight how to proceed from here in the implementation phase of the character education approach within school education.

The study conducted by Latvian scholars "Understandings of Character and Virtue Education in Riga: Main Findings" (Surikova et al., 2020) demonstrates that the strongest agreement of respondents is with character education's role in improving the behaviour of students (M=5.68, 7-point Likert scale), while the weakest agreement is with character education as an encouragement to belong to a democratic society (M=4.64, 7-point Likert scale) (Surikova et al., 2020, 270). This points to a requirement to strengthen the citizenship education dimension. The article argues that it is of utmost importance to take an integrated approach, as well-balanced combination of promoting both a good individual and good citizenship provides a sound rationale for self-improvement (that is, answering not only "what", but also "why" questions). Based on study "Patriotism in Latvian Youth and Society" conducted by the National Defence Academy of Latvia, National security curriculum for 10th and 11th graders (currently available as a pilot project) do focus on civic patriotism (Bērziņa, 2018, 4), however society would benefit if good citizenship would take a more prominent role in character education in close association with stated values and virtues. Strand of research related to a holistic approach to education also supports this mode, with empirical findings suggesting that "holistic education addresses the development of an individual as a whole and as a part of a community" (Badjanova, Iliško, 2014, 27).

Character education requires an interdisciplinary approach of education, philosophy, and psychology. K. Kristjánsson presents the case that for the model of character education to be credible and effective, it must "be underpinned by a respectable philosophical theory" (Kristjánsson, 2015, 147). Philosophical thinking behind government regulation of character education in Latvia (as an example, moreover, it is broadly shared in Anglophone countries) does follow this path as it is clearly based upon virtue-focused moral education, which derives from virtue ethics. Theoretical basis of virtue-focused character education approach within school education are usually drawn from virtue ethics representative – Aristotle. This article looks at another representative of virtue ethics from Greco-Roman antiquity, namely Stoics, to learn what insights can Stoics offer to educators introducing character education in schools.

The ultimate goal in Stoic philosophy is to achieve what Greeks called *eudaimonia,* which could be translated as "the attainment of a "life is well lived" or the "good life" in the holistic sense" (Whiting et al., 2018, 1). And achieving this "life is well lived" is "up to us" and . . . we all have the capacity to move towards this state, regardless of our specific social context or individual character" (Epictetus, Hard, Gill, 2014, vii). It could be done through virtue, that is, the only way to have a "life is well lived" is to become virtuous. For Stoics "virtue is a form of expertise or skill, knowledge how to live well in every way, a form of knowledge that shapes the whole personality and life", which is "sometimes translated as "excellence" and doesn't have "heavy moral overtones" of a modern interpretation of English word "virtue" (Sellars, 2014, 123). To become virtuous requires a life-long process of learning, deliberate and continuous effort. Learning, working on self-improvement is thus a key tool to achieve the "life is well lived", or as Epictetus put it: "none but the educated can be free" (Epictetus, Hard, Gill, 2014, 72). Stoicism is not a theoretical endeavour, but a philosophy that requires applying its tenets in an individual's life to live with them, practice them constantly progressing to become a better person, which eventually in the process transforms personality and the individual's way of life.

Since Stoicism as a school of philosophy is two thousand plus years old, one might wonder whether Stoicism is applicable today, in the 21st century. There has been a noticeable revival of interest in Stoicism that began

in the last decades of the 20th century. Today we see Stoic (ethical) tenets being applied also in cross-disciplinary setting, like in psychology (as a formative concept of Cognitive-Behavioral Therapy), military service (teaching resilience to soldiers), education (Burton, 2014; Evans, 2014; Groenendijk, de Ruyter, 2009; Guenther, 2018; Holowchak, 2009; Romaneck, 2007), and environment (sustainable practices). University of Exeter is conducting a project called "Modern Stoicism", which among other things carries out research on asking does Stoicism increase well-being of those practicing Stoicism and does its effects last. After eight years of research, the results so far convincingly show that there are indeed an increase in satisfaction with the life of respondents (for example, by 11,5 % during the Stoic Week 2019), but succeeding even better in the reduction of negative emotions (by 17 %) and anger (by 10 %) (Sadler, 2020b).

The aim of the study is to explore how Stoic philosophy can be instrumental for educators implementing a character education approach within school education.

Methodology

The study was conducted using a qualitative research method, by analysing sources of Stoicism (primary and secondary) and applying them to contemporary concepts and understanding of the character education approach within school education. Primary sources on Stoicism are translations of original texts of Roman Stoics – Seneca (4 BCE – 65 CE), Hierocles (first half of the second century CE), Epictetus (50 – 135 CE), and Marcus Aurelius (121 – 180 CE), secondary sources on Stoicism include contributions (commentary, research, analysis, interpretations) by contemporary (early 21st century) scholars and practitioners of Stoicism, relevant to the aim of the study. Sources on character education are a combination of contemporary (early 21st century) scholarship on the issue (mainly Anglophone countries) as well as Latvian scholarship and, where applicable, governmental regulations.

Following the aim of the article, a research question is: what specific worthwhile insights could be identified while analysing sources of Stoicism, in the light of their applicability to the character education approach within school education? Scope: purpose of the article is not to lay out in a systematic way or to explain Stoic teaching itself, nor to discuss the divergence of views and interpretations within Stoicism. Even though the article singles out government regulations in Latvia as a particular example, results of the study could be applied both to the character education solutions in Latvia and wherever else virtue-focused character education approach within school education is being carried out.

Results and Discussion

The results of the study consist of the identified seven key insights (outlined below) how Stoic philosophy can make a valuable contribution to educators implementing a character education approach within school education.

1. Educators can help themselves

There is no lack of challenges, uncertainties, and stress teachers and school administration face on a daily basis. "There will be people (staff, children, governors, parents) who will test your tolerance and patience . . . It is an important quality to remain calm and positive and be resilient" (Sadler, 2020a). Before being able to apply character education to students, teachers and staff should first focus on themselves, their own mental fortitude and managing emotions. Marcus Aurelius insists that whatever anyone around them does or says, they must be emerald and keep their colour (Aurelius, Moore, Silverthorne, 2008, 85), inviting teachers to be able to keep unscathed their "ruling centre", as Stoics would say, during the challenges of the school day. Stoics, to be able to live by their tenets, developed practical tools (or "spiritual exercises") to be applied in their way to progressing towards virtuous persons.

Conclusions: The following Stoic tools seem to be the most valuable for educators themselves to apply in their daily school life, to prepare better for challenges and uncertainties:
  1.1. The first tool is to observe a distinction proposed by Epictetus: "some things are within our power, while others are not" (Epictetus, Hard, Gill, 2014, 287). This is an appeal to foremost clearly distinguish what is in one's power, and then worry about and put the best effort only in those things that are in one's power. An example: "teachers have no control over the student's attitudes towards learning, some but not complete control over student learning itself, and complete control over what we teach and how we teach it" (Burton, 2014, 121). Consider this

parable of the subsequent Stoic perspective facing students' attitudes towards learning: "our job is similar like raking leaves in a high wind. . . . If the leaves scatter as we work, that is ultimately their business. Our disappointment or frustration is irrelevant" (Harding, 2015).

1.2. Practicing so-called pre-meditation or negative visualisation, that is, anticipating challenges which do happen daily. Marcus Aurelius suggests to begin each morning with reminding oneself, that today one will meet all kinds of people with less than decent behaviour: ungrateful, arrogant, unsocial and the like (Aurelius, Moore, Silverthorne, 2008, 33). Therefore, when the challenges do come, they don't come as a surprise, disturbing one's "ruling centre". "In short, educators need to be rational pessimists and expect more will go wrong than right" (Harding, 2015).

1.3. Evening reflection or writing of a (moral) diary. Seneca advised to reflect each evening on how the day went, as an important element of an individual's ethical development, by scrutinizing one's own thoughts, emotions and deeds during the day, asking, what went well, what went wrong, and what could be improved, done differently? Recent research on teachers' diary writing, which produced some encouraging results in improving individual teacher wellbeing, supports this approach (Kelly, 2020).

2. Educators (and others) as role models

Stoics recognized the power of example, that "thinking about the sage, and taking him as exemplary, helps to give the direction my ethical progress" (Annas, 2008, 13-14). This is also supported by contemporary research that providing models and mentors works well in character education (Berkowitz, Bier, 2005, 18). Ancient Stoics had a concept of a sage, the ideally virtuous person to look up to strive for. For Stoics, sage was not detached from an ordinary life. On the contrary, "the sage will take full part in everyday life. He will marry and have a family. . . . Moreover, not only does the sage live an embedded life, he should do so" (Annas, 2008, 18). To be virtuous does not mean to escape everyday life, instead it is the conduct of life in a right, exemplary way by properly applying virtues. As for real-life teachers who are not yet sages, Stoics strongly insist to align one's deeds with one's words. Seneca has these harsh words to say on the issue: "I hold that no man has treated mankind worse than he who . . . lives in a different manner from that which he advises. . . . A teacher like that can help me no more than a sea-sick pilot can be efficient in a storm" (Seneca, 2013, 443). Conclusions:

2.1. Integrity of pedagogues themselves in character education is essential. Thus, to "become models for good personhood and good citizenship" (Holowchak, 2009, 167), educators should be encouraged and supported so "they persevere in improving themselves and aim to develop a proper moral disposition" (Groenendijk, de Ruyter, 2009, 89).

2.2. There is a need for an ideal (sage) to strive for, preferably a live example to reinforce educational effects, and to show, that (1) it is possible to achieve, and (2) to have a model how to conduct oneself (of course, not being mythical persons they will have their own flaws). Epictetus as his inspiration uses Socrates. Modern Stoics recognise that students today need contemporaries and diversity as sources of their inspiration, not only emperors (such as Marcus Aurelius) and those made of marble (like Socrates). This is very situational, and each community would need to come up with their own role models. In Latvia, for example, these could include former president Vaira Vīķe-Freiberga and musician Renārs Kaupers.

3. Virtue-based character education is a life-long process

Applying virtue to everything one does is a continuous, never-ending process. For Stoics "there is no point when we can say - well, that was hard work, but I'm finally there; now I'm brave (generous, tactful or whatever)" (Annas, 2016). Seneca says, "as long as you live, keep learning how to live" (Seneca, 2013, 233), and that is one of the key concepts for Stoics – persistent ethical development. Because "nothing great comes into being all at once" (Epictetus, Hard, Gill, 2014, 36), one should keep working on improving oneself towards "whole-hearted ethical engagement or complete integrity" (Epictetus, Hard, Gill, 2014, xv-xvi). Stoics call them progressors. "So where is the progress to be found? . . . Putting his guiding principles into action in relation to anything that he has to deal with . . . – this, then, is the person who is truly making progress" (Epictetus, Hard, Gill, 2014, 12). All this effort has a worthy aim, which is "to give your life an overall structure and sense of priority in line with the Stoic view of happiness" (Epictetus, Hard, Gill, 2014, x), that is, the "life is well lived". Conclusions:

3.1. Approach virtue-based character education as a life-long process. One should prepare for a long run (1) individually, (2) as a school community, and (3) government collectively. In the true spirit of virtue-based learning, Latvia's government regulations already envisage the notion of life-long learning. This policy should be sustained for at least a decade to have a real impact on students and citizens.

3.2. Applying character education as a life-long process also means to ensure age-appropriate virtue-based learning in all stages of education – from nurseries, throughout all (and every) school years, and unto universities.

4. Virtues form an inseparable set

Stoic core virtues – courage, justice, self-control, and wisdom – are interdependent and could not be treated separately "because the correct exercise of any one virtue depends on possessing and exercising the others too" (Gill, 2015). Either one has all of them or none. Courage alone, for example, could be performed in a non-virtuous way by a gang of thieves. One cannot today be just to one group of people and the next day unjust to all others – it is not a virtuous person (Kūle, 2016, 215). Stoicism demands that exercising virtues should become a way one lives all her life, applying them to everything one does. "We tend to think that we are pretty good people because in some areas of life we are good – generous, say, while conveniently forgetting that in other areas we aren't – we're disloyal, say. No, say the Stoics, you are virtuous (or not) *as a whole*" (Annas, 2016). In addition, Stoicism affects not only one's knowledge (knowing what is right) and deeds (doing the right thing for the right reasons), but also "shape the personality as a whole, including emotions and desires" (Gill, 2015). This comprehensive mode is the strength of virtue-based ethics in general and Stoicism in particular, and, very likely, the reason why virtue-focused moral education is preferred to character education.

The conclusion: When teaching virtues at school (even though a slightly different set of virtues than Stoics'), the principle, that they should be approached as a package (observing all of them, not singling out only one or few) to have a well-rounded person (a fully virtuous person, Stoics would say), still holds. One should aim high (to become a sage or resembling another respectable role model, not the main gangster of the town) to attain excellence (as another translation of virtue) and the "life is well lived".

5. The need for a broader context, complete worldview

Ethics (in this case – values and virtues) alone is neither convincing, nor sufficient to justify life-long rigorous work on self-improvement. To live a life of conscious choices, integrity, and reflection, an individual must be able to convincingly explain her reasoning, why she acts and thinks in one or another way. Roman Stoics who were quite ignorant of most of other parts of Stoic philosophy (what they called physics and logic), nonetheless recognised that "studying just the ethical part of philosophy will not be adequate for a full understanding even of ethics" (Annas, 2007, 61). For Stoics it is the logos that provides the structure (and order) to the world. Everything exists as part of the one harmonious whole. Stoic "physics" provides a framework of worldview and "why" answers for Stoic ethics: like "why" one should respect other humans, or why humans have diverse destinies. J. Annas argues that Stoics convincingly demonstrate that a larger scheme "appeals in a deeper and more transformative way than virtue and happiness alone ever could" (Annas, 2007, 72), by providing an "integrated picture" (Annas, 2007, 63) and being "more motivationally powerful" (Annas, 2007, 71). "Thus ethics is better understood and more stable in the agent's psychology when integrated" (Annas, 2007, 71) within the complete worldview. Although in character education focus is on the individual and work on self, yet for a completely developed personality it is important to be aware of one's place and role within more broadly constructed worldviews. This is a rationale to focus in character education not only on a good individual, but also on good citizenship, to some extent in line with what M. Kūle in her monograph "The Way Things Ought to Be. Etudes on Knowledge and Values in Latvia Today" argues for the benefits of the vertical hierarchy of values. Conclusions:

5.1. Teaching only selected virtues and values without a rationale why they are essential, how they relate to each other and not constructing a systematic worldview where they would have an integral role to play, is not the most efficient approach to achieve reliable and lasting results. Seneca says: "as leaves cannot flourish by their own efforts, but need a branch to which they

may cling and from which they may draw sap, so your precepts, when taken alone, wither away; they must be grafted upon a school of philosophy" (Seneca, 2013, 384).

5.2. Currently a (captivating) narrative either for individual virtues and values, or a collection of them is somewhat lacking in the explanatory literature for the government regulations in Latvia. It would be beneficial to organize a systematic worldview out of those ideas, to boost their coherence and relevance. The following proposals (insights no 6 and 7) detail this approach.

6. Being part of the community as a framework for virtues and values' narrative

Context in which selected values and virtues could be incorporated to form a narrative of a structured worldview, is the notion that an individual is part of something bigger (a larger scheme). And that one's own "life is well lived" although an important goal, is not achieved in isolation from others. Stoics recognized this aspect in two different approaches from the "physics" point of view. One is parable that we are all part of the same body, thus having different roles (hand or head, for example) but all working for the same purpose, all interrelated. The second is the notion that all humans share reason (a fragment of God in each of us), therefore humans should respect each other as equals. Hierocles developed circles of moral concern based on these concepts (all interrelated and all equal) to show how Stoics get from focusing on self-improvement to the concept of care and responsibility for others. It starts with the self and then spreads to close family, because attachment and responsibility to it is natural. From a close family it proceeds to other relatives, neighbours, countryman till all humans are included, since there is no reasonable stopping line in between those communities (Ramelli, 2009, 91). The significance of being part of the community aspects in the context of character education is recognised also by modern scholars and practitioners, like "self-serving image . . . is . . . misplaced" (Whiting et al., 2018, 7), "moral education brings an understanding that the enjoyment of freedom for ourselves involves the recognition that it is exercised with others and not in isolation" (Ozoliņš, 2010, 414), and "juveniles not only want to belong, but has a necessity to belong" (Auziņš, 2019, 30). That is why a well-balanced and holistic approach between the two objectives of promoting both good individual and good citizenship is desired. Citizenship education is understood as a means "to help individuals realise that they are part of a community or, to be more precise, a set of communities ranging from narrower communities at the local level to wider ones at the national and global levels" (Citizenship education…, 2017, 19), and "communitarian types of citizenship encourage citizens to view themselves as an integral, if not organic, part of the polity and to participate actively in it" (Citizenship education at…, 2017, 20). While civic patriotism is "constructively critical and active participation in civic processes with the goal to promote the common good, well-being and development of country and compatriots" (Bērziņa, 2018, 9). These definitions emphasize active participation and contribution to the community.

The conclusion: When formulating individual goals and ambitions, as well as striving for durability of virtuous individuals, it is highly beneficial to have an integrated vision of good individual and good citizenship, with clear individual's role and contribution to the community (set of communities). Awareness of being part of something bigger, as well as active participation and contribution to common good, makes a substantial difference towards the success of character education. For example, it is not only love for one's country, but also a mindset of what one can actively contribute to one's country, what is one's responsibility regarding successes and the direction where the country is headed (it is especially relevant for smaller countries). The same would apply to all kinds of communities – from family and local community to global outlook on humanity and the planet (care for sustainable development, environment), as it would inevitably involve relations with and respect to others.

7. Teaching Stoicism (and philosophy in general) in schools and colleges

To learn systems of philosophical thought is advantageous in two respects. First, by introducing and practicing philosophical ways of thinking (to be able to form structured belief systems). And second, they offer specific contexts, worldview systems, that could be personalized as frameworks for values and virtues. That is why youth (teenagers) and college students would benefit if their character education would be supplemented by learning philosophy (including Stoicism) itself. For example, M. Holowchak describes Stoic model of education as "distinguishable by these features: education as self-knowing, the need of logic and critical thinking for informed decision-making, learning as a preparation for life" (Holowchak, 2009, 167), mindsets that could certainly be helpful for students. Each student of Stoicism brings back one's own favoured tenets and practical tools ("spiritual exercises"), like being able to deal

with setbacks, enjoying what one already has, learning to manage one's unreasonable emotions, and not to put too much of value on external things.

The conclusion: To teach Stoicism (and history of philosophy in general) in schools and colleges to all students. Stoicism is well positioned to be taught to reinforce and fortify the effectiveness of character education, as it resembles both virtue-based approaches, shares the virtues themselves with character education and provides a completely structured worldview as an example and source of inspiration.

Conclusions

The study has identified seven key insights how Stoic philosophy can make a valuable contribution to educators implementing character education approach within school education, supplemented by recommendations for each key insight in the form of conclusion. The study shows that Stoicism does have valuable ideas to offer to educators, and by no means this represents an exhaustive list of possible insights. Stoic approach emphasises teaching through context, role models, and through Stoicism itself. Since character education approach within school education is a growing movement, today's educators can draw direct inspiration and ideas from these findings, as well as approaching character education through the lens of Stoicism. Deliberate approach to character education takes considerable time to have an effect. It starts with instructing and supporting teachers, developing an appropriate environment in the school, up to gradually settling into students' mindsets and behaviours. That is why, if undertaken, character education approach should be sustained over the years, to bring anticipated results. It would be worthwhile in future research to refine the theoretical rationale of the concepts of good individual and good citizenship in the context of character education, and to clarify the correlation between them.

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Learning of Latvian Language in Pre-Schools in Linguistically Heterogeneous Situations

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Abstract: Topicality of the article is that the development of a child's speech today needs to become more important and be promoted, because increasingly teachers in pre-school face the situation of children entering the pre-school environment with poorly developed vocabulary and insufficient skills to make a request to be able to communicate effectively with peers and adults. The aim of the article is to study the promotion of the Latvian learning of children of pre-school age in the pedagogical process in theoretical and practical terms, by implementing various methods and through the provision of the educational environment. The research includes analysis of scientific literature and methodology for learning the Latvian language of children aged 5-6 years old in pre-school education institutions of Riga and Kurzeme, evaluating audio records, and qualitative analysis of the observed facts. Research question – *how to improve the acquisition of Latvian language of native speakers and minority pre-school age children?* The research was conducted in May and June 2019 and the data were received from 4 pre-school educational establishments in Kurzeme (75 records) and 5 pre-school educational establishments in Riga (75 records). Pre-school child language records were performed in groups with Latvian and Russian as the daily languages. On the basis of the results of an empirical study, the promotion of Latvian learning for children of pre-school age has been updated in the pedagogical process, by developing a knowledge-based environment appropriate to the approach of competence. To become more familiar with the reasons for improving a child's insufficient Latvian language, as well as to help find an objective view of the results of learning the Latvian language in the pedagogical process of implementing various methods, the experimental methodology for phonology, grammatical, (morpho) phonology and reading skills developed in the project, was used.

Keywords: Latvian language, pre-school age, competence-based approach.

Introduction

The State language in Latvia is Latvian language and good knowledge of Latvian language for children of any nationality is relevant for the successful study process at school.

Language is one of the main forms of national culture. Learning language in childhood depends directly and indirectly on the adults responsible for the overall psychological development of children at a given moment. Holistic approach to shaping the teaching and learning process of Latvian language bears favourably on learners' spiritual and physical development in both real and ideal pedagogical situations in pre-school education (Badjanova, Ilisko, 2014). American linguist and philosopher, N. Chomsky, indicates that language structure reveals human mental capacities and it includes knowledge of linguistics, philosophy and psychology (Chomsky, 2006).

The development of a child's speech today needs to become more important and be promoted, because increasingly teachers in pre-school face the situation of children entering the pre-school environment with poorly developed vocabulary and insufficient skills to make a request to be able to communicate effectively with peers and adults. Taking today's fast-growing trend of daily use of technology into account, as well as the great rush and busy work of parents, it should be acknowledged that a child is often not the winner in this situation and that the child's vocabulary is losing its pace of development. A. Vulane explains that for a variety of reasons, many parents are talking to a child less – both at an early age and in later years, in primary and later periods. Consequently, the child often remains alone in the cultural world that he needs to learn about, decipher and sort into what is valuable or less valuable (Vulane, 2007, 82).

Professor and famous expert in bilingual education, C. Baker, indicates: "Language lies at the heart of education, culture and identity. When a language dies, so does a considerable amount of culture, identity and knowledge that has been passed down from generation to generation through and within that language" (Baker, 2011, 46). This explanation reveals the interaction between language and culture,

which is why the concern about Latvian language learning in pre-schools is theoretically based and to help better develop the necessary educational approach for language learning in pre-schools.

A. Vulane highlights the importance of the environment in learning the language; she explains that the daily cultural environment in which a child has to live is vital for personal development. It can be made up of toys, a world of colours and objects, as well as activities that help a child to watch, listen and read. Most importantly, however, as has long been acknowledged by psychologists, is ensuring that the child is in a loving and respectful environment. In the development of a child's emotional world, it is not only the caresses provided by adults, but also the tone and words of the adult voice (Vulane, 2007, 82).

The importance of the quality of language in the process of interaction with a child is stressed by C. Baker. He indicates that asking interesting questions to a child, creating stories and rhymes could be a very good approach in encouraging the child to form his/her own words and phrases. It is necessary to encourage the child to speak, and not only listen to the parent's speech, because the child should be active in the process of interaction (Baker, 2007). This also reflects the truth about the use of digital devices, regarding the fact that they can only be helpful in speech development in the situation when they are used together with the adult, and not solely by the child.

In addition, multicultural aspects should be considered because globalization aspects influence the children's social environment and their inclusion in a globalized society (Andersone, Helmane, 2018). The teacher's role is essential to support effective learning in a multicultural environment. Linguistic diversity of children are relevant and teachers should know their students and their capacity to acquire knowledge (Moloney, Saltmarsh, 2016). One of the aspects for successful inclusion in the educational process is child's possibility to communicate with peers and well-developed language skills, which are of crucial importance in the child's socialization process.

The aim of the article is to study the promotion of the Latvian learning of children of pre-school age in the pedagogical process in theoretical and practical terms, by implementing various programmes and through the provision of the educational environment.

Methodology

The tasks of this study are as follows:
1) to perform a theoretical analysis of the scientific literature on the peculiarities of Latvian language acquisition of pre-school children in Riga and Kurzeme;
2) to carry out a study of children's audio recordings and to give a qualitative analysis of the obtained data.

Research question is – *how to improve the acquisition of Latvian language of native speakers and minority pre-school age children?*

A pedagogical experiment was carried out to clarify *how to improve the acquisition of Latvian language of native speakers and minority pre-school age children.* Prior to performing the study, signed statements were received from parents regarding support to explore the learning of the Latvian language of children and to implement children's speech records. The developed study methodology was harmonised by the Ethics Commission of Liepaja University. We can assure you that all ethical principles of a scientific study involving children aged up to 7 have been observed. In the study there have been used a theoretical research method – analysis of scientific literature and empirical methods – methodology for learning the Latvian language of children aged 5-6 years old in pre-school education institutions of Riga and Kurzeme, evaluating audio records, and qualitative analysis of the observed facts. A new Latvian proficiency test for 5-6-year-olds has been developed and tested to establish readiness for school in Latvian during the period from May 2019 to June 2019. The study sample comprised 150 records obtained from 5–6-year-old primary school students from Kurzeme (4 pre-school educational establishments, 75 records) and Riga (5 pre-school educational establishments, 75 records). In each region Kurzeme and Riga there were 25 Latvian children from groups with Latvian language instruction, 25 Russian children from groups with Latvian language instruction and 25 Russian children from groups with Russian language instruction. Every record was done in a 20 minutes period. Each student was given a code. The children speech recordings obtained in Latvian proficiency test were analysed according to the following criteria: speech of dialogue, fluency, pronunciation, vocabulary,

grammar and literacy skills. Children were asked to look at the test picture and describe it, answer the questions, create a narrative and read the sentence.

The evaluation of language level was represented in points and the following levels were defined:
  0 points *(insufficient level)* – a child does not have or have very limited (< 5%) knowledge and skills;
  1 point *(low level)* – minimal (< 25%) knowledge and skills;
  2 points *(average level)* – average (> 50%) knowledge and skills;
  3 points *(high level)* – good (> 75 %) knowledge and skills.

Permits have been obtained from the State Children's Rights Protection Inspectorate, the Data State Inspectorate and the data protection specialist of the University of Liepaja to use materials developed or suitable for the Project (information letter to parents; consent form of parents/adoptive parents/guardians; speaking skills rating scale; Latvian test and its evaluation page; survey "Bilingual Child and Language Environment"). For the study to be carried out, parental consent was obtained for audio recordings.

Results and discussion

The role of teachers and parental cooperation in educating the child has now become essential in the educational changes phase of Latvia. The role of teachers and parents is to instil and support the child's interest in learning and understanding, promoting the desire for knowledge. Parents support the child in the learning process by:
- being interested in what the child learns by discussing it;
- developing cooperation relationships with teachers;
- supporting and building the child's autonomy;
- supporting the interests and issues of the child;
- targeted spending of time with the child;
- using everyday situations to learn;
- modelling positive behaviour, curiosity and positive attitudes towards learning.

The actions mentioned will strengthen the child's personality, create a sense of security and a full relationship between the child and the parents, as well as enable the child to develop the vocabulary (Es saprotu…, 2020).

Professor E. Hoff indicates the importance of adults using rich and different vocabulary in communication with a child. Vocabulary should include synonyms, epithets and comparisons to help the child in the language acquisition process. It will help to enrich the child's vocabulary much more quickly (Hoff, 2008). Her research of bilingual children makes the point that "language acquisition is not the easy or automatic result of minimal exposure plus maturation. Rather, language acquisition is the outcome of what the child does with substantial amounts of exposure, sustained by current use" (Hoff, 2020, 86).

A teacher should provide a pleasant and enthusiastic atmosphere so that a child goes to a pre-school educational institution with pleasure and interest. Pedagogical observations show that in such an atmosphere a child safely pursues a variety of activities with confidence, develops a particular skill, acquires knowledge and develops a certain attitude towards the immediate surroundings. However, if a child has an inaccurate pronunciation, and it is difficult to understand what is being said, then the collaborative skills with peers and engagement in day-to-day activities will be complicated. Therefore, the child has an inherent need to express his/her desires, needs, and the words he/she has learnt, as well as the forming of sentences is essential, leading to the development of a child's personality in various aspects.

Professor D. Markus highlights the importance of child and adult emotional communication in the speech process. The more a child develops language, the richer the child's vocabulary of words and forms becomes, and more broadly reflective, diverse and deeper his/her thinking develops – words encourage new thinking patterns and create associations. So, a limited vocabulary does not only stifle expression but also impedes the child's thinking (Markus, 2007).

B.Z. Pearson stresses that written materials, such as children's literature, can be a factor that helps in language acquisition and facilitates language development and retention at an early age (Pearson, 2007). This is an important aspect in many families because reading books with children at home nowadays tends

not to be done as often as before because many families spend their free time in front of the TV or using digital devices. The lack of conversation and reading can lead to a delay in learning the language.

A group of researchers from the University of South Florida indicated that the use of digital devices in pre-school by young children can be very helpful in fine motor coordination, and excellent in the facilitation of storytelling (Decat et al., 2019). It means that digital technologies can be purposefully used in the educational process in pre-schools. Still, the American child psychologist points out that technologies are changing our lives, they are moving on much faster than before, and children are being hurried in their development (Elkind, 2006).

Self-guided learning is promoted in the implementation of the competency approach. This means that a child is invited to assess his/her performance, to listen to what other children have said and to add to their experience, as well as plan, organise and evaluate. This is why it is necessary to support the child in language learning, thereby also promoting the skills of cooperation, critical thinking and civic participation. Competence is complex: it includes knowledge, skills and habits related to motivation and will. Therefore, one of the key challenges in reviewing the content of training is to reduce fragmentation and to reduce the learning from real life situations and the development of isolated skills. Succession, regularity and integrity are the basic principles on which the creation of the new content is based (Es saprotu…, 2020).

In order for every child to acquire sufficient Latvian language skills for the successful commencement of training at the elementary school level, the reinforced acquisition of the Latvian language in minority pre-school programmes is envisaged. Guidelines state that in minority pre-primary education programmes, the learning of the Latvian language in an integrated learning process and day-to-day contact, in line with the development of children, should be promoted every day to achieve the results of the language learning field in a rapid manner. The Latvian language is determined as a means of communication in the day-to-day learning process or in the play session, but at the same time, the results to be achieved are also intended in the acquisition of the minority language (Es saprotu…, 2020).

J. Brodin, K. Renbland points out that the need for different modes to support communication is extensive. Pre-school plays a key role in child development, and it includes both day care and kindergarten. All children, typical and atypical, attend an inclusive pre-school, and the motto in Sweden is 'a (pre)school for all'. They focus on finding out if reading aloud and storytelling could enhance children's communication development and how, as reported in many global studies (Brodin, Renbland, 2020). Pre-school is expected to stimulate children's learning and development from a holistic point of view, and most children between one- and five years old attend pre-school. The demands on pre-school teachers are growing in pace with the increasing number of immigrant children arriving to Sweden without being able to speak the Swedish language. This is a challenge for the pre-school system. The goals in pre-school are many and the teachers are responsible for attaining the goals 'to the extent possible' (Brodin, Renbland, 2020). In implementing the competence approach, children engage in activities promoting self-directed learning, the child appreciates the results of their work and others' work, better understands what is successful and what needs more focus, and that challenges must be targeted.

Cabinet of Ministers Regulation No. 716 "Rules regarding guidelines for State pre-primary education and samples of pre-primary education programmes" states that "the aim of implementing the content of pre-school education is to develop an inquisitive, creative and vibrant child who has a healthy, safe and active life, works independently, learns with interest and pleasure, gaining experience of herself, others, the surrounding world and interaction within it" (Regulations Regarding …, 2018).

Every child has the right to develop his/her potential and this is a question about the equity provided by pre-school education settings. Equity ensures that a child can develop intellectual, social, emotional, linguistic and physical capabilities (Friedman, Mwenelupembe, 2020). A competence–based approach could be of great use in reaching this goal.

Z. Anspoka, I. Irbe, D. Liepina and A. Miesniece note that an appropriate learning environment is essential in the organisation of the pre-primary education process. The learning environment needs to be motivational so that every child has a desire to get involved. The environment needs to be dominated by relationships that promote the desire to improve the outcome of work, enable each other to learn from one another with a dignified attitude in referencing errors and shortcomings. In pre-school, good learning outcomes cannot be achieved in a competitive environment where formal results are important, where

social comparisons occur, children are divided into groups by capacity, and where the learning and evaluation process places emphasis on the right answers. In the process of learning the intended content it is important to take into account the fact that the educational objectives are important for the child and that they are involved in establishing them (Anspoka et al., 2020).

This is achieved by the teacher through the targeted planning of the child's activities, providing the necessary materials and means of training by meaningfully asking, negotiating, analysing situations, tackling problems together, offering productive tasks, diverse and carefully selected examples, situations and demonstrations. In the training process, the teacher shall involve every child, providing adequate support and monitoring for each child.

Researchers V. Grøver, V. Rydland, J.E. Gustaffson and C.E. Snow emphasize teachers' professional competence in engaging children in conversations around books as a mechanism for promoting language growth. It is very helpful for children whose language environment in pre-school and family is different to acquire new vocabulary (Grøver et al., 2020). The study of researchers from UK indicates the importance of books that contain personalized content for a child. They have concluded that books, which are personalized, can better facilitate young children word's acquisition. Personalization is indicated as an important factor in child vocabulary development (Kucirkova, Messer, Sheehy, 2014). In the reading process adults play a central role by asking questions and providing positive feedback of child speech (Lenhart et al., 2020). Adult verbal responsiveness is a promoting factor in successful vocabulary development and learning process of new words (Blewitt, Langan, 2016). These findings can be helpful in the organization of the educational process in Latvian pre-schools where children learn Latvian language.

Teacher and child conversations are important factors in language acquisition. The pattern of teacher use of elicitations and extension in communication with a child can be helpful to his/her vocabulary growth (Cabell et al., 2015). Storytelling also could be used in vocabulary learning. Children engagement in interesting storytelling have a positive effect on vocabulary development (Vaahtoranta et al., 2018).

Dialogue involving the exchange of reasons for and against claims could be seen as a prototypical form of dialogue itself. Although discourses exchanged in face-to-face interactions draw on non-verbal communication and may even be performed using only gestures, pictures or signs, we shall assume that dialogues are interactions where language is predominant (Schwarz, Baker, 2016, 73).

Exposure to speech characterised by lexical diversity provides children with more opportunities to expand their vocabulary by learning new words. Hearing a different word not only enables a child to learn the meaning of this word but also exposes the child to various phonological patterns. Additionally, exposure to a variety of words allows children to hear words in different contexts or with different descriptions, which may help children learn about that word. For instance, the same word (e.g., "ball") may be used in two different sentences (e.g., "The ball is round and red" and "I'm rolling the ball with you!") to convey different information about that word. This diversity also helps a child learn more about that word. Similarly, if a caregiver uses a variety of words in a sentence or phrase, the child may know some but not all words that the caregiver says. Knowing other word meanings in a sentence increases possible interpretations of a new word and thus, the lexical diversity of the sentence may contribute to children learning the meaning of a new word. These studies highlight the importance of lexical diversity in the speech of caregivers (Zauche et al., 2016, 323).

The children speech results obtained in Latvian proficiency test were following.
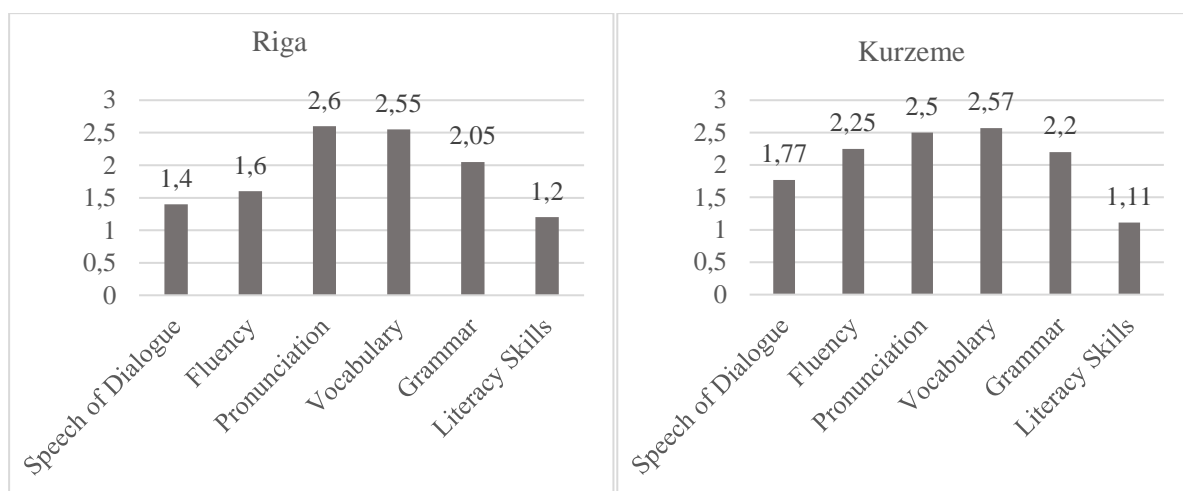
Figure 1. Skills for learning the Latvian language of native Latvian speaking children in Riga and Kurzeme (values represent children language level indicated in points).
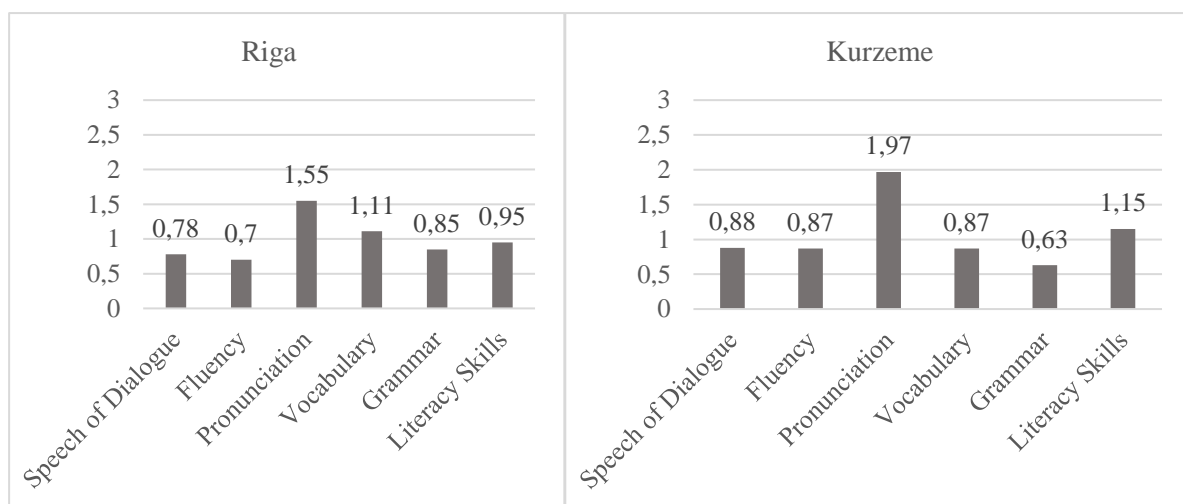
Figure 2. Latvian language skills of minority children in Riga and Kurzeme in groups with Russian language daily (values represent children language level indicated in points).
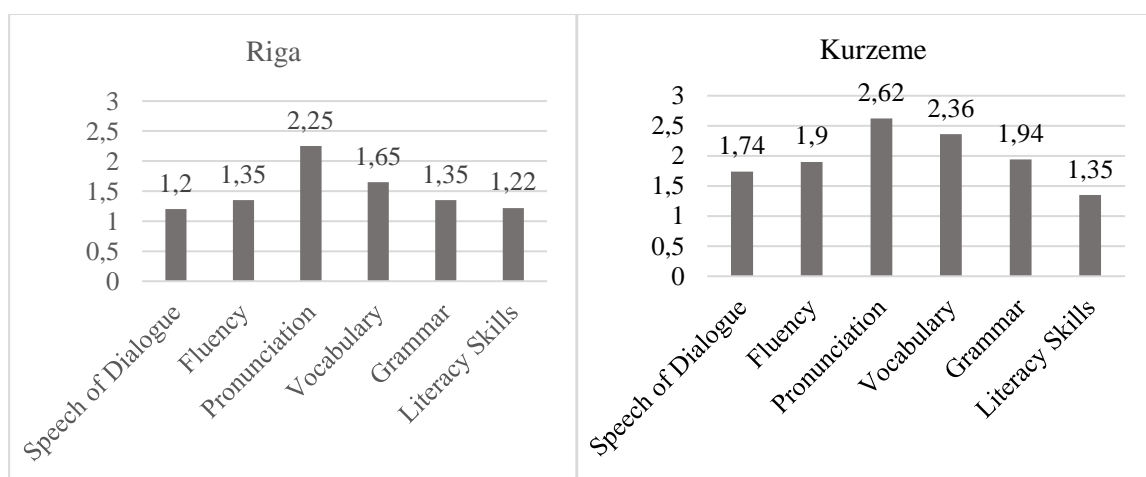
Figure 3. Latvian language skills of minority children in Riga and Kurzeme in groups with Latvian language daily (values represent children language level indicated in points).

The results obtained highly demonstrate that, for children visiting groups using the Latvian language every day, the Latvian language skills are significantly better than the language skills of minority children visiting groups using Russian-dominated language every day (Figures 1, 2, 3).

If a child's family is bilingual, a child in a group with a daily dominant Russian language may also have good results learning Latvian in reality; however, most of these children come from families who speak Russian every day, so often the only place to practice Latvian is in a pre-school education institution.

Conclusions

The following conclusions crystallized as a result of the theoretical analysis:

- language is an important part of culture and identity, so it is important to pay attention to its acquisition in preschool;
- a holistic approach to Latvian language teaching has a positive effect on learners' mental and physical development;
- language structure learning develops human mental capacities;
- the role of the teacher is essential to support the child's effective learning in a multicultural environment and integration into a globalized society;
- nowadays increased attention is paid to cooperation between teachers and parents to inspire and support the child's interest in learning, to discuss the child's developmental difficulties, if there are any, to promote the child's independence and autonomy, which will expand the child's vocabulary and create a sense of security;
- providing a pleasant and enthusiastic atmosphere in pre-school creates a motivation for the child to come to pre-school, live with joy and learn language through play, which later ensures successful integration into primary school.

The results of the research by qualitatively analysing the audio recordings of children's speech are as follows.

- The best results in pre-school can be achieved in child pronunciation development. Children whose mother tongue is different also show the best performance directly in the Latvian language. This phenomenon is the opposite of what is observed in adult speech, because when you learn a second language under the influence of the stereotype of the mother tongue, the differences in pronunciation persist for a long time. During the study, we observed that minority children do not have trouble imitating the Latvian language pronunciation, even if the child does not know the meaning of the word. Therefore, for second-language learning, pre-school age is very appropriate.
- Expanding the vocabulary is the next result to be reached, but here the rating is varied.
- For those children who visit groups using the Latvian language (as native and second), the Latvian vocabulary is substantially richer, while for those minority children who visit groups using Russian every day, the Latvian vocabulary is very poor and only covers some of the most commonly used names in the household, and they are usually nouns in the nominative case.
- Some parents do not pay much attention to children's reading skills at pre-school age, believing they will be learnt through school training. The recommendation is to provide a real bilingual environment for minority groups of children.
- Over the last two years, the introduction of new education guidelines is being implemented in preschool, which provides for a significant increase in the use of Latvian language also in minority pre-primary education institutions with an improved methodology for learning the Latvian language.
- Various methods were used during the research - reading aloud, asking purposeful questions to children, forming dialogues, activating cooperation with other children in the form of games; phonology, teaching grammar and stimulating reading, which promoted the development of curious, creative and dynamic child, which enjoy learning with interest gaining their own life experience.

- The results of the study give an answer to the issue – to ensure more successful integration of children into school, the development of the Latvian language should be strongly promoted in the pre-school education institutions in contact with children.

Acknowledgments

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The Language of Ecology within the Frame of Public Relations Discourse

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Abstract: The article emphasizes the importance of the language of ecology in teaching English as a second language (L2) to public relations (PR) undergraduates. The research is aimed at making L2 PR undergraduates be aware of the necessity to protect the environment by means of reading specialized literature with a special focus on the language specifying issues of ecological ethics. Linguodidactics sees the educational ecosystem as one of its major trends of future development, as the undergraduates are not only to master single as such, but take them as a system pertaining to a human existence in the benevolent and harmonious world. Environmental conservation deals with sustainability, a subject to be taught through special vocabulary and professionally oriented texts. The methods employed in the present research include analysis and synthesis enabling the process of categorization and systematization. Theoretical achievements of linguodidactics in L2 professional education provide for the necessity to develop emotional competences, emotional intelligence, empathy, sympathy and sensitivity to the surrounding world. The research has shown that specially selected professionally oriented language units help the formation of a certain vision of the ecological situation in the modern world through the professionally oriented PR discourse. Ecological ethics for future PR experts becomes intrinsic for the development of their professional competences. Through the professional PR language, it is possible to establish an ecological aesthetic system aimed at promoting sustainable development regarding the environmental protection.

Keywords: lexical competence, language of ecology, ecology ethics, public relations discourse, PR undergraduates.

Introduction

We are living in the ever-changing environment of the fluctuating world, caused by the globalization process, which is the result of the technological advances of the developed world. Recently, globalization has shown a fairly steady and rapid progress, and has become an international driving force that due to progressive achievement has increased speed and scale to such an extent that countries all over the five continents have become engaged in this process and have been affected by it. Globalization is defined as a process based on international strategies, aimed at expanding business operations at the global level, and accelerated by the development of global communications as a result of scientific advancement, social, economic and political developments that cause environmental contamination. This can result in global environmental consequences affecting future generations. The process of global contamination occurs at a constant rate, independent of any environmental conditions. Moreover, scientists note that it has an intrinsically supranational character. The study of regional environment demonstrates the active engagement of people to conserve the environment. However, the world community considers that it is not only the duty of every state in the political sense (Minyar-Beloroucheva et al., 2018), but every person on the planet to do so.

Globalization has influenced education, which in its turn is influencing the process of globalization per se. This fact is reflected in the worldwide educational reform called "deep learning". It implies a turn from traditional learning to a new comprehensive strategy incorporating practical tools and processes, as is postulated to lead to best ideas coming from practice, to engage undergraduates and educators into preparing the former for active, engaged participation in their future professional activity. In this case, the teachers are transformed into activators whose task is to develop global competence using real-life problem solving cases. Accordingly, the development of new competences is needed for the implementation of the "deep learning" idea into life. That is why the traditional competences are being substituted by new ones (Fullen, Quinn, McEachen, 2017). Scientists infer that to live in the global world it is better to concentrate on the development of global citizenship (Moreno et al., 2012) competences.

Developing global citizenship competences, which implies the involvement of PR undergraduates in active participation in projects that tackle numerous global issues such as social, political, economic of which the

environmental ones are of primary importance, is unthinkable without developing emotional competence. The goals of education have become deeper. At present one of the priorities of L2 teaching to PR undergraduates is to equip them with the ability to feel the necessity to protect the environment and communicate this idea throughout the world to their counterparts in other places of the planet. For this purpose, it is most effective to use authentic materials in class to develop global citizenship and emotional competence among L2 undergraduates. It is impossible not to agree that authentic materials "bridge the gap between the classroom and the outside world and they bring reality to the classroom. Authentic materials are those which were not created or edited for language learners" (Reid, 2014). Authentic materials are the ones that are used in the real world of the professional PR sphere. They comprise documents, articles, books or press releases, that arouse among L2 PR undergraduates not only emotions of different kinds but the feeling of duty pertaining to the citizens of the world (The Clinton Global…, 2015) to preserve the global environment for the present and succeeding generations. Authentic materials are constructed of sentences made up of words and phrases that reflect the state of the art in every field of human activity on the global level that brings about pollution and contamination of the environment. In L2 teaching professionally oriented vocabulary mirrors the environment which is the habitat of the people. The properly chosen professionally oriented vocabulary develops emotional competences, in this case, aimed at the strive of contribution to sustainable development. Basic human values are revealed in the professional PR language corresponding to the main task of humanity to safeguard the future. The purpose of the study is to specify the necessity to protect the environment in the context of public relations discourse by developing PR undergraduates' lexical competence in teaching them the language of ecology.

Methodology

Methods and methodology play an important role in traditional research in general and in the research of PR discourse in particular. They are based on the international standards which are focused on the hermeneutic analysis of the text aimed at the development of L2 PR undergraduates' emotional competence. To implement the idea into practice, it was necessary to analyse PR texts of the international companies to use their press releases for didactic purposes. To achieve the goal, it is necessary to survey the material, to carry out a continuous sampling, to investigate the most effective language persuasive means as well as test the teaching methods and evaluate the results. The elaboration of new research methods and approaches aimed at revealing the content of PR discourse as well as studying the language ecology for the end of environmental protection and preservation through L2 teaching process is given a special prominence in this research. The current research demanded the semiotic approach to L2 professional PR language and PR discourse, methods of cognitive modelling of PR discourse, methods of philological analysis of PR discourse and didactic materials as well as category analysis. The methods of etymological and semiotic analysis taken for the study of professionally oriented discourse were also applied.

Results and Discussion

At present people have come to realize that everyone is obliged to preserve nature and the environment as well as take care of natural resources. Unlike the language of ecology that has not been the focus of linguistic attention, the problems of environmental protection and human exploitation of the environment have been prominent for decades. Environment specialists try to calculate the less damaging effect of the production industry. Environmental characteristics are based on the assessment of environmental data that on par with fluctuation in climate change has affected them. Thus, the climate warming of 1,5 degrees Celsius is considered a goal to minimize the harmful effect of human interference, as suggested by the UN's Environmental Programme – UNEP (UN's Environmental Programme…, 2020). Environmental conditions diversify different areas. Until the end of the previous century, little attention was paid to ecological contamination. It is substantiated by that fact that the first environmental conference was summoned only in 1972 in Stockholm – United Nations Conference on the Human Environment (UNCHE) (Heywood, 2011, 387). From that time on, the grounds were laid for UN initiatives and programmes to advance environmental protection actions globally. A lot of research was initiated at that time; however the issues were not given proper attention in the coming decades until recently. To prevent the acceleration decay of the modern environmental conditions, contemporary PR releases assure that their companies are doing their best to save the natural world by producing green products in line with the recommendations provided by UNCHE. Companies, such as Nestle, Procter and Gamble and even oil-producing Shell and BP strive to

make products of inorganic materials to protect the environment. Special attention is paid to the most effective means of production and the use of electricity to facilitate the manufacturing processes.

Environmental ethics is becoming an advanced field of study for a good reason. It considers human beings as part of the biosphere, also known as the ecosphere, that consists of a number of ecosystems that is the natural field of life on the planet. Human beings interrelate with other species in the ecological system or ecosystem where despite their self-assurance to be dominant in the natural world, the environment governs their lives. Environment determines climate and vegetation, which in their turn influence animal life. All these things put together for centuries moulded the mode of human life. Although the environments did not enjoy the deserved attention in the previous centuries, at present the environment is not taken as something inalterable, constant or homogeneous through space and time anymore. This determines the greatest task of humanity to protect the environment. People do fret over climate change, de-forestation and the excessive emission of carbon dioxide into the atmosphere. The environment is regarded as something variable, constantly changing and being permanently in the state of flux. Nevertheless, it requires answers to a great number of broad questions of climate, de-forestation, the excessive emission of carbon dioxide. Environmentalists write declarations and articles on the necessity to stop the manufacturing enterprises that pollute and contaminate the environment. Words have the specific power of persuasion if they are uttered or written by the representatives of respected and powerful companies.

A recent trend of environment conservation deals with sustainability. It is one of the important steps to lessen the industrial and social impact on the globe. Environmental sustainability is defined as "a state in which the demands placed on the environment can be met without reducing its capacity to allow all people to live well, now and in the future" (GMET…, 2020). There are numerous indications of changes that occur in the field of natural resources. Environmental sustainability is necessary to decrease the usage of non-recurrent natural deposits and the results of human activities as well the effect on the biosphere of the planet. The task of environmental sustainability is thus to reduce the exhaustion of non-renewable resources. Sustainability can be comparable on the two sides of the coin, as we both benefit from sustainability and are accountable for its maintenance. Humans are responsible for the health, prosperity and well-being of the planet. There are various initiatives at maintaining the sustainable development for the sake of future generations. One of them is the educational part which includes raising awareness of popular measures and necessary actions to be taken to protect the environment. Environmental sustainability is a multifaceted concept that integrates environmental sustainability, economic sustainability, and social sustainability. They comprise the Three Pillars of Sustainability (UN General Assembly…, 2005) which serve the basis for harmonious existence and environmental conservation.

The aforementioned issues become especially relevant for L2 teaching to PR undergraduates, who will be professionally responsible for informing and educating the public in terms of environmental protection. It is necessary to state that although there is no unique definition of PR and the attitude of specialists is ambiguous, L2 PR undergraduates should not be misled about it. Thus, some scholars think of PR as a benevolent practice, essential for the society helping people to be conversant in this complicated world. One of the most successful definitions suggested by Dr. R. Harlow in 1976 summarizes various prior attempts to define the subject matter: "Public relations is a distinctive management function, which helps establish and maintain mutual lines of communication, understanding, acceptance and cooperation between an organization and its publics; it involves the management of problems or issues; helps management to keep informed on and responsive to public opinion; defines and emphasized the responsibility of management to serve the public interest; helps management keep abreast of and effectively utilize change, serving as an early warning system to help anticipate trends; and uses research and sound ethical communication as its principal tools" (Harlow, 1976: 36). Others are cautious and express their concern that well planned communication could mislead the people. Prominent linguist Professor Noam Chomsky puts people on their guard regarding PR campaigns. In particular, he writes, criticizing the PR practice that it has been used 'to further the ends of a few, regardless of the needs of many' (Wolstenholme, 2013: 3). This debate is a concern of separate investigations within the domain of ethical issues. However, major PR companies have grown conscious about the existing problem, it is the task for their management to adapt to the new situation. PR specialists are at the front line of popularization of the companies' actions and communication with the public concerned. The process of L2 teaching should be included into the system of general education as part of social sustainability, reinforcing

the three pillars of sustainability. Learning L2 professionally oriented language is of primary importance for PR undergraduates. To be proficient and successful in one's career, future specialists should be able to communicate in L2 language on professional topics, to express their ideas on particular issues. One of the most important tasks of L2 PR undergraduates is to do their best to protect the environment. In this connection, special attention should be payed to the PR texts dealing with environment protection. Press releases express the policy of the companies on the above-mentioned issue. Moreover, the texts should be persuasive despite their specific construction. Examples of PR releases can support this idea.

Thus, one of the authentic texts taken for the research is an excerpt from a real-life PR text of the world's largest food and beverage company Nestlé, found in the company's sustainability report:

- *Nestlé will continue to engage with all its suppliers to fulfill its no deforestation commitment more quickly. In particular, the company also recognizes the need for a collaborative approach to improve smallholder's capacity in eliminating deforestation. Nestlé is working to find solutions that ensure sustainable supply chains while respecting people's rights to improve their livelihoods.* (The Nestlé Policy…, 2013).

This corporate PR text highlights the necessity to preserve forests and states the company's commitment to this initiative. PR undergraduates learn about the urgency of environmental issues on the examples of authentic professional PR texts.

Another example cited here is borrowed from "Green and growing" online magazine promoting the issue of sustainable development:

- *Since the Industrial Revolution, society has progressed immensely. However, the damages on the environment are measurable and scientists are concerned about the future of the planet. On the positive side, the development of biofuels and nuclear energy helped to reduce the burning of fossil fuels. The automotive industry, in particular, is trying to adopt a new scheme to build bio means of transportation such as the Hybrid. Elon Musk's Tesla cars prompted Volvo to plan to adopt the same technology in 2019* (What Is Environmental…, 2020).

This PR text specifies the importance of sustainable development. The Environmental contamination are much due to the industrial revolution and the progress thereafter. As is known from history, people first were not aware of the level of pollution their descendants will come up with. By studying the authentic text PR undergraduates can get the history of environmental damage inflicted by the human achievements throughout the time.

The next text taken as an illustration of the importance of employing authentic material for the didactic purpose in teaching PR undergraduates is an abstract from a PR press release of the global energy company BP plc.:

- *We are delighted to be embarking on BP on the next phase of Aberdeen's drive to support local, national and international climate change targets. Jenny Laing Co-leader of Aberdeen City Council Councillor. "Our credentials are second to none for the deployment of ground-breaking technology in addressing climate change – the European Offshore Wind Deployment Centre, Hydrogen Aberdeen and the first bus fleet and refuelling infrastructure in the UK.* (BP and Aberdeen…, 2020).

As seen from the example, at the present stage when the world has verbalized its major concerns about the high level of air, soil and water pollution, all major companies have started to verbalize their concerns regarding their professional activities. Future PR experts have a chance to learn from the authentic material to get a clear knowledge of the current developments and their actions as professionals *in locum suum*.

PR undergraduates should have no difficulties in choosing words and expressions to construct sentences and texts. To achieve this the vocabulary of L2 PR undergraduates should be rich, boosting their lexical enrichment. It means that despite the development of new competences (Fullen, Quinn, McEachen, 2017), the development of traditional ones should not be neglected. To reconcile traditional and new competences is the task of linguodidactics (Minyar-Beloroucheva et al., 2020). Linguodidactics is a kind of didactics that studies the interconnected process of a person's knowledge of the surrounding world, supervised by their educators. Distinctive features of linguodidactics are the recognition of its subject of language and its special consideration as a learning tool. The main goal of linguodidactics deals with

the organization of a systematically implemented educational process, which consists in transferring knowledge, skills and abilities accumulated by previous generations in the field of a particular language to the undergraduates. To achieve this goal, linguodidactics solves the following tasks: determining the content of language education; development of the most effective ways and methods of teaching languages; selection of relevant and useful language knowledge, skills; identification of patterns of language learning. The objects of linguodidactics are considered the language as the subject of instruction, the process of learning and the factors that influence this process: the concept and paradigm of the current language education, its content, the organization of the educational process, technologies and methods for mastering knowledge (Vorontsova, Vishnyakova, 2018).

One of the traditional competences deals with the development of lexical competence, which is necessary to enrich the professionally oriented vocabulary. Under vocabulary is implied a set of words and phrases that form a system. In L2 professionally oriented teaching vocabulary is defined as lexical units that L2 PR undergraduates can acquire in the process of learning to be able to construct sentences to express their ideas. The increased attention to the study of vocabulary can be explained by a number of reasons: the content of the utterance depends on the degree of proficiency in vocabulary, the vocabulary to be learned is not uniform in its psychological and psycholinguistic characteristics, the learned lexical minimum should be considered as the basic (reference) vocabulary. It should be noted that the development of lexical skills is essential for such types of speech activities as listening, reading and speaking. The complex process of mastering an L2 professionally oriented vocabulary can be divided into several stages such as: introduction of new lexical units, semantic analysis, i.e., when the meaning of the new word is revealed, testing the understanding of the new lexical units, learning and memorizing the new professionally oriented vocabulary, training of the use and perception of new vocabulary. It is recommended for L2 PR undergraduates to learn new words independently where the teacher plays the role of an assistant and organizer and is called an activator (Fullen, Quinn, McEachen, 2017).

L2 PR undergraduates' development of lexical competence depends upon the method of L2 teachers/activators used in their professional activities. The modern communicative method of L2 teaching requires the development of L2 lexical competence in real communication situations that meet the needs of professionally oriented L2 PR undergraduates. Previously reading aloud, translating words into the native language and memorizing them was a traditional method of L2 teaching. At present, such a method is considered obsolete as it counteracts the method of L2 practical mastery aimed at achieving the necessary level of communicative competence. Moreover, such a method does not develop L2 undergraduates' thinking, nor contributes to the development of L2 intuition. That is why new competences have been recently developed and are being implemented in the educational process. They are known as 6Cs (six competences) as they include the following six competences: character, collaboration, communication, creativity, critical thinking and citizenship (Fullen, Quinn, McEachen, 2017).

To acquire a new vocabulary L2 teachers/activators should scaffold (Ikawati, 2020) L2 PR undergraduates by using such methods as explaining the meaning of the new vocabulary by means of the non-verbal demonstration, or explanation through context, using synonyms, antonyms and paraphrasing. L2 teacher/activators should encourage L2 PR undergraduates to do language guesswork when teaching vocabulary. There are various exercises for training vocabulary to consolidate the knowledge within the professional field of study. The basic principles for vocabulary training are: systematism, situationism and undergraduates' independent work. Exercises should reproduce a real situation of communication, they should be varied, interesting and develop the language abilities of the undergraduates.

For L2 PR undergraduates dealing with environmental protection and ecology, it is necessary to know that the development of humanity should be ecologically sustainable. L2 PR undergraduates should be aware of the possible ways of reconciling environment and ecology to preserve the planet from entropy. The more L2 PR undergraduates know about these phenomena the more they can do in the future. Their knowledge should start with the understanding of the term 'ecology'. This term 'ecology' owes its emergence to prominent German zoologist Ernst Haeckel in the middle of the 19th century. The term is derived from the Greek 'oikos' meaning household or environment, where the correlation of living and inanimate nature is of primary importance for their harmonious existence. Thus for Ancient Greeks, ecology and environment were an integral whole. At present, they are the terms of different academic disciplines. Despite the existing separation, scholars and Green Peace activists want to return them to

the primordial sense. For the sake of preservation of human beings, flora and fauna, inanimate nature of our planet measures are taken to draw attention to the issues of ecosystems, human intervention and harmful effects of exploiting natural resources. Thus, the focus is put on the existence of human beings in the modern ecosystem. As a political ideology, ecology is gaining momentum (Heywood, 2011, 384). Ecology is given the priority for the issue of preserving the environment for the future generations, language being one of its most persuasive tools.

Most present-day PR campaigns and programmes of Corporate Social Responsibility of giant multinational companies aim at promoting the idea of sustainable development. This indicates that their predominant effort is to keep in line with the conservation policy of the environment conscious countries. Language policy is this regard fosters the achievement of the goal. *Language ecology* is defined as the study of the interactions between any given language and its environment. The true environment of a language is the society that uses it as one of its codes. (Haugen, 1972). A new language is needed (Bentley, 2020) which can be created on the basis of the work of PR undergraduates doing research on nature preservation. Scientists claim that the language of ecology can be equated with society. The foundation works prove that it is necessary to additionally identify the dominant ecological context, within which the development is unfolding. Other theorists devote special attention to different aspects of ecological ethics implication (Scheid, 2016; Jia, 2020).

When speaking about the education of PR undergraduates, it is important to bring closer the professional L2 discourse with the most relevant issues (Table 1).

Table 1

Examples of lexical phrases mirroring the problem of environmental pollution and its solution.

Environmental disasters	Environmental protection projects	Plans to avoid damage to the environment	Environmentally friendly advanced technology
climate change; greenhouse effect; global warming	to protect forest; to replant trees; to enhance biodiversity; zero deforestation	to limit greenhouse gas emissions	the use of energy from renewable sources
deforestation acceleration; acid rains	to decontaminate the environment	to achieve zero net greenhouse gas emissions	the development of biofuels
the burning of fossil fuels; carbon dioxide emissions, Hydro-Carbon engine releases	biomaterials to store carbon dioxide	to achieve zero net greenhouse gas emissions; promotion sustainable development; bio/circular economy	bio means of transportation; hybrid transportation
chemical releases into streams without treatment	moving to alternative packaging materials	to limit global temperature rise to 1.5°C	Ground breaking technology; industry know-how
soil degradation	climate-friendly ingredients	programs with farmers to restore land	more sustainable formulas for climate change; bioremediation

Together with instructing PR undergraduates on their professionally oriented foreign language, it is essential to in still the relevance of language ecology and ecological ethics. Through the professional PR language, it is possible to establish an ecological aesthetic system aimed at promoting sustainable development. As language determines the worldview, in it is necessary to stimulate L2 PR undergraduates to read the texts and thus learn the vocabulary dealing with environment protection. L2 PR undergraduates should be absolutely trustworthy of the information contained in PR press releases. The ecological vocabulary used there can be classified into several groups indicating the companies' concern for the environment.

To harmonize (Vishnyakova et al., 2020) and develop traditional and new competences L2 PR undergraduates should be prompted by their activators to work in teams 1) Here is a list of words dealing with the environment protection, which function in the set of texts. Add the related words connected with the present situation. Read out loud the words and phrases to be expanded on them by your team mates; to work out a project dealing with "Our journey to net zero"; 2) prepare a presentation on the subject "Global citizens

on the reduction of greenhouse gas emissions"; 3) write a call "1.2 million cars off the road"; 4) organize a mini-conference on "The responsible sourcing of its raw materials"; 5) write a press release "Setting a bolder ambition to reach a net-zero future"; 6) make up a story concerning the environment protection using the terms from the text. Discuss it with fellow students; 7) make videos showing the pollution of the environment and how to improve the situation to demonstrate innovative leadership in reality.

These are only several strategies how to reconcile traditional and new competences. The subject matter should be properly chosen as the new words that are trained during class and independent types of work are kept in mind when setting certain guidelines for future L2 PR undergraduates' activities.

Conclusions

At present, the language of ecology reflects is the main trend in treating the ecosystem of our planet through instilling concern for ecological ethics. The language of ecology which is of great help serving these purposes, is not only noted for its purity, it is aimed at constructing the mental space of L2 PR undergraduates in which an ideal zero deforested and net-zero future world could be visioned. The educational system should prepare the future PR councillors to be actively involved in their future environmental protection and sustainable development. To achieve this, new competences, known as 6Cs, such as character, collaboration, communication, creativity, critical thinking and citizenship have been developed. In a rapidly changing globalizing world, when environmental disasters become prominent, it is essential to address the issues of climate change, greenhouse effects; global warming, deforestation acceleration; acid rains, burning of fossil fuels; carbon dioxide emissions, Hydro-Carbon engine releases, chemical releases into streams without treatment, soil degradation and other environmental disasters caused by the human activity. Theoretical achievements of linguodidactics make it possible to introduce the language of ecology into the professionally oriented teaching of the second language to work out ecological ethics, necessary for nature preservation and safeguarding the future.

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Learning Challenges During Pandemic Situation: Lithuanian University Case

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Abstract: Learning issues in the context of the pandemic situation will be discussed in the paper. Research problem – learners lack relevant information, knowledge and skills about creativity for adequate problem solving. Distant learning requires to create environment suitable for students' needs in the case of a critical situation (for example, Covid 19 pandemic). It motivates students to change their attitudes and behaviours while combining different actions based on their self-awareness and creativity. Therefore, students need to develop their creativity skills to facilitating problem solving. Moreover, it is significant to raise students understanding about themselves to make adequate decisions for efficient learning during the lockdown because of Covid-19 pandemic. The aim of the research is to find out and discuss students' learning difficulties and experiences during a pandemic, and to find out how creativity can contribute to problem-solving. For this reason, it is essential that learners concentrate on how to develop their creativity for better learning in uncertainty conditions. Used research methods were scientific literature analysis, quantitative (questionnaire) study and descriptive analysis. The findings of the study demonstrate that learners have major distant learning difficulties and various social psychological problems during the pandemic situation in Lithuania. Moreover, the results show that learners lack understanding about the importance of knowledge and opportunities for creative problem solving during distant learning processes in the pandemic situation.

Keywords: university education, pandemic situation, learning, challenges, creativity, problem-solving.

Introduction

A pandemic is an epidemic that has spread over multiple countries and continents. The disease was first identified in December 2019 in Wuhan, China. The outbreak was declared a Public Health Emergency of International Concern by the World Health Organisation (WHO) in January 2020, and was recognised as a pandemic in March 2020. COVID-19 has affected day-to-day life, businesses, education and disrupted world trade and movements. The COVID-19 pandemic has a big impact on the learning outcomes of education systems across world, which affects all learners, teachers, although in differing degrees depending on multiple factors—including the country/region where they live, as well as their age, family background and the degree of access to some "substitute" educational opportunities. School closure is systematically associated with the development of problems involving students, teachers and parents, particularly among populations with poor resources. Unfortunately, there are not yet convincing scientific evidence that school closure would provide real effectiveness in controlling a pandemic (Esposito, Cotugno, Principi, 2021). In spite of that, in many countries, educational institutions have moved to work remotely for health security purposes, which means rapid digitalisation of the learning process.

However, it is not easy to digitalize learning processes, but it opens up new learning horizons and challenges providing students with learning from anywhere they have access to the Internet, as well as learning at their convenience. Digitalization offers tremendous opportunities for innovation, growth and employment, contributes to the global competitiveness of people and enhances creativity and cultural diversity (Visvizi, Lytras, Daniela, 2018). The digitalization and the digital transformation of education stimulated by it increasingly influence the development of the education system including the learning process of individuals, which poses new challenges and tasks. O. Vindaca and V. Lubkina (2020) worked out the concept of transformative digital learning – the process of individualized, lifelong spontaneous or planned technology – enhanced learning, changing and updating of educational results, content, methods and organizational forms adopting them to the quickly evolving digital environment, including physical and philosophical change or transformation to meet growing demands of learners to achieve rich intellectual property by defining new perspectives and adopting personal worldview accordingly value – created learning. Transformative digital learning is associated with qualitative changes in educational work, especially in higher education.

However, during the first pandemic wave, all learners lacked daily access to their basic educational institution's provisions, they also lost group activities, relationships, social links and other face-to-face possibilities. It goes without saying that the education system was not ready to cope with a situation like this as it lacked experience, knowledge and structure to sustain and to provide the necessary web-based learning safety for more effective teaching and learning processes.

Although academics are known for their resilience and ability to adapt to changing circumstances, the pandemic caused additional concerns and suffering for both students and academic staff, especially regarding internships when it was transferred or cancelled. Some teachers have successfully adapted, while others are still trying to adapt and looking for solutions to ensure adequate teaching quality in the face of Covid-19 uncertainty (Jung, Horta, Postiglione, 2021).

Furthermore, as the structure of readiness for professional activities is formed of two basic components – psychological readiness and competence-based readiness, the school needs educators, who are aware of the teacher's mission under the changing circumstances nowadays (Baltusite, Katane, 2014). Therefore, the need for educators to adapt quickly to the changes caused by a pandemic, to be prepared to work remotely, to use both their psychological resilience and to make full use of their pedagogical competencies is essential. Moreover, one of the pedagogical competences is teachers' verbal creativity, what includes all features of its expression - creative fluency, flexibility and originality. That is why any change begins with the teachers' personality, knowledge, experience and skills (Valantinaitė, Sederevičiūtė-Pačiauskienė, Dislere, 2016). In these pandemic conditions, educators need to be particularly flexible, to be able to adapt quickly to new circumstances, to find creative solutions to teaching materials, and rapidly develop verbal creativity for learning in a remote environment.

The current lockdown is unique, and in most ways, it is much more severe than any other crisis we have experienced in recent history. Almost overnight, the pandemic forced the cancellation of the traditional learning that occurs in university and school settings. The pandemic has affected inputs at home as family and community health and work crises are less able to provide supports for learning at home. Due to the fact that there are no direct comparisons to past events or trends, we are without fully valid references for assessing the likely impacts of the COVID-19 crisis on learners. There are, however, specific aspects of this crisis that have arisen in other contexts and been studied by education researchers, and we can derive from them some guidance on topics such as the loss of learning time and use of innovative learning methods (García, Wiss, 2020).

The 2020–2021 academic year is now underway with many universities remaining physically closed as the 2021 year begins, there is more need to understand and think through if we are ready to meet the crisis head-on. If teachers are expected to do their jobs effectively during the pandemic, and if our education system has to achieve the goals of excellence and equity in the later stages of a pandemic, it will be critical to support students who learn a lot and struggle for their own development, learning what problems prevent teachers from teaching these students and what efforts it is needed to make to address these problems (García, Wiss, 2020). As this pandemic has affected thousands of people in various fields such as health care, economic, social and everyday life. Quarantine and treatment of suspected or confirmed cases were a big challenge for health care. Overload on doctors and other healthcare professionals, who are at a very high risk and disruption of a medical supply chain. Economics: recession of manufacturing, disconnection of the supply chain of products, losses in national and international businesses, poor money flow in the market, significant slowing down in revenue growth. Moreover, the social service sector is lagging behind to provide proper services, cancellation or postponement of large-scale sports and tournaments, avoiding national and international travelling, cancellation of celebration of cultural, religious festivals, closure of places for entertainment such as cinemas, theatres, sports clubs, swimming pools as well as the requirements for social distancing with family members, friends, colleagues and neighbours. All these changes increase anxiety among the population in everyday life, but especially in learning and working environments. However, looking at the learning challenges during the pandemic situation, it could be outlined both sides of the coin – positive and negative (Haleem, Javaid, Vaishya, 2020).

The positive side of this situation is that people spend more time with their families, pay more attention to their wellbeing, emotional, mental and physical health. They started to take up new hobbies – yoga, meditation, self-learning and self-observation exercises.

Unfortunately, there's a negative side of this pandemic situation which greatly affects people's mental, psychological and physical health. People do not have face-to-face communication and relationship they do not socialize with their colleagues, groupmates and friends. Therefore, due to less face-to-face communication, social media, such as video calling, chat, movies, music and new apps, are gaining its popularity at a fast speed, making people spend nearly all day switching on various technical devices. This digitalized lifestyle adds to the increased addiction to mobile phones and the Internet, followed by anxiety, restlessness, insomnia, bad temper, confusion and even depression. Educators must urgently look at some learning challenges such as lack of motivation, self-discipline, creativity and productive problem-solving skills as well as not having internet connections that appear most pertinent to the current crisis. Moreover, the study results are only partially applicable to the learning situations arising during this pandemic, but we believe it can help guide how to improve learning and how to uplift learners' recovery into their normal mode of operation in the future. V. Dislere and N. Vronska pay attention to the activities of career consultants both in schools and universities. Career counsellors help students to develop their personality and solve problems, as well as to make informed decisions (Dislere, Vronska, 2020). The authors acknowledge that in the conditions of a pandemic, it would be useful to attract career counsellors to help students cope with the non-standard situation, not to lose focus and not to get depressed. Dealing with the problems caused by the pandemic it must be borne in mind that the world is changing and that these processes are not explicit in our daily lives, studies and work. For this reason, we are working and learning in the uncertainty environment, it is necessary to pay more attention to personal creativity for promoting problem solving.

Creative learning outcomes can be supported through a self-directed learning process, where teachers can support learners in this process in three different ways – experiential learning, workplace simulations and problem-solving in case studies (Morris, 2020). Creativity is the attitude, the tendency to generate or recognize ideas, possibilities that could be useful in productive problem solving. It helps to think about a problem in the new way; using the imagination to create new ideas. Five main components of creativity could be developed – creative thinking, knowledge, technical skills, intellectual power, and intrinsic and extrinsic motivation (Germer, Siegel, Fulton, 2013). By deliberately applying the findings of the above-mentioned scientists, the difficulties caused by a pandemic would be easier to overcome.

Furthermore, for productive problem solving some other skills are needed, such as: creativity, emotional intelligence, research, risk management and decision-making skills. In times when a decision could be made quickly, it depends on themselves to think outside the box to find the best result of problem solving. Creativity is deeply connected with intuition, so sometimes the problem could be solved in a short way, when one's had enough knowledge about values (Racene, Dislere, 2019; Ivanova, Ignatjeva, 2018). However, in the case of pandemic people did not have enough information and experience before, so usage of more systematic and logical point of view and potential of creativity are needed. Problem solving in the pandemic situation deeply depends on individual psychological capital – positive psychological state. According to some researchers (Youssef-Morgan, Luthans, 2013) psychological capital consists of hope, self-efficacy, resilience and optimism. The nature of creativity from the point of view of thinking stems from the specifics of the mechanisms of reflection – in thinking as a process of self-research, attention is focused on the meaningful activity of consciousness; creativity depends on how the world is perceived, on the knowledge of ideal images in any field which are formed through reflection (Borovinskaya, Surovtsev, 2019). Thereby, students can do a lot for themselves to cope with the pandemic situation, use intuition, self-study and stabilize their mental states with conscious positive thinking and self-directed learning, all of which lead to self-efficacy.

Self-regulation skills regarding the usage of an online learning environment have been considered as fundamental skills for effective decision making (Çevik et al., 2020).

There could be used useful technics for creative problem solving, such as: mind mapping, brainstorming and PERMA (Positive, Engagement, Relationships, Meaning, Achievement) model. It would be very useful for students to apply the PERMA model developed by M.E.P. Seligman (2011), which stands for the five parameters that should be used as a vision for experienced lasting wellbeing. These parameters are: *positive emotion; engagement; positive relationships; meaning; achievement.* During pandemic it is important for students and all surrounding people to develop and share positive emotions and feelings. Positive Emotions (P) such as: pleasure, inspiration, love, satisfaction, hope, gratitude, peace and curiosity are important for the self-enjoyment of the activities what person are involved here and now. Involvement (E) could be

described as a person experiencing a state of flow: time seems to stop, there is a feeling of loss of self-esteem and an intense focus on the present. The more a person experiences this type of engagement, the more likely they are to be satisfied with well-being, even in critical situations. Positive Relationships (R) are crucial for humans as "social beings". Polite and emphatic relationships are core elements to person's achievement and prosperity. Meaning (M) that is true that we all need meaningful fulfilment in our lives to have a sense of satisfaction what we are doing in critical situations. Meaning (M) comes from serving a cause bigger than ourselves. Achievement (A) is a valuable attribute when we are seeking to master a skill, achieve a valuable goal and win life's victory. It could be stated that the PERMA model could be a good instrument for all learners and teachers to develop their skills of creativity and problem solving.

The aim of the research is to find out and discuss students' learning difficulties and experiences during a pandemic, and to find out how creativity can contribute to problem-solving.

Methodology

To analyse student' learning experiences, a quantitative study (questionnaire) was designed by the authors and 95 students took part in the research and answered the questionnaire expressing their opinions about arising difficulties and experiences.

In this article, two research questions were put forward:
- what were the students' learning difficulties and experiences during the pandemic;
- how creativity can contribute to problem-solving.

The results were processed by using MS Excel and descriptive analysis.

Quantitative research method enables to collect information about students' learning issues during pandemic quarantine and helps to discover original facts which are useful for interpretation and discussion. In the scientific field (DeFranzo, 2011; McLeod, 2019; Muijs, 2010) there are mentioned some methods about quantitative information gathering: various forms of survey (internet, paper, mobile studies, conversations and examination through phone); systematic observations (DeFranzo, 2011); experimental methods (McLeod, 2019). S.E. DeFranzo (2011) emphasizes that the quantitative method of data collection is more structured than qualitative method because quantitative method is related with numbers, logic and objective attitude. This method is applied to construe a phenomenon to understand problems and reveal causes at the same time used for scientific discussion. The quantitative method (questionnaire) of the study was applied to determine respondents' experiences during the pandemic situation. The questionnaire was organized in a particular environment (university) with the aim to investigate students' experiences, arising problems during pandemic situations and to analyse their main challenges for problem solving. Investigating students' experiences during the pandemic situation the questionnaire of ten questions was designed. The respondents were asked questions about their experience and learning problems during the first pandemic situation in Lithuania. There were closed and open questions and some statements. Questionnaires were anonymous, the answers were marked by minus or plus, or underlined. The questions in the questionnaire were constructed to collect information about students' experiences and attitudes during the pandemic situation.

Respondents. Quantitative research was performed in May 2020. There were 95 students who answered the questionnaire which was designed by the authors in English. The respondents were from Lithuania, Spain, Russia, China, Egypt, Kazakhstan, Belorus, Nigeria and Ghana. The majority of the respondents were from various faculties in Bachelor and Master levels of education and studied English in different levels: A1, A2, B1, B2, C1, C2, because it is obligatory to achieve C1 and C2 levels of English at Vytautas Magnus university in Kaunas, Lithuania. Students' knowledge in English played a significant role, because they were from different countries and various systems of education. The distribution of the respondents according the level of education and achieved level of English is demonstrated in Figure 1. Students who took part in the research were mostly of the Bachelor education level (96.5 %) and some of the Master level of education (3.5 %). The majority of students who achieved B2 level were Bachelor level students of education - B2 (53.7 %), A1 – A2 (32 %); less - B1 (10,8 %). Master level students achieved - C1 (3.0 %), C2 (0.5 %) English level (Figure 1).
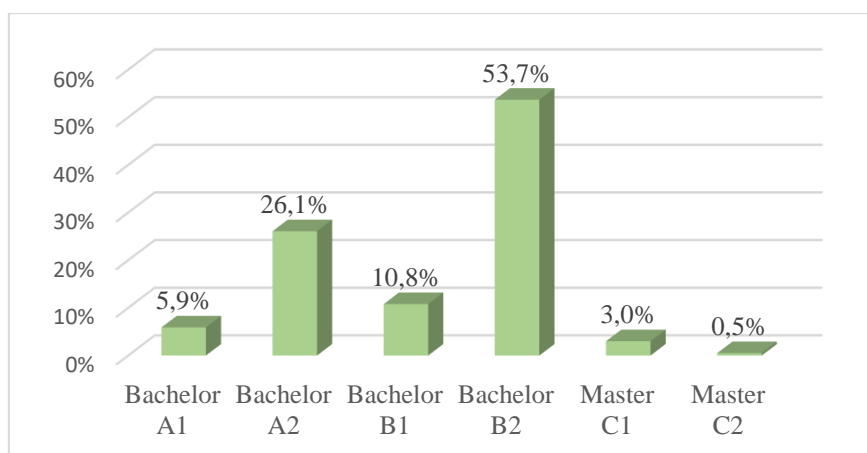
Figure 1. Distribution of respondents according level of education and achieved
A1 – C2 level of English.

At the same time in an English class there were students from Bachelor and Master programmes. As the respondents were asked to answer the questions in English, it can be stated that they were able to understand and give adequate answers. For foreign students who studied at Vytautas Magnus University during the pandemic, English language skills were important to be able to follow the study process in a remote version. It was an additional challenge to continue their studies without meeting the lecturers in person.

Results and Discussions

The study revealed that 67.6 % of respondents had difficulties *in* distance learning and 27.6 % of respondents did not have any distance learning difficulties during quarantine in Lithuania. The study results showed that respondents had distance learning and personal problems arising during the lockdown which they have to cope with and solve (Figure 2).
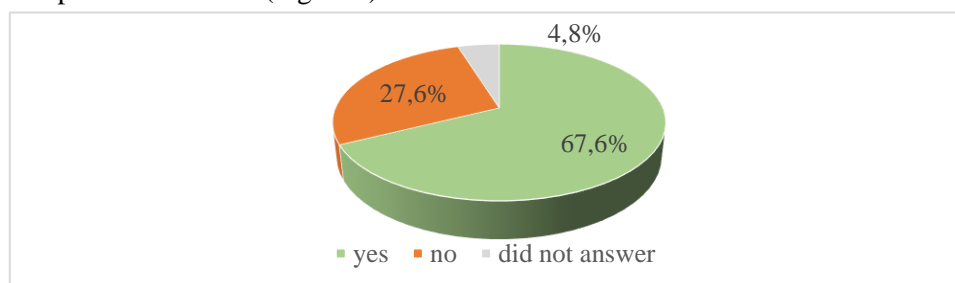
Figure 2. Students' opinions on whether they had difficulties in distance
learning during quarantine in Lithuania.

The study demonstrated that the respondents not only have had some learning problems, but also, they have faced psychological, emotional and social problems as well. The respondents marked that they did not have enough knowledge, skills and competence how to deal with those problems. The respondents indicated the most worrying problems "*Increased nervousness and anger attacks*" *(*11.4 %), "*Increased anxiety and fear"* (28.6 %); *"Unwillingness to act "(*1.4 %), on the other hand quite a lot of respondents did not have any problems (42.9 %) (Table 1).

Table 1

The distribution of students' opinions about psychological problems during quarantine (%)

No	Mentioned psychological problems	%
1	Increase nervousness, anger attacks	17.1
2	Increased anxiety, fear	28.6
3	Unwillingness to act	11.4
4	No problems	42.9

The respondents expressed their optimistic attitude, too. The students indicated the *positive features* of pandemic situation. The most common answers were:

- "*people have more free time to take up new hobbies*";
- "*people have more free time for learning new things and gaining new skills*";
- "*when pandemic situation is over people will have better skills to study online which is money saving*".

The respondents' positive attitude to the pandemic situation shows that they are trying to use creativity "*for learning new things and new skills*". During the pandemic situation, problem solving and creativity skills development is an urgent activity, so the students were asked to express their opinions about creativity for problem solving, which is essential during pandemic situation. The analysis of percentage distribution of students' answers demonstrated that the majority of respondents (45.9 %) have some trouble demonstrating new ideas in a creative way (Table 2).

Table 2

The distribution of students' opinions about creativity (%)

No	Statements	Totally disagree	Disagree	Neither agree nor disagree	Agree	Totally agree
1	Teachers value learners' creativity	0.0	0.5	20.0	55.0	15.5
2	Creativity is a value	0.0	1.0	20.4	63.5	15.1
3	There are good conditions for the development of creativity in learning environment	1.5	1.2	32.1	58.1	7.1
4	Students have problems demon-strating new ideas in a creative way	19.9	10.6	20.1	45.9	3.5

Therefore, it could be stated that education institutions should offer more favourable learning environment to develop creativity skills as most respondents agree that creativity competence is greatly valued as well as that there are opportunities and conditions at university for students of different programs to be more creative. Consequently, it might be assumed that the development of creativity is as one of the most valuable instruments for problem solving (Germer, Siegel, Fulton, 2013).

However, some respondents did not express their opinions, so it was not clear if they agree or disagree about the importance of creativity. For example, the statement that there are good conditions to be creative nearly one-third of the respondents (32.1 %) did not indicate their options. This tendency could be interpreted as learners are still unfamiliar with creativity skills importance and therefore pay little attention to the development of creativity skills during their studies at university. Moreover, the concept of creativity must have been misinterpreted and could have been understood as artistic activities, but not as diverse, non-standard, inclined to innovation way of thinking.

The study results reveal that during the pandemic situation students identify both positive and negative sides of the processes trying to find a certain balance and harmony. Facing uncertainty and disbalance in the lockdown, they are looking for positive ways how to solve their learning problems. Most of the respondents struggled to seek for their inner potential. They characterised this pandemic situation as a period of better self-understanding, the quest for meaning, as well as the search of self in a real environment. They stressed the importance of the learning process itself and the understanding of oneself in the context of lockdown.

Conclusions

The study results revealed that respondents had distant learning problems arising during the lockdown which they have to cope with and solve. The study about students' experience during Covid 19 pandemic in Lithuania demonstrated that their experiences during these periods were changes of the learning process; psychological problems; lack of knowledge and skills for creative problem solving. It is essential for learners to perceive the scale of problems so they could be able to choose creativity instruments for their problem solving.

The study results revealed that during the pandemic situation students identified positive sides of the distant learning processes trying to find their potential for creativity. While encountering anxiety, stress, uncertainty and disbalance, they are looking for optimistic and creative ways how to solve their problems.

The findings demonstrated that learners have to solve arising problems instantly, and they need to develop problem solving skills. For this reason, it is important to mention that learners must have more theoretical and practical information about problem solving in critical situations.

The study demonstrated that the respondents had learning problems and the changes during quarantine have troubled them. Moreover, the study results revealed that the respondents have faced other problems too, such as psychological – nervousness, anger attacks; emotional – sadness, anxiety and social – unwillingness to socialize and act which most worried them. What is more, the respondents marked that they did not have enough knowledge, skills and competence how to deal with those problems.

During the pandemic situation and in any crisis, the development of problem solving and creativity skills is an urgent activity. Therefore, the respondents were asked to express their opinions about creativity for problem solving. The analysis of the percentage distribution of students' answers demonstrated that the majority of respondents (45,9 %) have some problems demonstrating new ideas in a creative way, therefore, the authors recommend more use of self-expression, which includes creative fluency, flexibility and self-discipline, to develop productive problem-solving skills searching for original problem-solving ways. The results of the study showed that the respondents also marked a positive side of quarantine as they had more free time for learning new things, gaining new skills and taking up new hobbies.

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Main Directions of Pedagogical Research into Video Resources and Technologies for Foreign Language Learning

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Abstract: The purpose of the paper is to study the use of video resources and video application technologies in teaching foreign languages to technical university students. Regional studies and cross-cultural communication of native speakers in video, as well as the socially significant pedagogical content of educational video materials, are most popular among teachers, whereas professionally oriented video is underestimated. The following directions of pedagogical research into the methodology of using video in foreign language studies were revealed and analysed: (1) comparison of the results of learning lexical material in groups of students listening to the same content in the "audio only" and "audio + video" modes with a clear advantage of the second group; (2) the analysis of video modes without subtitles and with bimodal captions revealing a significant advantage of the second mode; (3) review of four examples of existing technologies for classroom mode contrasting them with the proposed flipped classroom technology of independent student work with video resources using VideoAnt and MindMeister programs. In conclusion, an assumption is made about the advantage of using video materials in students' independent work. Keeping in mind technical university objectives, the most promising video research direction is technology development for enhancing the efficiency of professionally-oriented documentary video.

Keywords: technical university, video resources, video technologies, foreign language.

Introduction

Professionally-oriented foreign languages teaching in technical universities is becoming more and more focused on the use of various electronic resources. The use of authentic Internet resources for the purposes of professionally oriented foreign language teaching is of particular importance as it increases students' motivation, enhances their cognitive activity in their domain of study, and contributes to the growth of their interest in English as a foreign language (EFL). For teaching students such a complex receptive type of speech activity as listening comprehension, a university teacher can use multiple authentic video materials available on the Internet. The Internet is believed to have become a supporting medium for communication (Aladyshkin et al., 2020; Almazova et al., 2020a; 2020b; Almazova, Andreeva, Khalyapina, 2018; Odinokaya et al., 2020; Odinokaya et al., 2019). If the university has pedagogically acceptable facilities for the use of video in teaching foreign languages, video materials from the Internet can be effectively used in the classroom and beyond. In any case, the main problems that need to be solved by a foreign language teacher at a technical university are the criteria for the choice of video resources, as well as the development of a systematic methodological approach to their use in the educational process. The methodology of video resources used in a university setting can be properly selected by considering numerous research publications on this subject. The analysis and evaluation of the pedagogical studies conducted by other researchers in this area will allow us to make informed decisions about how to proceed and what steps to take in this direction.

Therefore, this review is aimed at analysing current trends in the choice of video in the educational process, considering both benefits and limitations, and identifying the main directions of pedagogical research into the features of video use in EFL teaching. The main objectives of the research are the comparison of the results of learning lexical material in the "audio only" and "audio + video" modes; the analysis of video modes without subtitles and with bimodal captions; review of four examples of existing technologies for classroom mode. The proposed flipped classroom pedagogical technology of video material actualization in the mode of independent student work will be substantiated. The relevance of this topic is due, above all, to the need for widespread use of video in the educational process owing to its obvious advantages with respect to conventional listening comprehension practices.

Methodology

Generally, the review is based on numerous informative sources, which were selected drawing on such eligibility criteria as relevant research content, accessibility in terms of linguistic presentation and recent years of publication. The most important inclusion criteria were the descriptive analytical value and completeness of the results/finding's presentation. The publications chosen for our review provide detailed accounts of the pedagogical experiment outcomes, with the result validity proved in mathematical terms. The numbers of papers screened for the comparative analysis of each of the three forthcoming specific directions of video resource research were considered to be sufficient when the tendency under consideration was evident. To be more exact, the main selection criterion for part 1 reflecting general aspects of video use in EFL teaching, was profound authors' reflexion on the use of video resources for learning English in general, with the content preferences, advantages and limitations discussed. The period (1981-2009) embraced by us in this general part is wider than that for the more specific interest aspects covered in parts 2 and 3. A wider period of research is necessary to have a broader background of our subject representation in the critical literature. The main inclusion criteria for parts 2 and 3 were the following: use of video resources for teaching listening comprehension to university students and/or high school students, for the research period of approximately 30 recent years (1989-2019); availability of experimental data analysis, with the number of learners involved and comparison of control vs experimental groups performance. Exclusion criteria were the following: inappropriate age group; the content is too general, no experimental data analysed.

Application of these criteria yielded 60 articles that were acceptable for inclusion in the meta-analysis, with the key words for screening being video resources, EFL teaching. The present review combines the results of numerous pedagogical studies devoted to video resource use in EFL teaching. The experimental data from representative sources were carefully collected and analysed by us to draw objective conclusions on the basis of the data under consideration. Half of the literary sources studied by us refer to the recent five-year period 2014-2019. For electronic searches, the main databases were the Scopus and Web of Science. On the basis of an analytical review of foreign and Russian publications on the topic in combination with contextual and interpretative discursive analysis, the current state and development trends in video materials use in foreign language teaching are revealed. The most developed problems and open discussion questions of the first decades of the 21st century is studied. Examples of existing pedagogical video technologies are compared and contrasted, with a thorough analysis of the proposed flipped classroom video technology being provided as the most recent technology development in line with the research review findings. The theoretical context of the analysis is set here by recent studies and discussions and, partly, by earlier publications.

Results and Discussion

1. Main Tendencies in the Use of Video Materials in EFL Classrooms in Terms of Video Content and Existing Limitations

The use of video in teaching EFL is extensively investigated as an additional learning resource. The novelty in the use of video is due rather to the broad current possibilities of using authentic video resources (Bajrami, Ismaili, 2016) in the educational process. Immense video resources uploaded on the YouTube server can be used on a regular basis in EFL classes at a university, and, given the widespread use of mobile devices, can effectively complement students' independent work.

Research on the use of video materials in teaching a foreign language emphasizes their benefits for such disciplines as regional studies and cross-cultural communication (Barmenkova, 2011; Chilingaryan, Zvereva, 2017). Indisputably, authentic video resources vividly demonstrate the process of communication between native and non-native speakers providing sufficient input for the comparison of cultural realities and peculiarities of people's behaviour in various situations of intercultural communication. Thus, students are introduced to the natural language environment and communicative situations (Anderson, Baxter, Cissna, 2004); they get an idea of the way of life, traditions, and linguistic realities of the target language countries. In general, the cultural content of such video resources can be utilized to develop students' cultural and cross-cultural competencies (Sun, Wang, Cao, 2020; Cakir, 2006).

Research gives special attention to the obvious educational dimension of some video resources. Typical examples of such video content in the EFL teaching are fragments of films of various genres, screen versions of literary works, advertising and interviews. Students have the opportunity to consider the problems of war and peace, gender and race and discuss the problems of youth, the categories of good and evil, friendship and love, justice, and responsibility. Such content contributes not only to the cognitive but also to the social and emotional development of students while learning EFL (Pisarenko, 2017): they learn to critically evaluate video content and to express their opinions. The focus on building students' social cultural competence becomes an obvious pedagogical task when such video content is used in EFL classes at any educational institution.

The idea of social norms in the target language country can be acquired most effectively through video resources: the observation and discussion of authentic video material does seem to be a valuable preparation for countless situations going from pubs and cricket matches to family reunions and business meetings, in which a learner may one day find himself (Riley, 1981). In the works D. Willis and J. Willis (Willis, 1983a; Willis, 1983b) analysed the significance of verbal and non-verbal components in language teaching and tried to systematize the use of video resources in an EFL classroom. Both articles consider the video useful for students to become confident and familiar with psychosocial aspects of a foreign language environment. Using video, the authors are aimed at moving the student from the observer/learner role towards the native-speaker/participant role. Pre-teaching and follow-up activities are illustrated with numerous examples of video-related tasks. Their papers can be perceived as giving proper background for contemporary researchers.

The use of video for the purposes of general English development increases students' motivation and opportunity to practice speaking. Due to the variety of video content and the emotional impact of its input, students get a chance to develop a personal attitude to what they see in those videos (Chilingaryan, Zvereva, 2017). The educational significance of such content is obvious: students broaden their mind, they develop a positive attitude towards native speakers; by understanding the foreign culture, they raise their awareness of the cultural differences and become more conscious citizens of their country who are able to think critically. A similar trend can be seen in the papers of foreign researchers: video resources contain mainly real-life situations that demonstrate elements of the target foreign language culture, which increases motivation and vocabulary, as well as helps to improve students' pronunciation skills (EFL learners' views). The educational series in English "Family Album, USA" which is a good example of a training video, talks about the life of the American family of Stuarts (Family Album USA…, 2020). Each of the 46 episodes is a new story of 20 minutes each. The series consists of three episodes and three digressions – grammatical explanations or explanations of cultural traditions. The course is designed for people who are at the primary and secondary levels of study. In each part of the lesson there is video and text dialogs. Examples of general purpose video include English dialogs American and English films and TV shows.

Researchers rightly believe (Zhubanova, Tukhtabayeva, 2017) that academic listening of a video series is beneficial due to the principle of authenticity, but due to the integrated communicative skills development (listening, speaking, reading, writing), and a natural connection between language and culture. An effective integration of video into classroom work ensures more active communicative training before and after watching the video. For students who study English as a foreign language, video more than audio demonstrates communicative language in a language environment and in the wide cultural context. Video provides a flexible learning setting for English learners. It can be played with the sound turned on, so that students can hear the language they speak, or, alternatively, with the sound turned off, so that students can practice their language skills by participating in a dialogue or narration. Clearly, this requires a careful selection of the video material by the teacher in terms of topic and duration as long videos on topics of no interest to the students can be demotivating and cause problems with students' attention.

Though researchers (Kuzmina, Popova, 2019; Krašna, Gartner, 2005) use video mode to teach listening comprehension, there are few emphasizing speaking skills. Interestingly enough, some researchers examine whether digital video recordings enhance learners' oral fluency skills and investigate the learners' perceptions of the use of digital video recordings in a speaking class (Santamaria, Carlos, Encalada, 2018; Rakhmanina, Kusumaningrum, 2017). For example, the results of the experiment conducted in a group of ten Turkish students, with the speaking module of the exam *International English Language Testing System* (IELTS) used for checking the outcome of the experiment, suggest that the incorporation of digital

video recordings into speaking classes improved the learners' overall speaking proficiency; however, it did not lead to a significant improvement in learners' oral fluency (Göktürk, 2016). The other paper reports on a case study conducted at a Japanese national university, where nine students had to use the video recording feature on their cell phones to produce weekly video productions (Gromik, 2012). The task required that participants produce one 30-second video on a teacher-selected topic. Observations revealed the process of video creation with a cell phone. The weekly video performances indicated that students were able to increase the number of words they spoke in one monologue. The surveys indicated that participants believed that using the cell phone video recording feature was a useful activity. An unbelievable 46 % improvement in word production and a 37 % increase in words uttered per second were reported. Students rated the cell phone as a tool to assist them to improve their speaking ability.

Regretfully, we were unable to find studies on video resources of a documentary nature, in which the narration of the topic is conducted by a voice-over, although such video materials, in our opinion, are especially relevant for professionally-oriented EFL in a technical university (Kuzmina, Popova, 2019). The off-screen text, first of all, is distinguished by the role of the announcer in the plot structure. The voice of the announcer becomes a guiding force around which the visual line is built up, and which performs the functions of accompanying what is happening in the frame. If the voice in a frame describes relevant events and reveals the meaning of what is happening here and now, the voice-over may come either from an observer commenting on the events, or from a person evaluating them. For documentaries, the narrator uses significantly fewer means of expression than the actors in the frame, and such limitations are related to the specific genre of the narrative. The voice over is to maintain distance without directly showing the emotional attitude to what is happening.

As far as the professional needs of engineering students are concerned, we should point out the use of visual-only videos combined with case studies as proposed by L.M. Dos Santos (2019). Unlike traditional English language learning classrooms, which incorporate both general and broad directions and materials (i.e., general training materials), the teaching and learning materials for this pilot study employed tailor-made materials that matched the professional needs of engineering students. In total, 18 visual-only videos for twelve chapters and six case studies were used, with 79 students participating in the study. As a weekly requirement, each student had to watch and comment on the visual-only video on the social media learning platform. Furthermore, each student needed to comment on at least three other peers' feedback to encourage discussion. Even though this study (Dos Santos, 2019) does not belong to the main research directions to be further described, this idea of using visual-only videos should be definitely tried in the intermediate learners' groups as it stimulates discussion replacing listening comprehension practice.

2. *Main directions of educational research into general aspects of video application in foreign language teaching*

The use of video in foreign language teaching is extensively investigated, and the main areas of research are as follows: a comparison of the results of learning lexical material in two groups of students listening to the same content in two modes: "audio-only" or "audio + video"; a comparison of the results of learning lexical material in two groups of students listening to the same content in two modes: "video without subtitles" or "video with subtitles", and in the last category of video there may be "video with subtitles in a foreign language" (captions) or video with subtitles in the students' native language; the use of video listening comprehension technologies, both conventional and involving e-learning, with the use of various instructional techniques or methods of video viewing to enhance students' mastering the vocabulary.

Let us consider these areas to determine the research niche for our contribution to this video research. Our hypothesis for the first area of research is the assumption that in view of the fact that video resources provide visual support, video is methodologically more effective than audio. As for the second area, we assume that the subtitles provide additional visual support for the students. Therefore, instructional videos with subtitles ensure more efficient learning of the lexical input. The third area seems to us the most innovative; it creates additional research opportunities.

2.1. *Research into the audio-only listening mode compared with the audio + video mode*

As for the first area, all researchers believe that the audio-visual mode of presentation has a clear advantage over conventional listening. Audio-visual media are closer to real life, because visual cues lead to a proper contextualization of the video sequence, which contributes to the development of students' language

guessing and greatly facilitates understanding video content. As some researchers have shown, listening comprehension is an active cognitive process, including thinking and prediction, and not deciphering a single sound because an incomplete acoustic series often requires filling in the missing information (Astorga, 2015). Understanding is also influenced by visual input and cultural knowledge, for example, the interpretation of gestures, facial expressions and the movements of lips when speaking (Baltova, 1994).

Watching a video, students receive important information not only about vocabulary and grammar, but also about intonation, rhythm, and stress. The positive effect of visual cues was, for example, confirmed by an experiment involving 53 Canadian middle school students who studied the French language. Students who watched a 15-minute clip in audio-visual mode showed results in subsequent testing almost twice as good as students who worked in "sound only" mode. In another experiment conducted at the State Islamic University of Malang with the participation of 62 second-year students of humanities, similar results were obtained: students who audited the content in the audio-visual mode showed significantly better results (Alivi, Suharyono, 2016). This data is also in good agreement with Wuttipong's study on the use of video materials in teaching listening comprehension (Woottipong, 2014), in which it was shown that the video + audio group, 41 first-year university students altogether, was 20 % more efficient in mastering lexical material than the "sound only" listening group. Similar results were also obtained by C. Chen, L. Wang, L. Xu (2014), with the sample being 86 learners. The whole sample analysed in the audio-only listening mode compared with the audio + video mode equalled 242 learners, with 78 % university students and 22 % school students.

2.2. Research into the problem of using subtitles in video materials

This is currently one of the major methodological problems. Numerous studies in Russia and in other countries are devoted to it. The authors investigate the effectiveness of using bimodal subtitles in a foreign language, which reproduce foreign text video (captions), as well as translated subtitles in the students' native language (subtitles). Many studies demonstrated the positive effect of subtitles on listening comprehension (Markham, 1989; Neuman, Koskinen, 1992); Aldera, Mohsen, 2013); Hayati, Mohmedi, 2011). According to some authors M. Latifi, A. Mobalegh, E. Mohammadi (2011), the common problem of all these studies is that all of them neglected the influence of English captions and translated subtitles on improving students' actual listening skills. The direct effect of using subtitles in specific groups of students was investigated, and no attention was paid to the long-term effect of using them. There were general critical comments on the use of subtitles, the essence of which boiled down to the fact that their presence discourages students who fail to put enough effort to understand the discourse under discussion.

There is also a certain conviction that subtitles create learners' dependence because a habit of lightweight perception of a foreign language (FL) (Danan, 2004) is thus acquired. The author believes that FL learners have a negative attitude towards subtitles, especially when they first watch the instructional video, and many teachers, as a rule, are also negatively disposed towards their use. The main problem with the use of captions in a FL may be the fact that students get used to this support, and in the process of listening benefit to a lesser degree, and their auditing abilities hardly increase. The author disputes the effectiveness of subtitles in the long term and believes that the improvement of listening skills is nothing more than superficial.

Drawing on the analysis of the above papers, we can conclude about the ambiguity of opinions on the issue of using video with subtitles, and we mainly mean bimodal subtitles (FL captions). If we evaluate this issue objectively, then the benefits of FL captions are obvious for teaching the FL to students at the elementary and intermediate levels, and these benefits greatly exceed the possible negative aspects of their use. The researchers' negative opinions seem to be, more subjective since the objective trend of assessing students' mastery of new vocabulary based on video suggests the opposite. In the overwhelming majority of pedagogical studies, the results of vocabulary learning using video captions exceed the performance of groups that have audited the video without them. In the use of subtitles, there is a prevalence of bimodal subtitles, that is, English captions. The results of the research, whose authors tested the issue on fairly representative samples of students and support the use of subtitles, are presented in Table 1.

Table 1

The effect of pedagogical experiments on the effectiveness of bimodal subtitles in English (captions) in the instructional video

	Place of experiment	Number of participants	Results of groups studying in subtitle mode	Authors of the research, year
Item 1	Multimedia University, Cyberjaya, Malaysia	92	67 % higher than in no subtitle group	BavaHarji, Alavi, Letchumanan, 2014
Item 2	Alzahra Iranian Women University, Tehran, Iran	60	23 % higher than in no subtitle group	Ghasemboland, Nafissi, 2012
Item 3	Kocaeli University, Izmit, Turkey	120	8 % higher than in no subtitle group	Yuksel, Tanriverdi, 2009
Item 4	Burdur Mehmet Akif Ersoy University, Turkey	42	Slightly higher than in no subtitle group	Karakas, Sariçoban, 2012
Item 5	Golestan University, Iran	45	43 % higher than in no subtitle group	Rokni, Ataee, 2014
Item 6	Sadr Linguistic Center, Isfahan, Iran	36	Worse that in no subtitle group	Latifi, Mobalegh, Mohammadi, 2011
Item 7	Islamic Azad University	44	Higher than in no subtitle group	Etemadi, 2012
	Total	439	Higher indicators in the subtitle groups	

It follows from Table 1 (Kuzmina, Popova, 2019) that the research was carried out mainly in Eastern universities, in Malaysia, Iran, and Turkey from 2009 to 2014. The number of participants in all cases is sufficiently indicative to make meaningful conclusions. A total of 439 people participated in this sample, of which 197 people (45 %) were participants in experiments with the highest group results (sum of participants in positions 1, 2, and 5 of the above table) who watched videos with English subtitles. Note that 162 people (37 %: the sum of participants in positions 3 and 4 of Table 1) were participants in experiments that revealed a slight excess of the performance of video-audio groups without subtitles. 44 participants (10 %: position 7) are added to the previous numbers in favour of subtitle mode. Thus, our hypothesis that subtitles in FL (English) increase the efficiency of video listening comprehension is confirmed by 92 %. As for the remaining 8 % of the participants (position 6 in Table 1), they most likely belong to the experiment in which the control group initially had a higher level of foreign language competence.

The above researchers point out that the groups selected for the experiment had approximately the same level of foreign language skills. From the data we have cited, it becomes obvious that the experimental groups studied in the subtitle mode exceeded the no subtitle groups in mastering the new vocabulary and content of the video material. This result is, in our opinion, also quite expected since subtitles offer students more clues and support for the understanding of the video content.

Note also that the researchers unanimously prefer bimodal subtitles in English (captions) to subtitles in students' native language. In the study conducted by R. Metruk (30 students: Zilina University, Zilina, Slovakia, 2018), not two, but three groups were tested in modes (1) "no subtitles", (2) "English captions" and (3) "subtitles in the students' native language (subtitles). In all cases, group (2) had a sufficient advantage over the other two groups (Metruk, 2018).

3. Examples of research into pedagogical video technologies enhancing EFL learning

Having reviewed the above aspects of research into video listening comprehension teaching, let us consider the use of pedagogical technologies providing certain activities to enhance students' comprehension of video content. By pedagogical technology we mean a certain algorithm of using educational strategies to guarantee a desirable learning outcome. There are many definitions and concepts of technology in literature. Generally, education technology is a system of influence on the learner in the learning process (Arsaliev, 2015). It involves the management of the didactic process including the stages of organization and control of the activities. Technology is a theoretical pedagogical project of educational activity management. One of the key elements of education technology is students' feedback at the transitional state of the education process (Pisarenko, 2017). Audio-visual technologies may be classified into three

classes: those using films, video courses and all other video information (Pisarenko, Arsaliev, 2016), with their effectiveness being evaluated by means of two parameters: changes in the students' competence level and their satisfaction with training methods.

A brief description of five examples of pedagogical video technologies proposed by researchers will help us decide whether or not they are applicable for technical university students and substantiate the place of the proposed flipped classroom technology in the modern technological spectrum in a university setting.

Subtitle production technology. This technology (Zanón, 2006) involves the subtitle production of selected video clips by the students themselves with the help of subtitling programs. Three examples of supporting software were *Subtitle Workshop* (Subtitle workshop…, 2005), *Subtitul@m* (Subtitul@m…, 2003) and *Fab Subtitler* (FAB Subtitler…, 2003), with the Subtitle Workshop being preferable to its user-friendliness and suitability for the non-expert computer user. The pedagogic technology based on subtitle production was fairly flexible and was performed in three different ways: from English dialogs to English subtitles: bimodal subtitling; from English dialogs to subtitles in the learner's mother tongue: standard subtitling; from dialogs in the learner's mother tongue to English subtitles: reversed subtitles. The technology contained warm-up activities, the subtitling activity itself, and post-activities, containing language focus, role play, and feedback. Communicative functions covered by the clips were linked conceptually and grammatically to the contents being learnt in the course. The whole technology is realized in class, with the teacher circulating around to tackle arising problems. To implement this pedagogic technology, the teacher is supposed to provide students with relevant hints concerning the subtitling theory: for example, students should know that the time limits selected for each subtitle must be taken into account when focusing on the maximum number of characters fitting each caption.

Audiovisual technology (AT) involves shooting video by students. This high school technology (Pisarenko, 2017) draws on a number of audio-visual activities in foreign language training. The pedagogical algorithms of numerous video-based activities are developed drawing on the structure of the knowledge acquisition process according to the aims of illustrative, fact-finding, studying, critical and search viewing. The stages of previewing, presentation, after-viewing, and actualization are considered in the process of AT realization.

The most interesting feature of this technology is letting students shoot their own video, with the students being free to shoot their video exactly as they like, with a foreign language becoming the language of the creative process. The students work either individually, in pairs or teams: they show their two-minute videos to the class; they see and hear how their classmates react to what they have achieved. Students' explanations of their video conceptions in a foreign language stimulate their classmates' questions, and this discussion becomes an additional source of EFL communication which contributes to the students' communicative competence as the main goal of learning foreign languages in a high school or university.

Silent and freeze-frame viewing technology. One of the classroom technologies described recently concerned the use of two techniques of silent and freeze-frame viewing (Shahani, Tahriri, Divsar, 2014; Shahani, Tahriri, 2015). Taking the advantages of video for granted, this paper examines learners` views towards this original use of video material. About 80 % of the 45 high school Iranian female EFL learners at grade three and grade four announced their agreement with an effective role of watching video using different techniques, other than normal viewing in language classroom, on their listening competence outside the classroom. All respondents (100 %) seem to prefer watching through silent viewing or freeze-frame technique which was followed by some special activities other than normal viewing without any activity.

Video blogging project technology. Video blogging (Santamaria, Carlos, Encalada, 2018; Rakhmanina, Kusumaningrum, 2017; Gao et al., 2010) is a form of blogging in which video is the medium of expression. A video blog, or vlog, is defined as a blog that uses video as its main source instead of verbal text, becoming a kind of online diary. Current video blogs are essentially text blogs with externally linked videos for each entry. Video blogging offers a richer Web experience than typical text blogging because it combines movies, sound, still images, and text, increasing the input – and potentially emotions – shared with the users. Most people who have video blogs cover various topics, such as hobbies, tips, comments, and brief speeches.

Students can be involved in video blogging as a project assignment. Such a project assignment is considered effective as it improves their personal communication skills in a foreign language. For example, teachers can give an instruction to create a short monolog for their introduction. Furthermore, students are asked to videotape their monolog, to edit it, and to upload it to the Internet in their own personal blog sites. As the result of the project, it was found that video blogging strategy was more effective than the expository strategy for teaching and learning speaking for students with higher motivation. However, it appeared that the expository strategy drawing on teachers' explanations was more effective than video blogging strategy for teaching and learning speaking for students with lower motivation.

Flipped classroom video technology (FCVT). This technology allows us to make videos much more accessible to students (Whitley-Grassi, Baizer, 2010; Mehring, 2016). The flipped classroom means that "what is traditionally done in a class is now done at home, and traditional customary homework is now done in a class" (Bergmann, Sams, 2012). In other words, the learning sequence is inverted for the general benefit of students' video listening comprehension development.

The first stage of the professionally-oriented FCVT (Kuzmina, 2019; Popova et al., 2019) includes two-time watching of the advertising video material about the American computer company CISCO (Hub, Switch…, 2020) in the *VideoAnt* program, when students of the Bonch University watch the video as part of their homework and simultaneously perform the teacher's tasks presented on the computer screen (VideoAnt service, 2019). These are video content questions, translation and gap filling exercises that are uploaded to the instructor to monitor and evaluate students on the MOODLE virtual platform. The VideoAnt system tasks are aimed at developing listening skills, paying attention to details.

The second stage of professionally-oriented content visualization involves creating a mind map in *MindMeister* program (Online Mind Mapping…, 2020) to represent the professional content on a diagram and prepare to render the video in English. The mental map indicates not only the elements of the video content that are important for rendering the video, but also keywords in a foreign language. Thus, in this task, writing is partially practiced as a type of speech activity. The third stage is aimed at rendering the content of the professionally-oriented video clip on the mental map in English and recording the learner's own video for the teacher's control. The video report is necessary to ensure that the students do not read the entire video script, but reflect it briefly using a mental map created by them, which prepares students for communication and playing lexical games during the class.

Completing our review of EFL teaching with the use of video resources for university / high school students, we should note that there are certain articles, comprehensive as they are, which are not quite relevant to our research as they do not meet the above criteria. M. Krašna and S. Gartner (2005), for example, consider a more specific use of video technology for the exchange of teaching practices, with a remote‑control camera used to record the trainee's lesson to minimize the disturbance effect. Another example of very specific technology use is given in the article of the Chinese authors (Jeng et al., 2008) involved in the use of an innovative system referred to as the Dynamic Video Retrieval System, which uses information retrieval techniques to examine video scripts for specific collocations. Another group of researchers (Kuo, Lai, Yu, 2009) investigated the multimedia environment in two groups of third-grade students in the elementary school in Taiwan. Even though the research is detailed and well-presented, the target audience does not meet our age criterion. Certain technologies, on the one hand, are described too generally, without specifying definite details of video application (Jin, Qian, 2017) for teaching, which makes them inappropriate for further analysis. The others, on the other hand, like networked video courseware systems, turn out to be too technical for an average university professor of English to implement (Zhu et al., 2015). These five examples demonstrate the obvious variety of video resource applications at different levels of EFL-competence and for different target audiences.

Conclusions

Many researchers in Russia and abroad recognize the great educational potential of video resources, which, by creating visual support for students, are more effective in teaching listening to a foreign language than ordinary audio resources. The main trend of choosing video resources for secondary schools and universities is the use of general content video for general English courses. In high school and universities, video resources contain mainly real-life situations that demonstrate elements of a foreign language culture. These situations, when native speakers appear in the frame, clearly

demonstrate their authentic features, speech and etiquette features, which increase the motivation and vocabulary of students, as well as help to improve their pronunciation skills. Researchers note the educational value of cultural linguistic content: students become more erudite, they develop a positive attitude towards native speakers and an understanding of foreign culture, they become conscious citizens of their country who are able to think critically. As for the use of professionally-oriented documentary video in teaching a foreign language, when the speaker's voice sounds behind the scenes, this aspect is not described in the literature we have studied, although it requires our attention.

First, noted in the literature, the direction of pedagogical research, methods of video use is mainly focused on comparing the results of learning lexical material in two samples of students who listen to the same content in the "sound only" or "audio + video" modes. The results of the lexical tests after listening convincingly proved the advantage of the second listening mode using the video sequence.

The second direction of pedagogical research on the use of video, which is represented by a larger number of researchers, is devoted to identifying the role of subtitles. Comparing the results of learning lexical material in two groups of students who listen to the same content in two modes "video without subtitles" or "video with subtitles" proves the advantage of listening to video with subtitles. At the same time, a video with bimodal subtitles in a foreign language (captions) demonstrates an advantage over video with subtitles in the students' native language (subtitles).

The third direction is the development of pedagogical technologies aimed at enhancing foreign language learning. We have reviewed the subtitle production technology, audio-visual technology involving shooting video by students, silent and freeze-frame viewing technology and video blogging project technology. All these technologies have been positively evaluated by us as innovative and are worth trying out at foreign language university classes. The main limitation of these technologies is that they are mostly class work oriented and require more time for realization than is affordable in our foreign language syllabi.

The newly developed flipped classroom technology applied in Bonch Technical university of St. Petersburg (Russian Federation), lacking computer classes and the necessary number of classroom hours, seems to us a good way out when learning such a complex receptive type of speech activity as video listening comprehension. When conducting regular work on mastering vocabulary based on the VideoAnt program tested in the educational process, this technology for student independent work is likely to be recommended for widespread use in teaching foreign languages at a technical university or college, especially now, when distance learning has become dominant in pandemic conditions.

The example we have given of using a professionally-oriented documentary video, when the speaker's voice sounds behind the scenes, also represents a certain degree of novelty in the study of video listening comprehension in foreign language teaching. The shift in emphasis from the classroom to the independent work of students in mastering the video content that we offer corresponds to the real situation in Russian universities, in which the teaching and pedagogical conditions for mastering foreign languages in a class are not always optimal. Generally speaking, it can be finally concluded that in view of technical university objectives, the most promising video research direction is technology development for enhancing the efficiency of professionally-oriented documentary video presentation.

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Exploring Brand Personality in Higher Education

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Abstract: The increasing role of branding in the higher education sector is closely associated with the enhanced marketing orientation of a modern university. This, in turn, is determined by intensified competition between higher education institutions for students, staff, sponsors and research funding. A strong university's brand related to excellent academic reputation can become a means for gaining competitive advantage in the global education marketplace. Brand is regarded as a complex concept comprising different constituents, brand image being an essential branding facet. Brand image is linked to customers' perceptions of a brand that are echoed by a set of brand associations – usage situations, product attributes and brand personality. The aim of the paper is to explore brand personality in higher education based on the data collected in two tertiary education institutions – RTU (Riga Technical University) and TSI (Transport and Telecommunication Institute). The study makes use of the conceptual customer-based brand equity model (CBBE) created by K.L. Keller, which assumes that brand equity is closely related to strong positive and exclusive brand associations that can be expressed as brand benefits, attitudes and attributes, brand personality attributes being an essential aspect of brand equity. For exploring brand personality, the paper also applies the brand personality framework, including brand personality dimensions and associated attributes, developed by J.L. Aaker. The paper reports the results of a survey used to collect information about RTU and TSI students' perceptions of different brand personality attributes. The results of the empirical study demonstrate that every university is recommended to be tolerant, open-minded and respected. The base of it lies on the same ground – the respect towards the personality. Moreover, every university is also recommended to become a "modern brand", innovation, creativity and thinking "out of the box" being essential characteristics of the brand. The results of the study would contribute to overall understanding of brand personality in higher education, and how it may influence preference for a brand in educational settings.

Keywords: university education, brand equity, brand associations, brand personality attributes.

Introduction

Nowadays, the growing role of branding in the higher education area is widely acknowledged, which is closely associated with increased marketing orientation of universities that are trying to adapt to the extremely competitive national and international education markets (Hemsley-Brown, Oplatka, 2006; Maringe, 2006; Stensaker, D'Andrea, 2007; Wæraas, Solbakk, 2009; Wu, Naidoo, 2016; Hemsley-Brown et al., 2016). Modern students are supposed to possess the so-called "consumerist approach" to choosing a university, which is determined by the importance they attach to their career prospects (Maringe, 2006).

Currently, European higher education institutions are made to reorganize to perform as businesses in an extremely competitive environment (Mampaey, Huisman, 2016). The higher education sector is gradually marketized, branding is now accepted by many universities as a strategy to distinguish it from it rivals in the agenda of intensified competition for students, staff and funding. (Clark, Chapleo, Suomi, 2020). Branding in this area is becoming a "routine" (Stukalina, 2019); branding activities related to differentiation are now in the focus of senior educational managers' efforts (Chapleo, 2010). J. Mampaey and J. Huisman (2016) define branding in tertiary education as the enhancement of academia with organizational values and their presentation to the external environment; in this regard, branding is closely related to image management. Universities have to put more emphasis on building and promoting their brands for inducing encouraging associations with diverse stakeholder groups; students are viewed as their key "customers" (Roskosa, Stukalina, 2020) and the most interested "party" as to educational "products" (Roskosa, Stukalina, 2018). A powerful university's brand can reinforce the credibility of a higher education institution (Kotler, Keller, 2016) in the highly competitive business environment.

Brands can be considered from different perspectives (Kotler, Keller, 2012). Consumers' perceptions of a brand may be expressed by an assortment of brand associations (Keller, 1993; 2013), which are used for

differentiating and positioning a brand (Low, Lamb, 2000). Brand personality attributes represent one aspect of brand associations associated with the feelings induced by a particular brand (Keller, 1993).

The aim of the paper is to explore brand personality in higher education based on the data collected in two tertiary education institutions – Riga Technical University (RTU) and Transport and Telecommunication Institute (TSI).

Methodology

The methodology used in the paper includes the review of theoretical literature and prior research on brand management, and a survey performed in two institutions of higher education.

The study uses the conceptual customer-based brand equity model (CBBE) proposed by K.L. Keller (2001; 2007; 2008; 2009), which assumes that brand equity is closely related to strong positive and exclusive brand associations expressed as brand benefits, attitudes and attributes, brand personality attributes being an essential aspect of brand equity. For exploring brand personality, the paper also applies the brand personality framework, including brand personality dimensions and associated attributes developed by J.L. Aaker (1997), which appears to be relevant in the higher education settings.

An original questionnaire was developed for gathering empirical information about brand personality attributes. Brand personality was measured applying the five-dimension scale proposed by J.L. Aaker (1997) that was adapted to the purpose of the study and included such elements as (in the order mentioned) Sincerity, Excitement, Competence, Sophistication and Ruggedness. Every dimension was associated with three personality attributes. In general, the questionnaire contained fifteen items associated with the above dimensions: *Q1. My university is accessible for students; Q2. I can characterize my university to be honest; Q3. I believe my university is student-oriented; Q4. My university is inspiring; Q5. I evaluate my university to be up to date; Q6. I think my university is extraordinary; Q7. My university is open-minded; Q8. I can characterize my university to be tolerant; Q9. I consider my university to be respected; Q10. I evaluate my university to be upper-class; Q11. I think my university is attractive; Q12. I can characterize my university as innovative; Q13. I believe my university is reliable; Q14. My university is intelligent; Q15. I evaluate my university to be successful.*

The response format was a three-point Likert scale – "disagree", "neither agree nor disagree", and "agree". The survey was conducted in Riga Technical University and Transport and Telecommunication Institute in September – October 2020. The population of the research included 64 RTU students and 93 TSI students of the following directions: Information Technologies, Transport and Engineering, Management and Economics. The data were then processed by means of Excel tools.

Results and Discussion

Literature review: Brand management and associated concepts

In the modern business environment, brand management is an important marketing concern (Keller, 2009; Kotler, Keller, 2012; Kotler, Keller, 2016). The classic brand management model is now transformed into the brand leadership model having a strategic perspective, which puts more emphasis on brand equity in the agenda of building a strong brand (Aaker, 2012). Brand is regarded as a multifaceted concept; thus, there are different approaches to this construct, as well as different models describing brand constituents. A holistic understanding of a brand presumes that diverse brand-building elements should be considered, the obtained information being employed in for reviewing branding strategies (Roskosa, Stukalina, 2020). Brand components can take different forms (Kotler, Keller, 2012), brand image being an essential marketing concept to be considered. K.L. Keller (1993) describes the brand images as similar to perceptions about a certain brand "reproduced" by some brand associations in the user's memory and linked to the meaning of this brand; their strength and inimitability are central to shaping the "differential response" that composes brand equity. Brand image is an essential branding facet that is linked to consumers' perceptions of a brand that are reflected by a set of brand associations including usage situations, product attributes and brand personality (Keller, 1993; 2001; 2013). Brand management includes determining what brand associations to develop, which will be reflected in branding strategies (Aaker, Joachimsthaler, 2012). According to K.L. Keller (1993; 2013), brand associations encompass the meaning of the brand for its users (consumers). They are either produced from a consumer's experience – that is directly or through exchange of information

among consumers and brand advertising – that is indirectly. So, establishing a brand image presupposes generating a variety of brand associations – what this particular brand is symbolized in the minds of its users (Keller, 2001). As stated by J.L. Aaker (1997), brand associations embrace anything, which is connected with a particular brand in consumers' memory. Although there are lots of brand associations, they can be categorized as connected with a) brand performance – how the brand satisfies functional needs of its consumers; b) brand imagery – rather than an aesthetic aspect (Keller, 2001).

Brand associations are descriptive features (qualitative in nature) that take a variety of forms (Keller, 1993). Brand associations are determined by brand identity – that is what an organization wishes to induce in customers' memory (Aaker, 2011). Marketers employ brand associations for brand differentiating brands and brand positioning, which is related to generating positive attitudes and feelings toward a brand (Low, Lamb, 2000). A complete understanding of brand associations would also be beneficial for developing brand extension strategies that are intended for reassigning particular attributes from a present brand to a new-fangled product (Aaker, Keller, 1990); in higher education, for example, it is associated with introducing new educational programmes and courses. In the CBBE K.L. Keller (2001; 2008; 2009), it is assumed that brand associations are expressed as brand benefits, attitudes and attributes, brand personality attributes being a vital aspect of brand equity. Brand personality as an element of brand image (Plummer, 2000) is an assortment of human features related to the brand (Aaker, 1997). Brand personality attributes "echo" those feelings, which are induced by this brand (Keller, 1993).

J.L. Aaker's (1997) multi-dimensional brand personality construct was developed from a factor analysis of the survey data related to the most well-known brands. It includes five dimensions allied with brand personality that can be used generalized across different product categories and cultures, the five-factor solution being easily interpretable; this brand personality scale bears a resemblance to a human personality scale, which would make it easier to develop the "right" brand personality from the point of view of a consume (Aaker, 1997). It should be also noted that human personality was habitually mentioned as the theory, which can also be applicable to brand personality (Davies et al., 2018). Although some authors have criticized Aaker, indicating the scale's large dependence on cultural context, this framework seems to be rather flexible and easily manageable. That is why many researchers have already applied it through various products for measuring the brand personality in five central dimensions that embrace forty-two aspects (Tong, Su, Xu, 2018). However, in higher education this approach has not been widely used yet. In the paper, Aaker's brand personality dimensions are represented by a set of brand attributes that may be associated with a university, and which appear to be relevant in higher education settings (Table 1).

Table 1

Brand personality dimensions and related brand attributes (adapted from J.L. Aaker (1997))

No.	Brand personality dimension	Associated brand personality attributes
1	Sincerity	Accessible, Honest, Student-oriented
2	Excitement	Inspiring, Up-to-date, Extraordinary
3	Ruggedness	Open-minded, Tolerant, Respected
4	Sophistication	Upper-class, Attractive, Innovative
5	Competence	Reliable, Intelligent, Successful

J.L. Aaker's multi-dimensional construct offers theoretical insights into why consumers buy brands, as it is related to purchasing decisions (Aaker, 1997). Being a cross-category framework in nature, it could help higher education marketing managers to understand why students "have their heart set" on a particular university.

Analysis of the empirical study results

The empirical research results are presented in Table 2, Figure 1 and Figure 2.

The first brand dimension evaluated by the students was *sincerity*. The data show that both groups of students have assessed this dimension quite similarly. As seen from Table 2, 81 % of RTU students and 80 % of TSI students have agreed that their university is accessible, honest and student-oriented. Only 16 % of RTU students and 15 % of TSI students neither agree nor disagree with the statement. The number of students who have a negative evaluation is the same for both groups – only 4 %. Sincerity characterises

the moral and ethics qualities of the brand as well as the attitude of the university towards its students. The data of the research prove that most of the students belonging to both groups believe in their university to be honest towards them. The atmosphere in both universities could be also characterized as positive and inclusive – both universities are accessible and student-oriented.

Another brand personality dimension assessed by the students was *excitement*. The data show differences in students' opinions. RTU students have given more positive answers than TSI students – 67 % and 47 % agreeing that excitement is characteristic to their university. A bigger number of TSI students have also neither agreed nor disagreed than RTU students – 37 % and 28 %. There is also more disagreement expressed by TSI group in comparison with RTU group – 15 % and 5 %.

Figure 1. Brand personality as perceived by TSI students.

Excitement includes three main attributes of the brand – university has to be inspiring, up to date and extraordinary.

Table 2

Distribution of answers according to brand personality dimensions

Dimension	TSI			RTU		
	agree	neither agree nor disagree	disagree	agree	neither agree nor disagree	disagree
Sincerity (Q1-Q3)	80 %	15 %	4 %	81 %	16 %	4 %
Excitement (Q4-Q6)	47 %	37 %	15 %	67 %	28 %	5 %
Ruggedness (Q7-Q9)	74 %	20 %	5 %	83 %	13 %	4 %
Sophistication (Q10-Q12)	51 %	38 %	11 %	78 %	19 %	4 %
Competence (Q13-Q15)	74 %	21 %	5 %	88 %	11 %	1 %

The largest difference in the students' opinion was seen evaluating their university to be extraordinary. Only a little more than 20 % of TSI students have agreed with this statement, whereas the number of RTU students was much bigger – more than 55 %. RTU provides their students with various and specific study programmes. This fact may explain RTU students' view to characterize their university to be extraordinary. Moreover, the next brand personality attribute assessed by the students was inspiration. The students had to express their opinion if their university could be called as inspiring. The data still

show difference in the view of both groups. Around 50 % of TSI students have agreed on this attribute, whereas the number of RTU students having given a positive answer is more than 75 %. The reason why many RTU students believe in their university to be inspiring as well as extraordinary could be explained by the tendency of this university to develop its student's creativity and thinking "out of the box", in such way setting their minds free and helping them to become more innovative. This fact may also explain the cause why many RTU students have agreed – more than 75 % – to call their university to be up to date in comparison with TSI students – more than 60 %.

One more aspect of brand personality dimension analysed in this research was *ruggedness*. Most of students of both universities have assessed this aspect positively – RTU (83 %) and TSI (74 %). Ruggedness reveals several characteristics of the university – if it is open – minded, tolerant and respected. The data prove interesting findings of the research. There are quite similar characteristics of the university the students put emphasis on. Most of TSI students consider their university to be tolerant – 80 %, whereas the most of RTU students believe in their university to be respected – almost 85 %. Then around 75 % of TSI students call their university to be respected and more than 80 % of RTU students characterize their university to be tolerant. The third

Figure 2. Brand personality as perceived by RTU students.

attribute – my university is open–minded and has been more highly appreciated by RTU students – almost 80 %, whereas the students of TSI have evaluated it a little lower – around 70 %. Therefore, the data prove that the students of both groups put much emphasis on all three attributes of ruggedness – the university has to be tolerant, open– indeed and respected. It is hard to deny that these attributes are very connected because their base lies on the same ground – the respect towards personality. Thus, the key word is the "respect" which should be the main value taken into account by everybody teaching/learning/working at the university. The data prove that this value is present at both universities.

The next brand personality dimension having been analysed in the research is *sophistication*. The data show that the students of RTU assess this dimension more positively – 78 %, whereas TSI students are more critical – 51 %. This dimension includes three brand personality attributes – the university has to be upper-class, attractive and innovative. Most of RTU and TSI students have decided to characterize their university to be attractive – more than 80 % of RTU students and almost 60 % of TSI students. This attribute has been selected as the most popular. The second most popular attribute related to sophistication deals with innovation – 80 % of RTU students believe in their university to be innovative, whereas only around 50 % of TSI students agree with it. RTU students are also more positive and certain assessing their university to be
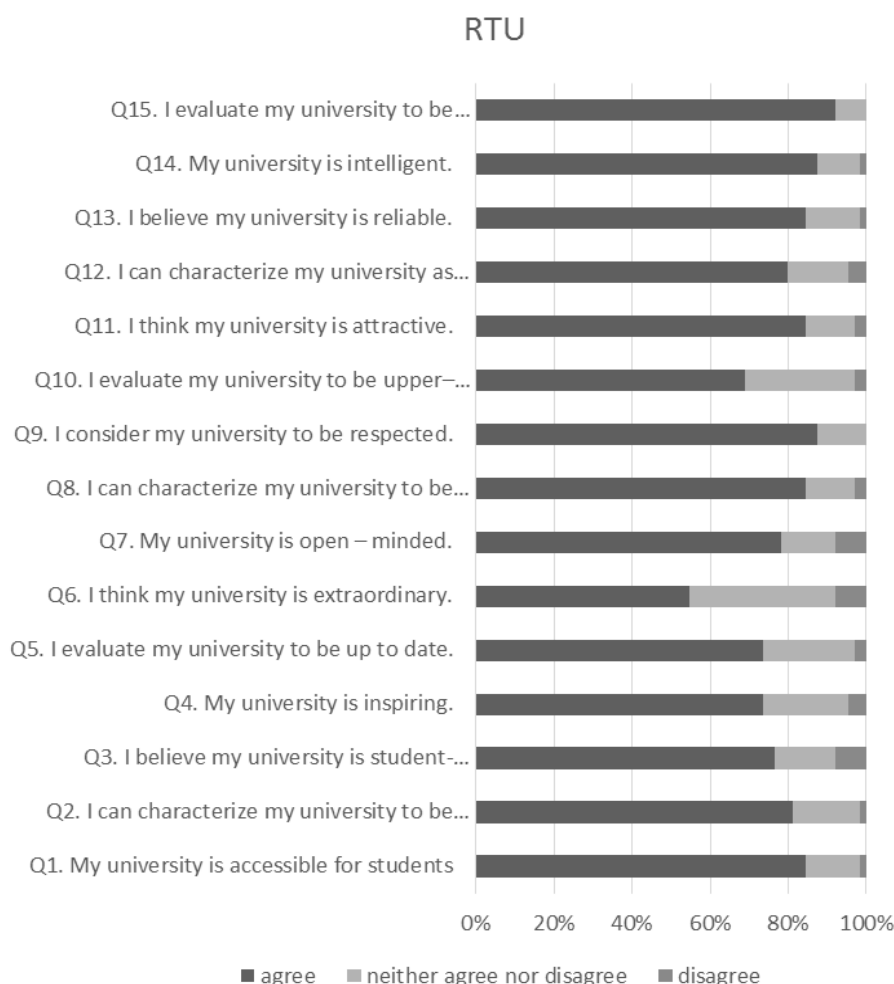
upper-class one – almost 70 %, whereas only a bit more than 40 % of TSI students are of the same opinion. This tendency could be explained with the fact that RTU is one of the biggest universities in Latvia. Therefore, there are more resources to keep its high status and ranking both in Latvia and overseas. However, every university is recommended to become a "modern brand" proving that the innovations lead to attraction and result in an up-todate and upper-class institution.

The last brand personality dimension having been researched is *competence*. There are three main attributes characterizing the competence of the university – it has to be reliable, intelligent and successful. Most of both group students agree with it – 88 % of RTU students and 74 % of TSI students. Nevertheless, there are more students in TSI group who neither agree nor disagree with these statements – 21 %, whereas only 11 % of RTU group do not have a strong opinion. RTU students are also much more certain to evaluate their university to be successful – around 95 % believe in it. However, there is also a high number - 75 % of TSI students who have the same opinion. Thus, both groups of students assessed their university positively showing patriotic feelings about it. When analysing other attributes related to the competence of the university – its reliability and intelligence, RTU group is more favourable – almost 90 % of RTU students call their university to be intelligent and more than 80 % of them evaluate RTU as a reliable institution. TSI students are also positive – around 75 % of them evaluate their university to be reliable and intelligent. Thus, both groups of students believe in the competence of their university being proud of its success.

Conclusions and recommendations

The following conclusions and recommendations are based on the research results.

- Brand personality is regarded to be one of the central brand management concepts. As everyone has possessed an exclusive identity, each university has its unique brand personality that helps in differentiating this university from others.

- Modern higher education institutions may employ different brand management tools for improving both internal and external branding, including J.L. Aaker's brand personality framework, as the role of brand personality for a university is widely acknowledged.

- In higher education settings, L.L. Aaker's brand personality dimensions epitomized by an assortment of brand attributes associated with a particular university would help higher education marketing managers to understand why students choose a particular university for studies.

- The results of the empirical study demonstrate that every university is recommended to be tolerant, open-minded and respected. The base of it lies on the same ground – the respect towards the personality.

- Furthermore, every university is also recommended to become a "modern brand", innovation, creativity and thinking "out of the box" being essential characteristics of the brand.

- In the main, students of both universities perceive their brands' personality positively, which might be indicative of the fact that the above universities have a well-developed marketing strategy aimed at building a strong university brand and focused on the current and prospective students.

- The results of the study are supposed to contribute to overall understanding of brand personality in higher education, and how it may influence preference for a brand in educational settings; this is important for developing an efficient marketing and student recruitment strategy.

- However, further research is recommended to generalize the findings; it would help refine the university brand personality scale and make it more universal.

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The Ideal Language Student – Myth or Reality

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Abstract: The image of the ideal student, existing in the era of new technologies, ubiquitous Twitter and Facebook, messengers and commercials, undoubtedly attracts the attention of researchers both at home and abroad. This is a cumulative image of cognitive abilities, business qualities, psycho-physiological peculiarities, appearance and interpersonal skills. This study aims to identify the main characteristics of the image of the ideal language student as perceived by the teachers of foreign languages from three leading universities: Lomonosov Moscow State University (MSU), Plekhanov Russian Economics University and The Presidential Academy of National Economy and Public Administration. The relevance of the study is determined by insufficient research of the problem and qualitative changes which have been occurring over the 21st century in education in general and tertiary education in particular. The article attempts to describe and analyse the results of an anonymous survey pertaining to the image of ideal language students as perceived by the practicing instructors of foreign languages. The total number of respondents was 79, including 42 instructors from Plekhanov University, 22 from the Presidential Academy and 15 from MSU. The analysis of the responses showed that the ideal student as perceived by the teachers is the one who possesses good critical thinking skills, is motivated and disciplined with a serious attitude to study. The obtained results do not allow drawing conclusions about specific features of the ideal student depending on the length of pedagogical experience. Each age group included all possible sets of characteristics. It is noteworthy that teachers from MSU valued both social qualities (team work, sociability) and personality traits (diligence, decency); the instructors from the Presidential Academy ranked first adequate reaction to critique and willingness to listen and hear; while their counterparts from Plekhanov University emphasized the importance of good presentation skills, speaking and communication competency alongside the interest in the subject. The statement "There are no ideal students" also came from among the practitioners of Plekhanov University.

Keywords: ideal image, student, cognitive abilities, personality traits, psycho-physiological peculiarities.

Introduction

The image of an ideal student does not frequently become an object of research or even of discussion among teachers. However, when we come to think of it, it raises quite a number of questions. When we enter a real classroom with real students, do we keep in mind a certain ideal image, which the students should (from the teacher's point of view) comply with? Do we subconsciously compare our students with our ideal that is hovering somewhere at the back of our mind? What is this ideal – a cumulative image of the best representatives of studentship that we have enjoyed working with throughout our career? Or do we have this image embedded from our own student life, when we were on the other side of the lectern and formed a certain image of a student whom almost all teachers liked? Does this image vary over our professional life alongside accumulating experience and re-evaluating stereotypes? If "nowadays education in a broad sense has been distinguished as the investment in the development of the society" and "higher education institution as a social institute should prepare a graduate for life", how do these aims correlate with educationalists' image of ideal students? (Nurmukhanova et al., 2014, 116). And the most important question – is there any practical value in the ethereal image of an ideal student?

Lately students have undergone a significant change following the transformation in the culture they exist in. As B. Johnson and T. McElroy point out the influence of culture is crucial for education. Movies, music, TV and other media have an enormous impact on education. As multiple research works demonstrate, mass media and pop culture are probably the most important ways of acquiring knowledge by modern children (Johnson, McElroy, 2010). Considering the technological breakthrough of the information age, when students have access to an unlimited amount of information at their fingertips,

and considering the requirements of the modern labour market in the globalised multicultural world, one cannot modify one's concept of who can be an ideal student.

It is evident that a seemingly innocuous concept of an ideal student turns into a multifaceted issue. As B. Wong and Y-L.T. Chiu (2019) remarks, the research literature on the concept of the ideal student is scarce and disparate. In 1952 the British author H. Becker wrote that the principal qualities of an ideal student, i.e., the motivation to work hard and diligently, can be acquired exclusively in the family environment, which is only characteristic of the middle class. Neither children nor adults from lower classes can learn to be ambitious, conscientious or industrious in work or study (Becker, 1952). In 1960 surveying teachers from an American university, D.R. Brown identified characteristics that were practically constant for the image of the ideal student: "cognitive intelligence, directed intellectual curiosity, general likeability and maturity". There were a number of other qualities pointed out by the teachers, such as independence, analytical ability, moral responsibility and promise for the future being among the most noteworthy (Brown, 1960). These characteristics look very up-to-date. Nevertheless, the idea of social status influencing teachers' perception of the ideal student still found its evidence in the work of N. Keddie from Britain, who in 1971 showed that teachers based their knowledge of students on the students' social position. According to her work, the ideal student is the one who is easy to teach, who resembles the teacher and accepts what the teacher says unquestioningly. This student does not cause problems in the class, works quietly and independently, doing whatever the teacher asks. Usually, he is a representative of the middle class. A less ideal or problem pupil questions what the teacher suggests, he wants to know the point of the tasks and activities, and, as a whole, is seen different from the teacher (Keddie, 1971).

A. Yourglich (1955) carried out research aimed at uncovering correlations between college teachers' and students' images of an ideal student. She discovered that there was much more agreement between these two groups concerning an ideal student than an ideal teacher, which she explained by the teachers teaching students "what the ideal student should be because of the teacher's dominant position". Both students and teachers emphasized such qualities as diligence, maturity, intelligence and cooperative, although in different order among the top 4.

Among recent Russian studies it is worth mentioning the work by E.A. Sokolova (2014), in which the method of "open tests" was used to ask the respondents (undergraduates of psychology and pedagogy departments) to describe how they perceive the ideal student. The survey demonstrated that the ideal student is: active (48.3 %), responsible (44.92 %), determined (35.59 %), diligent (26.27 %), responsive (26.27 %). The ideal student is a person of broad and multiple interests (27.11 %), but he is mainly interested in study and future occupations (25.42 %), and is academically successful (27.97 %).

According to The Oxford Languages and *Google* English Dictionary, "ideal" (adj) is defined as "Satisfying one's conception of what is perfect; most suitable. Existing only in the imagination; desirable or perfect but not likely to become a reality". Thus, the dictionary emphasizes the practical impossibility to attain the ideal as the ultimate goal as well as understands the ideal as being perfect (Oxford Languages…, 2020).

Nevertheless, B. Wong and Y-L.T. Chiu (2019) points out that if the ideal is not regarded as a perfection, which is impossible to achieve in the context of higher education, but is perceived rather as teachers' expectations connected with the students or as a desirable result, then the concept "the ideal student" acquires a practical sense. As the researchers indicate, it can potentially reduce the uncertainty that some students may have concerning teachers' expectations. Knowing which characteristics are ideal in the eyes of their professors, the students will be better informed and will have an opportunity to develop these qualities, which could smoothen the differences in the values and expectations of the students and teachers and make their relationship better and stronger. It follows that the concept of the ideal student is not just an ethereal image, but a practical and useful construct. It means, in its turn, that the teachers should quite clearly formulate the parameters of their ideal student for themselves and, preferably, be able to clearly communicate these ideas to their students, which would make their relationships more transparent and understandable for both sides. This practical meaning of the concept "the ideal student" can also help in motivating the students.

Putting forward his theory of an ideal type, M. Weber (1949) stated that an ideal type is not a description of reality, it is not even a hypothesis, but it "provides clear guidance to the construction of hypotheses". He further pointed out that "in its conceptual purity, this mental construct cannot be found empirically anywhere in reality. It is a Utopia".

As Encyclopaedia Britannica comments on this theory, this construct is derived from observable reality, but does not conform to it in detail because of its deliberate simplification and exaggeration. "It is not ideal in the sense that it is excellent, nor is it an average; it is rather a constructed ideal used to approximate reality by selecting and accentuating a certain element" (Ideal type, 2018). Although M. Weber developed the theory of an ideal type of application to social and historical studies, namely, some recurring phenomena, it can be assumed that the theory can be applied more broadly including the educational context.

Quite a number of research works have been written on primary and secondary school education, where respondents repeatedly emphasize the behavioural aspects of the ideal student. For example, A. Bradbury (2012) argues that "rational choice, self-promotion and individual responsibility for learning are valued" within the framework of educational policy for primary school, but the notion of what makes "a good learner" can be restrictive and may actually exclude some children from succeeding. In G. Thompson's study (Thompson, 2010) the respondents pointed out such qualities as obedience, discipline, and respect for figures of authority at school. Academic performance was seen as an expression of moral values of diligence and hard work. Interestingly, some students perceive themselves as "actors", playing the role according to the model that was assigned to them. The author again argues that such an approach restricts young people. The school is to teach the students to find new roles for themselves, not to bring up a disciplined population, as the latter does not address the challenges of the 21st century.

Having written numerous works on creativity and its correlation with teachers' concept of the ideal pupil, E.P. Torrance (1963) emphasized that these characteristics are practically incompatible with teaching creative thinking. The results of a survey of several hundred teachers across the USA demonstrated that the most valued trait was consideration for others, followed by independence of thought. Unfortunately, the top qualities did not include independence of judgment or courage, without which, according to E. Torrance creativity is impossible. For the American teachers, courtesy is more important than courage. Such characteristics as timely homework, energy and obedience, likability, the ability to listen to the ideas of others and accept the elders' judgment are also highly valued. E. Torrance concludes that these qualities would lead to producing students ripe for brainwashing, rather than creativity.

E. Torrance also remarked that the images of an ideal student vary depending on the national culture, although some are universal around the world. Thus, speaking of differences, he mentions that good memory is most valued in East Samoa, being considerate to others – in the USA, hard work – in Canada and Australia, determination – in Germany, while courtesy and obedience – in India and the Philippines.

S. Harkness and co-authors also put forward the findings of their research which demonstrated cultural differences in the concept of the ideal student among 5 European countries concluding that "teachers in all the samples talked more about the importance of social intelligence and self-regulation for success in school" (Harkness et al., 2007).

As for higher education, the characteristics of the ideal student may depend on the area of study. H. Thinyane (2013), for example, analysed the responses of the teachers concerning the IT students which demonstrated that such qualities as creativity, playfulness towards the computer, analytical and abstract thinking, problem-solving, introversion, autonomy, responsibility and engagement in class tended to be valued most. As far as future doctors are concerned, some other traits were of higher value, which was shown in the research by B. O'Brien and her co-authors in which the majority of the participants described the ideal student as proactive and independent, able to dwell upon the patient's problems, giving an impression of a knowledgeable and competent professional. (O'Brien et al., 2016)

The above-mentioned research of B. Wong and Y-L.T. Chiu (2019) was conducted by the method of focus groups to provoke discussion and interaction among the members. The research pinpointed several controversial conceptual moments in working out the image of the ideal student. For example, it was pointed out that the ideal image is often seen as equal or close to perfection. Besides, the participants commented on the subjective character of the ideal image, on its openness to multiple interpretations – ideal for whom? Ideal for what? It was difficult or even impossible to form a single ideal image even for one teacher. Moreover, it was problematic to assess objectively some of the traits, as one participant asked: "How can you assess curiosity?" In such a discussion some questions appear unavoidable, e.g., queries about the ideal teacher, the ideal university or the ideal society, which are known to be non-existent.

In another research paper published in 2020, B. Wong and Y-L.T. Chiu conducted 30 detailed interviews with lecturers and teachers in two English universities and discovered that there is a certain consensus among the respondents related to the quality of the ideal student. Many of the characteristics are academically related, for example, preparedness for a lesson or a lecture, prior acquaintance with the topic, engagement and active participation in the learning process and self-regulation. The student is ideal if he or she is willing to study and is ready for difficulties and challenges. At the same time academic performance per se is not a priority for instructors (Wong, Chiu, 2020).

S. Gurak-Ozdemir (Gurak-Ozdemir, 2016; Gurak-Ozdemir et al., 2019) conducted a study based on four thinking preferences (clarifying the problem, generating ideas, developing solutions, implementing ideas) and concluded that "the results reveal an implicit bias on the part of teachers to promote qualities that align most with their own creative-thinking preferences", which means that the teachers tend to "idealize" students who possess and demonstrate similar qualities and approaches to problem-solving.

It appears that teachers do possess an image of an ideal student. M.E. Downey and A.V. Kelly (1978) pointed out that the teacher having a prior concept of the ideal student may lead to several consequences: the teachers might want to "produce" ideal students in accordance with their model; the student who does not conform to the model is considered less ideal and the attitude to him might be less favourable; the teachers might see their success reflected in the ideal student and their failure – in the less ideal one.

In this connection an important question arises – does the teacher convey her concept to the students themselves? It can be assumed that the educational institution encourages certain models of behaviour by disapproving of or even punishing others, thus informing students of its image of the ideal which they should attempt to reach. However, what about the individual teacher? Should she try to make her concept known to the students, and if yes, how?

This study aimed to discover, study and analyse the content and peculiarities of the image of the ideal language student held by teachers of different universities in Moscow (Russia) as well as the comparative characteristics of these concepts.

Methodology

In accordance with the aims of study the following tasks were set:
- to identify the content and structure of the university teacher's concept of the ideal student;
- to analyse the peculiarities this image may have depending on the university (Academic Moscow State University, Economic Russian Plekhanov University and the University of Civil Service and Economics);
- to study and, if possible, compare the specifics of the image of the ideal student depending on the teachers' length of pedagogical experience.
- to find out if the teachers attempt to convey their image to their students.

The authors hypothesized that the image of the ideal language student will vary depending on the specifics of the educational institution and the length of pedagogical experience. Another supposition was that those teachers who frequently encounter ideal students help create them by informing their students from early on about their expectations.

Participants

Fifteen teachers of the College of African and Asian Studies (Lomonosov Moscow State University, further on CAAS), 41 teachers of Plekhanov Russian Economics University (further on REU) and 22 teachers from the Russian Presidential Academy of National Economy and Public Administration (further on RPANEPA) voluntarily took part in the survey. The sample was in the 27-75 age range (Mdn = 56), female – 89 %, male – 11 %., although gender was not taken into account. Nearly half of all respondents have been working as language instructors for 15-30 years.

Methods

The following methods were used: a questionnaire of 6 questions, namely 5 of a close-ended, multi-choice type and 1 open-ended question requiring a more comprehensive response. One of the multichoice questions was a list of 23 characteristics, which was condensed from 50 qualities in the original survey of

the University of Reading (Wong, 2020) to focus on the characteristics that were most relevant for this study – cognitive abilities, business qualities and behavioural aspects of the ideal language student. The questions were aimed at obtaining a complex characteristic of the image of the ideal language student which the university teacher holds and ranking these traits according to their importance. The open-ended question was included in the questionnaire to enable the respondents to independently analyse their image of the ideal student and contribute to the features of this image by adding traits that might not have been listed in the multichoice question. The questions were drawn up in Russian, which is a mother tongue for the respondents; their answers were subsequently compared and analysed.

Procedure

The questionnaire was designed in *Google Form* and sent via link which allowed the teachers to complete it anonymously at leisure.

Results and discussion

Seventy-eight completed questionnaires were received from practicing teachers of West European languages (English, French, and German) from three leading Moscow universities.

The first question concerned the length of teaching experience. In two universities the most populous group was made up of instructors with the teaching experience between 15 and 30 years (all in all 48.1 %, with 41.5 % in REU, 72.7 % in RPANEPA). As for the CAAS, because of the younger teachers' (5-15 years of teaching) greater activity while completing the questionnaire, their representation was the same as that of more mature teachers with the length of experience between 15-30 years (5 persons = 33.3 % each group).

The hypothesis that the traits of the ideal student may vary depending on the length of pedagogical experience was disproved, as the responses showed that in every age group the sets of qualities were very variable.

The second question was a list of 23 characteristics from which the respondents were supposed to choose the five most important for the ideal language student. The obtained results seem to only partly prove the hypothesis that the image of the ideal student should reflect the specifics of the educational institution because practically all instructors pointed out "Good critical skills, problem-solving skills" as the most significant quality (Figure 1).
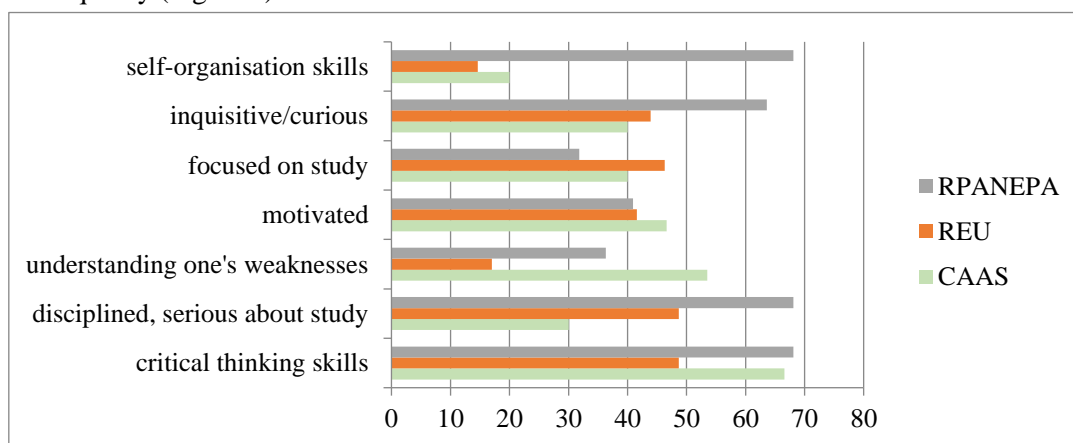
Figure 1. The importance of characteristics of the ideal language student in university.

In RPANEPA, specializing in economics, "critical thinking skills" and "serious disciplined attitude to study" shared the first place, while for the more academically oriented CAAS "disciplined" was in the fifth place following "the ability to understand one's weaknesses and the necessity for improvement" as well as "motivated attitude to study". For RPANEPA "the ability to see one's weaknesses" was among the most insignificant. Other characteristics pointed out by the teachers of all three universities (although with varying degrees of preference) included: "motivation", "enthusiasm and passion for study", "focusing on study and determination", "inquisitiveness and striving to learn more than required". The instructors from RPANEPA, providing education in economics and public administration, also gave an equal number of votes for "good time management skills/self-organization skills" and "the ability to understand one's weaknesses". The same university identified "moral and ethical principles" of students as one of the desirable qualities.

Interestingly, the teachers from all three universities did not value (0 answers) or valued very low (1 answer) such qualities as "leadership", "modesty" and "aspiration for good grades".

One more question pertains to the frequency with which the instructors meet students approaching their ideal. The responses from two of the three universities (REU and RPANEPA) demonstrated that they encountered such students infrequently (67.5 % and 81.8 % respectively) or practically never (REU – 20 %). In CAAS the votes were divided between "frequently" (46.7 %) and "infrequently» (53.3 %). Possibly, due to the fact that students enter this faculty to learn oriental/African languages as L2 and West European languages as L3, they have a stronger motivation to study languages in general than the students of economic departments and thus they are more disciplined and serious about their study of foreign languages.

Most surveyed teachers consider that students possessing the qualities of the ideal student motivate the other students in a group (60.7 % "rather yes" and 25.3 % "yes").

The last close-ended question asked the respondents if they speak to their students about their image of the ideal student. RPANEPA has a clear-cut group of teachers who unambiguously outline their concepts when they first encounter the group. They are 10 out of 22 (45.5 %) with a slightly smaller group of instructors who discuss it with their students periodically during the term (8 persons or 36.3 %). REU, on the contrary, has a marked group of teachers who talk about it with their students but rarely (24 persons or 57.1 %). In CAAS the votes were more equally distributed among the categories: roughly the same number describes their concept at the first lesson (33.3 %), sometimes and never (26.6 % each group).

The responses to the open-ended question "Which features does your ideal student possess?" were of utmost interest because the respondents were free to make any comment concerning their concept of the ideal student. In some cases, the participants mentioned the qualities they could not point out previously out of the necessity to keep to 5 positions only in the multichoice question. Therefore, they identified such characteristics as "the ability to collaborate in a team", "to understand one's weaknesses", "being positive". Cognitive abilities were also indicated: intellect above average, divergent thinking, good memory, broad horizons, and analytical mind. As far as attitudes are concerned, teachers would prefer their students being interested in the subject, intrinsically motivated and conscious about their study. Some components of emotional development were also pinpointed: psychological resilience, patience and tolerance (Cambridge Framework…, 2018). The teachers would like to see the students' ability to learn and to do it efficiently, e.g., to be able to pull themselves together, when necessary, especially in an exam, to perform best. Besides, good manners and elementary etiquette are appreciated in a student. It is worth mentioning that the teachers of REU repeatedly speak of their need for respect on the part of the students, for "empathy towards the teacher and gratitude for the opportunity to study". It means that teachers want to feel valued, not only for their work or professionalism. They want to feel valued as individuals. All in all, the comments in this part sound more emotional and expressive, for example: "There are no ideal students!!!" It may signify that the teachers do not apply the concept of "ideal" to students, for them students are people who possess or do not possess a certain set of qualities which should allow them to gain knowledge.

One of the objectives of the study was to find out if the teachers attempt to convey their concept of the ideal student. Therefore, the last question was: "Do you speak to your students about your image of the ideal student?" An attempt was made to find a correlation between the teachers' responses and the frequency with which they encounter ideal students. The following results were obtained:
- for the teachers who frequently meet ideal students: a marginally prevalent group was of those who convey their concept at the first meet (6/15), followed by those who do it sometimes (5/15), then by those who do it periodically (3/15), and only 1 respondent who does see the need to do it at all;
- for the teachers who infrequently meet ideal students: the teachers who speak about it sometimes prevail (20/52), followed by those who do it at the first lesson (12/52), then by those who do it periodically during the term (11/52), and, finally, those who never do it (9/52);
- for the teachers who practically never encounter ideal students (9): those who discuss it at least sometimes or periodically prevail (5 and 2 respectively). Among this group there are practically no teachers who introduce their concept at the first lesson (1) or do not see the need to do it at all (1).

Therefore, it seems that informing students of what is expected of them might help establish a better teacher-student understanding.

Rather the small number of teachers who do not often encounter their ideal student (15/78) does not allow making more definitive conclusions about whether the fact that some teachers introduce their concepts to the students the first time they meet in class makes the students better informed about the expectations and, thus, enables them to get closer to this ideal. It can be hypothesized that teachers have rather high expectations concerning their students' behavioural standards and academic performance. The teachers possibly assume that university students are actually adults and having had the experience of learning at school must understand what is expected of them at university. The previous survey conducted by the authors indicated that students mostly prefer a teacher-friend, but an older friend, who knows how to interest to motivate and demand in case of negligent attitude to the subject and study on the whole (Safronova, Klyukina, 2020). It follows that there should be a dialogue between a teacher and a student on equal terms which could eliminate hidden assumptions and unknown expectations.

Conclusions:

The obtained data can be summarized as follows:

- The five principal qualities of the ideal language student identified by the teachers of foreign languages in three leading Moscow Universities were practically universal with a leading position taken by "good critical thinking skills". Besides, all surveyed teachers would like to see disciplined and serious attitude to study. They value motivation and conscious approach to learning. Other characteristics of the ideal student include inquisitiveness, being focused on one's learning, being determined, enthusiastic and even passionate about studies. If there are differences among the universities of different specialties, they are insignificant and do not give a possibility to talk about the instructors' prevailing requirements to the students, though there were peculiar and noteworthy nuances concerning the teachers' expectations.

- The obtained data are not sufficiently conclusive to single out any specific traits of the ideal student depending on the length of teaching experience. Each age group of teachers had all possible sets of characteristics.

- It was found out that teachers tend to speak with students about their image of the ideal student either occasionally, or even at the first encounter with them, although whether it helps the students be better informed about the teachers' expectations, is not crystal clear. Nevertheless, there is some indication that teachers who quite frequently meet their ideal students tend to outline their concepts more often than those who do not encounter their ideals in real life. It seems obvious that the students should know about the aims and objectives of their course before it actually starts. Not only should students be informed about the materials and academic requirements, but also about the instructors' expectations concerning attendance, behaviour and attitudes. The clearer the teacher outlines their demands, the easier it is for the students to meet them, as they have a reference point.

The research can be carried on further to compare the qualities of the ideal language student singled out by the teachers and by the students of the same universities to discover if there is any agreement between them. One more possible direction for further study is to conduct an additional questionnaire to ask the teachers if they were ideal students themselves to see if their concept of ideal students correlates with their perception of themselves.

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Preliminary Adaptation of Criminal Attitudes to Violence Scale in Latvian and Russian

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Abstract: Violent offenders cause serious harm to their victims and affect the general well-being of the society. Many awareness and rehabilitation campaigns are introduced at the moment in Latvia that increases the necessity for adapted valid instruments in the native languages of the offenders. The aim of the research was to conduct a preliminary adaptation of Criminal Attitudes to Violence Scale (CAVS) in Latvian and Russian. CAVS has been designed to measure non-sexual physical violence of violent male offenders. Two groups ("Latvians" *N*=200 and "Russians" *N*=200) and four sub-groups of male offenders and non-offenders were formed. The translation of the scale in Latvian and Russian was organized separately and completed by back-translation method. Evaluation by both experts and a sample of target population was provided with the final Russian and Latvian versions of CAVS. Internal consistency of the items of the scale proved to be very good for all four sub-groups. Item analysis showed that both (Latvian and Russian) adapted CAVS versions work the best with the offender samples. There were three-factor structure reviled for both Latvian and Russian CAVS. The preliminary adaptation process has been completed and the further standardization process is intended.

Keywords: criminal attitudes, male offenders, physical violence, self-report measure, adaptation.

Introduction

Research of violence-related attitudes has become increasingly essential in the past few years, due to the global pandemic and other interconnected events that have increased violent actions or brought awareness to already existing levels of violence even in seemingly non-violent societies. Examples are police violence, racial violence, gender-based violence and most of all domestic violence (Proctor et al., 2020; Pillay, Barnes, 2020). There are a few very broad awareness-raising campaigns being conducted in Latvia on domestic violence that have been aimed at helping both victims of domestic violence and violent offenders with the aim to create a healthier society.

Violence is a broad term and there are many definitions and different theoretical models trying to find the best explanation. In most of the definitions, the reoccurring factor is that violence involves attempts, threats or actions of physical aggression. Violent behaviour could be motivated by extreme emotional states such as anger, frustration, rage or hate. In addition, *criminal violence* is theorized to be an illegal violent behaviour (Riedel, Welsh, 2015). It is a well-known and often researched fact that people's attitudes are strongly linked to their behaviour (Ajzen, 1991; Moore, Rothwell, Segrott, 2010; Seddig, Davidov, 2018). *Attitudes* in relation to *criminal behaviour* are definitely one of the main factors influencing criminal behaviour, its limits and the possibility of change. Generally speaking, criminal attitudes are ". . . thoughts, feelings and beliefs that are supportive of criminal conduct . . . . Antisocial attitudes are all about when it is alright to break the law" (Bonta, Andrews, 2016, 234).

Most researches on attitudes towards violence investigate the valence of attitudes from: (1) the viewpoint of the victim, thus how they perceive the violent actions that are brought upon them (Antai, Antai, 2009) or (2) the viewpoint of the society (Stickley et al., 2008). When implementing projects aimed at the rehabilitation and resocialization of violent offenders, it is necessary to research and analyse violence-related attitudes from the viewpoint of violent offenders that mostly are males (out of nine penitentiary institutions in Latvia, only one is for female prisoners). Assessment of criminal attitudes is one of the key components (alongside other psychological factors such as self-esteem) in programs and interventions aimed at reducing recidivism (Thapa, Brown, Skilling, 2020). To provide this assessment, valid measurement methods are needed.

In Latvia there is an issue regarding adapted research methods to measure violence-related attitudes. The author of the present article communicated with a staff member of The Methodological Department of University of Latvia (Faculty of Education, Psychology and Art) and received a confirmation that

they were not able to locate any tests in their database measuring violence or aggression-related attitudes that were adapted in Latvian. This shows the necessity to adapt valid instruments measuring attitudes towards violence from the viewpoint of violent offenders.

The author together with colleagues started to research implicit attitudes towards violence of sentenced male offenders in the year 2013. In addition to different versions of Violence Implicit Association Test (IAT) there was a necessity for a valid self-report instrument measuring the same construct. Criminal Attitudes to Violence Scale (CAVS) was chosen (Polaschek, Collie, Walkey, 2004), which was originally developed in New Zealand. It is a 20 item, one-factor instrument developed specifically for the sample of male criminal offenders, because it is short and understandable for people of limited attention span and low education levels.

Although there are plenty of adapted and constructed self-report measures on aggression and violence in Russian, for example, the Aggression Questionnaire (AQ) (Buss, Perry, 1992; Jenikolopov, Cibulskij, 2007), the authors decided to conduct the adaptation process of CAVS in both Latvian and Russian at the same time. The decision was based on the author's research and clinical experience that the majority of inmates are Russian speaking, although there is no recent data available on how many Russian-speaking inmates are incarcerated in the prisons of Latvia. Even if the individual is fluent in Latvian, it is always easier to report his/her attitude in their mother tongue.

The Original development and preliminary validation of CAVS

D. Polaschek and colleagues conducted a wide analysis on self-report measurement methods for measuring attitudes towards violence and aggression. They concluded that there is a lack of research that investigates adult attitudes to aggression or violence in general, not to mention specially designed self-report measures for incarcerated males in particular (Polaschek, Collie, Walkey, 2004). Some scales (for example, Attitudes Towards Violence Scale (ATVS)), designed to measure general violence, were developed based on adolescent non- offender samples (Funk et al., 1999). D. Polaschek and colleagues aimed to develop a scale that: (1) is understandable for incarcerated males with low literacy levels and limited attention span; (2) is based on the offender's cultural background and subjective previous experiences; (3) was not correlated with a measure of social desirability bias; (4) would be able to separate violent from non-violent offenders. The authors argued that: "(..) measures of violence-related attitudes developed with violent prisoners would be better able to distinguish violent offenders from other career criminals, and would thus have more utility in a correctional setting than scales designed for non-offender populations" (Polaschek, Collie, Walkey, 2004, 495).

For the first study an item pool of 75 items was created that included attitudinal statements towards the content of non-sexual physically violent actions. The items were mostly drawn from authors' clinical experience as well as some items were added from the ATVS and EXPAGG-M (a scale for adult samples aimed at measuring aggressive attitudes was also tested on imprisoned offenders, here there was a correlation found to self-reported aggressive behaviour) (Archer, Haigh, 1997). All items were simply worded and written in the present tense. A five-point Likert scale was provided for each item from 5 (strongly agree) to 1 (strongly disagree). In this research 147 imprisoned male offenders were questioned and the results were correlated with the 6 out of 40 Balanced Inventory of Desirable Responding (BIDR) items (Paulhus, 1991) and The Physical Aggression Subscale of the Aggression Questionnaire (AQ-PA) (Buss, Perry, 1992). An exploratory factor analysis was used for the result analysis. The authors wanted to develop a brief single factor scale, as there was no theoretical or empirical evidence suggesting that a multi-factor scale would be a better solution. Principal component analysis with varimax rotation (PCA: VR) specified the factors to extract because of the unsuitable factor loadings and compliance with BIDR data. From the remaining 53 items, 20 items were chosen, which provided the best correlation with AQ-PA scores (0.48 and better) (Table 1).

The aim of the second study was to test on an independent sample (155 sentenced male prisoners), the results of CAVS were still internally reliable, related to physical aggression and uncorrelated with social desirability bias. Result of internal reliability (0.95) was very high. CAVS mean score was not significantly different from the first study. There was a relationship found to AQ-PA8 and there was no relationship found to BIDR, as it was expected. D. Polaschek and colleagues (2004) concluded that CAVS is a valid measure that assesses criminal attitudes. Specifically, the term "criminal attitude" was used, because of the criminal content of the items, assuming the participants' involvement in a criminally violent lifestyle.

Table 1

Final Factor Loadings for CAVS Items from Single Factor PCA

Origins of the item	Item	Factor Loading
Clinical experience	If somebody insults me or my family, I feel better if I beat them up.	0.8
	Lots of people are out to get you so you have to be violent.	0.78
EXPAGG Instrumental beliefs subscale	When I get violent, what I want most is to teach the other person a lesson.[b]	0.77
Clinical experience	Men should be allowed to sort their differences out by fighting.	0.77
	If somebody puts me down, I feel like I have to fight them to get back my pride.	0.74
EXPAGG Expressive beliefs subscale	The best thing about being violent is that it gets my anger out of my system.[c]	0.72
Clinical experience	Fighting between men is normal.	0.72
EXPAGG Instrumental beliefs subscale	After a fight I feel happy if I won and depressed if I lost.[b]	0.71
Clinical experience	Some people have to be treated roughly because they lack feelings that can be hurt.	0.71
	My loyalty to my friends or gang is more important than avoiding violence.	0.69
EXPAGG Instrumental beliefs subscale	I am more likely to be violent when another person shows me up in public.[b]	0.69
Clinical experience	The best lesson a man can teach his son is how to fight.	0.68
	It is important to fight when's your gang's honour is threatened.	0.67
EXPAGG Instrumental beliefs subscale	I believe that you have to use violence to get through to some people.[b]	0.67
	The best thing about being violent is that it makes the other person get into line.[b]	0.67
Clinical experience	When your main business is crime, being violent is just part of the job.	0.67
ATVS	It's necessary to carry a gun or a knife if you live in a rough neighbourhood.[a]	0.67
	If a person hits you, you have to hit them back.[a]	0.66
Clinical experience	If I assault or rob someone, the chances are I'll get away with it.	0.64
	Violence is an important part of my culture, even if it is against the law.	0.62

[a]ATVS (Funk et al., 1999)
[b]EXPAGG Instrumental beliefs subscale (Archer, Haigh, 1997)
[c]EXPAGG Expressive beliefs subscale (Archer, Haigh, 1997)

The aim of the present research is to conduct preliminary adaptation of criminal attitudes to violence scale in Latvian and Russian.

Methodology

The research questions were set:
1. Does the language validated CAVS version in Latvian and Russian present the item content correctly?
2. Does the language validated CAVS version in Latvian and Russian properly carry out the construct of the scale?
3. Is the Latvian and Russian CAVS still measuring attitudes towards physical non-sexual violence accurately?
4. How well the items of the language validated CAVS versions in Latvian and Russian fit together with other items?
5. Do the Latvian and Russian CAVS perform differently on the samples of offenders and non-offenders?
6. What is the factor structure of Latvian and Russian CAVS?

Participants. To adapt CAVS in Latvian and Russian four subsamples were considered:
1. Latvians (N=200). Sub-group "Offenders LAT" consisted of 86 male prisoners (aged 19-72; *Mdn*=33.5; *SD*=11.05) incarcerated in two penitentiary institutions in Latvia. Sub-group "Non-Offenders LAT" consisted of 114 never before sentenced males (aged 18-73, *Mdn*=28.5; *SD*=12.93).
2. Russians (N=200). Sub-group "Offenders RUS" consisted of 54 male prisoners (aged 18-62; *Mdn*=38; *SD*=11.2) incarcerated in two penitentiary institutions in Latvia. Sub-group "Non-Offenders RUS" consisted of 146 never before sentenced males (aged 18-75, *Mdn*=44.5; *SD*=14.13).

The participants were informed that the assessment was conducted under conditions of strict anonymity. The offender's sub-samples in particular were informed that the data will be used only for research purposes and anonymity and that confidentiality is guaranteed.

Instrument. Criminal Attitudes to Violence Scale (CAVS) (Polaschek, Collie, Walkey, 2004).

Procedure. The author followed the general guidelines for adaptation of the test described in the literature (Rascevska, 2005; Boateng et al., 2018), after obtaining an official written permit from the original author to adapt CAVS in Latvian and Russian. The original author also provided the whole packet of CAVS that included the test itself as well as administration and scoring guidelines. Content analysis was done on the items of CAVS, especially paying attention to the cultural factors, because crime culture in Latvia and New Zealand differs significantly.

Translation and language validation

The translation in both languages was organized separately and completed by back-translation method.

CAVS translation in Latvian. Three English teachers, who were native Latvians, were asked to translate CAVS in Latvian. Then the translations were interchanged and translated back into English. Afterwards each item was discussed separately by the teachers and a forensic psychologist (expert) and the best version of the item was chosen. The first draught of the translated scale was given to a sample of 5 male students to fill out and comment on each item, corrections were then made accordingly.

CAVS translation in Russian. CAVS translation was done as a seminar assessment for 4th year Psychology undergraduate students in Baltic International Academy. A group of native Russian speaking students with good English skills were formed and they translated CAVS into Russian, exchanged the translations and translated it back to into English. Together with a Russian native psychology supervisor (expert) they discussed each item and concluded the best version of the scale. A group of 5 Russian native male participants were formed. They filled in the scale and gave their view of each of the topics, corrections were then made accordingly.

Since then, six research studies have been conducted (Simane-Vigante, Plotka, Blumenau, 2018; Simane-Vigante, Plotka Blumenau, 2020) on a sample of offenders and non-offenders using the preliminary linguistically adapted CAVs, each time supplying an evaluation of the target population (violent male offenders) and making corrections accordingly. After the last research, the Latvian and Russian version of the scale was approved and ready for the psychometric evaluation process.

Results and Discussion

Descriptive statistics. Analysis of descriptive statistics was conducted for each general group of Latvians and Russians as well as sub-groups of offenders and non-offenders, to check the item properties. There is a formal normal distribution of the data, although there are also many outliers evident. Figures 1-3 show the distribution of the responses for the items in the Latvian group and sub-groups. It is visible that Latvian CAVS work much better (no outliers and extremes are visible) on the offender's sub-group, as it was originally thought to be (Polaschek, Collie, Walkey, 2004). The content of the items with the most outliers and extremes is discussed in Table 2. Some of the content was slightly changed in the process of language validation from the original (Table 1) due to cultural and other factors.

Table 2

The content of "questionable" items

| Language	Item number	Linguistically validated item content	In English
Latvian	Q3	Daudzi cilvēki paši "uzprasās" uz vardarbību	Many people "ask for" violence themselves
	Q20	Vardarbība ir svarīga manas kultūras daļa, pat, ja tas ir pretlikumīgi	Violence is an important part of my culture, even if it is against the law
Russian	Q7	Проявление насилия позволяет мне дать волю своему гневу	Being violent lets me unleash my anger
	Q8	Лучший урок, который мужчина может преподать своему сыну - научить его драться	The best lesson a man can teach his son is how to fight
	Q20	Насилие является важной частью моей культуры, даже если оно противоречит закону	Violence is an important part of my culture, even if it is against the law
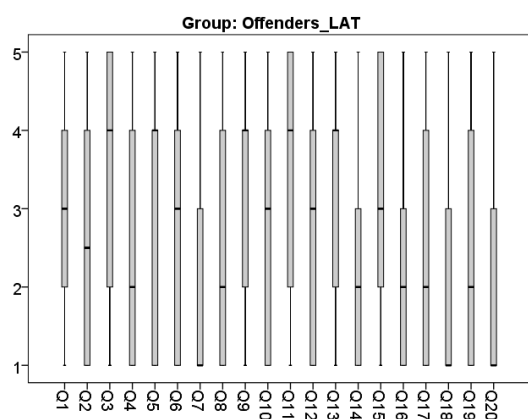
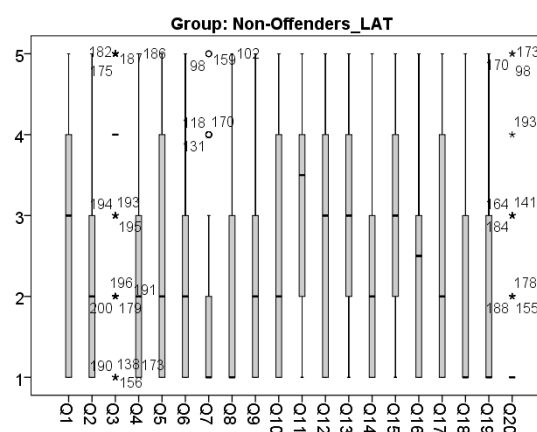Figure 1. Boxplot of Latvian sample sub-group (offenders).

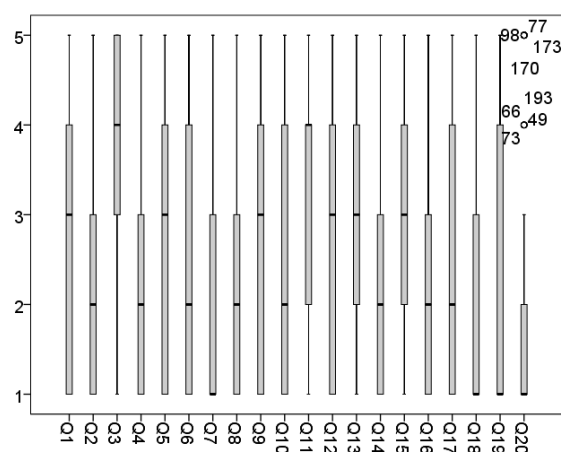Figure 2. Boxplot of Latvian sample sub-group (Non-offenders).

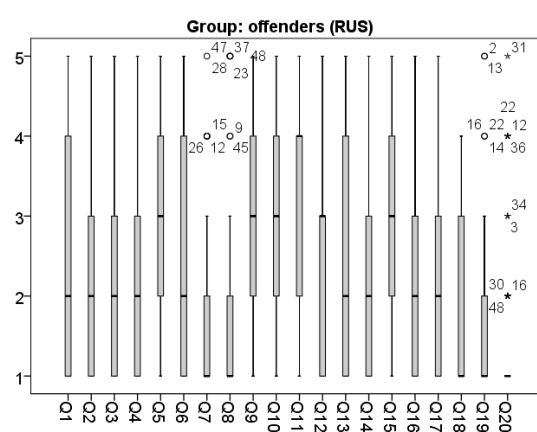Figure 3. Boxplot of general Latvian sample.

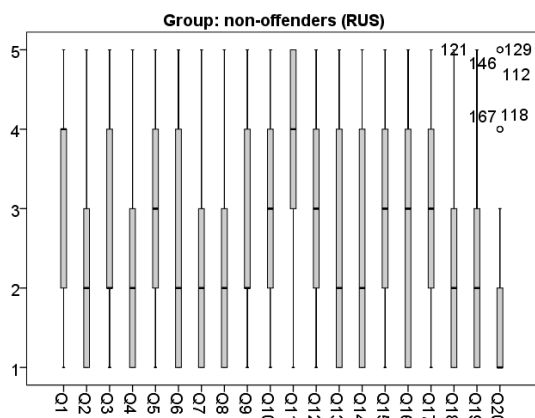Figure 4. Boxplot of Russian sample sub-group (offenders)

Figure 5. Boxplot of Russian sample sub-group (Non-offenders).
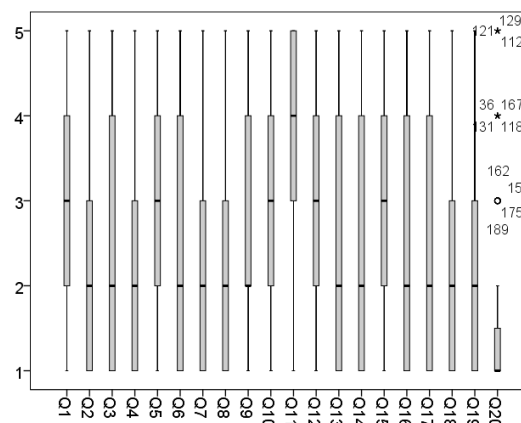
Figure 6. Boxplot of general Russian sample.

Analysis of internal consistency. To answer the second research question, a reliability analysis was performed. Cronbach's alpha reliability analysis showed results varying from good to excellent.

1. For the group "Latvians" Cronbach's alpha was 0,87 (sub-group "Offenders LAT" 0,9; sub-group "Non-Offenders LAT" 0,8).

2. For the group "Russians" Cronbach's alpha was 0,83 (sub-group "Offenders RUS" 0,85; sub-group "Non-Offenders RUS" 0,81).

Item analysis (Item difficulty, item discrimination). To answer the first, third and fourth research questions, item analyses were conducted.

Item difficulty. If the items of the test are formed on a sequential scale (answers vary in a range of 3 or more, such as the Likert scale), then the difficulty index is calculated as the arithmetic mean of the items M_j. As, in this case, there are 5 values – from 1(strongly disagree) to 5 (strongly agree), then M_j should be in the range of 1.4-4.2 (Rascevska, 2005). Group "Latvians" M_j is in the range of 1.59-3.69; for the group "Russians" M_j is in the range of 1.45-3.60, which is acceptable in both cases. The same is seen for the four sub-groups, except item 20 for the Latvian sub-group "non-offenders" M_j=1.33. Both item 20 and the Latvian non-offender sample already raised some questions (Figure 2) and will be examined further.

Item discrimination. According to E. Cristobal and colleagues (2007), the items are considered acceptable if the item total correlation score is more than 0.30 (Cristobal, Flavián, Guinalíu, 2007). However, in some cases (for example, exploratory studies) 0.20 is an acceptable value (also called as workable). Items with scores below 0.3 can be looked at, but not necessarily deleted, as the reliability score does not improve at all, if the items are deleted. Latvian non-offender's subgroup has more unacceptable items, but as it was reviled before (Figure 2), CAVS were designed for the population of offenders (Polaschek, Collie, Walkey, 2004) and the psychometric properties of the adapted instrument (Latvian version) prove that the scale works a lot better on the population of offenders.

In the Russian group the corrected item total correlation score is unacceptable (below 0.30) in all three cases (results of the group and subgroups) for item 20 (Figures 4 - 6). This item was discussed by the participants the most. Some of them did not understand the meaning of culture, some did not understand if there is a kind of violence that is not against the law. Instead of deleting the item all together, a content analysis of this question was carried out by a Russian native forensic expert and an organization of another focus group of five Russian inmates sentenced for violent crimes, and a decision was made to change the wording of the item to: *"Насилие является важной частью моей жизни, несмотря на то что оно противоречит закону"* (in English: Violence is an important part of my life, despite the fact that it is against the law). In this case the word "culture" is replaced with "life" and the second part of the sentence is rewarded. Moreover, the same change was done for Latvian CAVS, as it was evident that the item properties are questionable for non-offenders, which impacted the data of the whole sample (Figure 2, Figure 3). Further procedure of standardization is necessary to decide either this item should be left or removed permanently.

As the r Item-total correlation score for none of the items of the general samples of Latvian and Russian population is below 0.2, it has been decided to move forward to factor analyses using the data of the whole sample of Russians (N=200) and Latvian (N=200) participants. Particular limitations of the sample are discussed further.

Factor analysis. Using factor analysis (Principal Component Method, Rotation Varimax, KMO = 0.88 (LAT); KMO=0.79 (RUS), Bartlett's Test of Sphericity: (RUS) $\chi2$ (171, $N = 200$) = 866, p <0.001 and (LAT) $\chi2$ (171, $N = 200$) = 1084, total explained variance 40%, three factors) applied to the scale of non-sexual physical violence CAVS method, three factors were obtained for each group. The first factor included almost identical items for both groups. The factors were preliminary named: RUS "Anger induced physical violence", "Violence benefit and necessity index" and "General violent attitude and belief index". For Latvian CAVS: "Anger induced physical violence", "Violence justification index" and "General violent attitude and belief index".

Limitations. The sample size is the most essential limitation in this study. Although it can be argued, because it has been said that at least 10 participants are the minimum for each item. As CAVS has only 20 items, 200 participants in each group could be enough. Some other authors have also said that 200-300 participants (minimum) are enough for factor analyses (Boateng et al., 2018). However, there are many researchers that would oppose the sample. It is essential to thoroughly plan the time and recourses that each research is going to take. As there were two adaptations done at the same time, the process was even more difficult. The sample of violent male offenders is not easily accessible and the topic of physical violence is not always well received by the targeted population. It is planned to conduct further standardization of the test in a much larger sample of the targeted population.

The sample of offenders was not limited to violent offenders only, due to the limited accessibility of the target population. Perhaps that is the reason Russian CAVS results for the sample of offenders showed uneven tendencies. In the standardization of CAVS, only violent male offenders should be carefully chosen and other demographics should be taken in to account as well as the relationship with a similar adapted version.

Conclusions

- Criminal attitudes are thoughts, feelings and beliefs supporting criminal conduct. Thus, if a person thinks that the most effective way to resolve a conflict or make someone respect him is by physically harming or threatening to harm another person, he is likely to act violently in a state of intense negative emotions, for example, anger or hate.

- Criminal attitudes towards violence measurement methods are needed to predict the risk of repetitive violent behaviour, as well as measuring the effectiveness of the rehabilitation program or intervention.

- It is necessary to adapt the instrument in both Latvian and Russian languages to be used for the sample of violent male offenders.

- The translation in both languages was organized separately and completed by back-translation method.

- Evaluation by both experts and target population was provided with the final Russian and Latvian versions of CAVS.

- Internal consistency of the items of the scale proved to be very good for all four sub-groups.

- Item analysis showed that both (Latvian and Russian) adapted CAVS versions work the best with the offender samples.

- There were three-factor structures reviled for both Latvian and Russian CAVS.

- It is planned to conduct further standardization of the test on a much larger sample of the target population.

- The preliminary adaptation of Latvian and Russian CAVS is completed and the instrument can be used to measure non-sexual physical violence of violent male offenders.

- CAVS can be used to track the progress of rehabilitation programs of violent male offenders.

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The Independence of Primary School Students in Learning Music at a Distance During Covid-19 Pandemic

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Abstract: As a result of the Covid-19 pandemic, the primary school students were forced to study at a distance of two and a half months starting from mid-March 2020. There was a situation where students had to learn music independently more than they had done so far. The study aims to determine 2nd and 3rd grade students' perspectives on independent distance learning of music during the Covid-19 pandemic. To achieve the aim of the study, previous researches on this issue were analysed, as well as an empirical study was carried out. The study involved 105 (N=105) primary school students in grades 2-3 and occurred in the second term of the 2019/2020 school year in a public primary school located in Riga. A questionnaire consisting of 20 statements was conducted to determine students' perspectives on music distance learning independently. The twenty statements were divided into four groups: students' independence, provision of technical aids, difficulties and attitude. The study revealed that the students' skills to find and complete the tasks that are given by the teacher in the E-class are at a middle level. The students assessed their ability to learn to sing songs and perform music listening tasks independently at a high level. The students mostly used computers or mobile phones when they learned music at a distance. However, the majority of students faced a lack of technical aids. The study found out that complete music listening task was the easiest for the students, but a little harder was learning to sing songs. The most difficult part of learning for students was to complete a writing task because the possibility of printing it was limited. The students rated their attitude towards music distance learning independently at a middle level. Many students missed the presence of their teachers and longed for social activities in the classroom. The study concluded that there is a significant difference between 2nd and 3rd grade students' skills to find independently the tasks sent by the teacher. Moreover, the 3rd grade students wanted to learn music independently at a distance more than the 2nd grade students did. The study provides evidence-based data on primary school students' readiness to learn music independently at a distance.

Keywords: distance learning, independence, music lesson, primary school student, school education.

Introduction

At the beginning of 2020, the education system faced many challenges in the transition to distance learning. One of the challenges was to teach children how to find the tasks independently, complete them, and send them back to their teacher. During the Covid-19 pandemic, the teacher had to find a way to support students to learn at a distance. In the spring of 2020, it was reported in mass media that students' distance learning is hindered by the lack of computer and internet access and the lack of independent work skills and motivation (Medne, 2020). On the other hand, in distance learning, the teachers have to cope with a much more intense workload. They need to respond more flexibly to the new situation, manage their time, prepare appropriate teaching materials, and deal with technical problems (Opincāne, 2020). It means that independent distance learning caused a problem for students and created additional stress for teachers.

To understand better why independent learning can be difficult for students, let us analyse the meaning of independent learning. Independent learning can be defined as a learning approach in which students are encouraged to be self-regulated learners (Wallace, 2015), or as a mode of learning in which the learner in some way is working independently of a teacher (Lamb, 2006). It is considered as a process, method and philosophy of education by which the learner acquires knowledge and develops cognitive and critical assessment skills on his/her own (Candy, 1991). Independent learning can be difficult for primary school students because they cannot get the teacher's support immediately and have to deal with a wide range of situations on their own.

Independent learning is related to the ability to set learning goals, organize and manage learning activities (Zheng et al., 2020). It is inconceivable without responsibility. B. Meyer and colleagues

believe that responsibility includes understanding one's learning, motivation to learn and cooperating with the teacher (Meyer et al., 2008). Independent learning is about making a responsible decision. The student is expected to analyse the problems encountered, reflect on his/her learning, make decisions, and take purposeful actions (Kopzhassarova et al., 2016).

Distance learning has become more topical during the Covid-19 pandemic as an alternative to the traditional educational process. I. Katane and colleagues concluded that since the 18th century, when the first attempt of distance education had been registered, until nowadays the humankind has amassed a rich experience in this sphere (Katane, Katans, Vavere, 2012). Independent learning is a process in which regulating the learning process and controlling it are undertaken by the students themselves (Balapumi, Aitken, 2012). Learning independently students manage their time by following their learning process without needing teachers or parents' assistance (Darnis, 2020). For students to manage their time as efficiently as possible, they should start to perform the task without delay, do it with pleasure, and do not deal with side things. E.L. Deci and R.M. Ryan understand independence as acting alone and not relying on others (Deci, Ryan, 2008). R. Balapumi and A. Aitken, in turn, describe independent learning as proactive, self-motivated, and resourceful learning (Balapumi, Aitken, 2012).

Independent learning is not only just about students learning on their own and giving them more independence but also the teacher should be involved in the learning process as well. Several researches have also provided evidence of the effectiveness of teacher involvement in the process of learning independently. For example, M. Cukurova and colleagues (Cukurova, Bennett, Abrahams, 2018) studied the effectiveness of guided independent learning and unguided independent learning. The study revealed that guided independent learning improves the knowledge and skills required to deal with new situations. In turn, unguided independent learning leads to an increase in the number of mistakes in the task. The researchers concluded that counselling and extra support are also needed to enable students to learn independently. P. Hughes also believes that independent learning should be complemented by contact, support and training that provided by the teacher (Hughes, 2014). Moreover, M. Gorman emphasizes the need for the teacher to think about learning stages and learning outcomes (Gorman, 1998).

Independent learning is facilitated by formative feedback (Issa, Issa, Kommers, 2014), creation of e-portfolios (Chau, Cheng, 2010), and proper organization of independent work (Kopzhassarova et al., 2016). The researchers also believe that students' independent learning is influenced by self-regulated learning (Sukowati, Sartono, Pradewi, 2020) and internal motivation or desire to learn without the support of another person (Deci, Ryan, 2008). If students have a lack of interest in the learning activities, they will need external stimuli and other assistance to learn independently.

The question is whether primary school students can learn independently. D. Whitebread and colleagues (Whitebread et al., 2005), while studying the development of independent learning for preschool children aged 3-5, concluded that even at this age children can learn independently. On the other hand, L. Sze Yean, when analysing the promotion of active and independent learning in primary education, acknowledged that it is important for students to learn independently as opposed to listening and absorbing the information presented by the teachers (Sze Yean, 2019). To learn independently, students should have the ability to supervise their learning process. This, in turn, helps to perform a certain task and achieve the goal.

Music is one of the subjects that must be acquired in primary school. Face-to-face making music is often collective work. In the face-to-face music lessons, the students are singing together, playing music instruments, improvising, making rhythm in a little group or sometimes individually. L. Thornton believes that learning music at a distance prevents the collective work needed to make music because "there is currently no technological way to make music together, in real time, in distance locations" (Thornton, 2020, 6). This means that when performing musical activities at a distance, the students mostly have to do it individually. It is hard because the ability to make music individually requires appropriate musical experience and many skills. L. Ritchie and A. Williamon studied primary school students' self-efficacy in learning music. The analysis of children's previous musical experiences, out-of-school and daily musical activities provided the researchers with the conclusion that students who play a musical instrument or sing daily have significantly higher self-efficacy rates than those who do not play music outside the classroom (Ritchie, Williamon, 2011). Furthermore, E. Shieh and R.E. Allsup considered that making music independently is closely connected with acquiring the skills needed. It is

the student's desire for something unexpected, for something that teachers are not able to predict, measure or compare. Independent music making provides students with the opportunity to sing or play a musical instrument even after school (Shieh, Allsup, 2016).

Independent and distance learning requires not only musical experience and a variety of skills but also creating an environment conductive to learning. Learning is facilitated by the physical environment and learning resources (Meyer et al., 2008). A study conducted by R.L. Martens and colleagues (Martens, Valcke, Portier, 1997) concluded that the impact of an interactive learning environment on independent learning is not less effective than printed learning materials or face-to--to-face lessons.

Due to the Covid-19 pandemic an unprecedented but significant experience is acquired. So far, the nature of independent learning has been studied in the context of face-to-face lessons more than in the context of distance learning. The analysis of primary school students' independence in learning music at a distance is insufficient. It is also essential to understand how primary school students themselves feel when learning music independently at a distance. That determined the aim of this study.

The study aims to determine 2nd and 3rd grade students' perspectives on independent distance learning of music during Covid-19 pandemic.

Methodology

The study was carried out in the second term of the 2019/2020 school year in a public primary school located in Riga. The study included 105 (N=105), second (N=47) and third (N=58) graders consisting of 73 girls (N=73) and 32 boys (N=32).

The study seeks to answer the following five research questions:
- How independent are students during learning music at a distance?
- What technical teaching aids do students use to learn music at a distance?
- What difficulties do students have in music distance learning?
- What is the students' attitude towards music distance learning independently?
- Is there a difference between 2nd and 3rd grade students in learning music independently at a distance?

A questionnaire consisting of 20 statements was conducted to answer the questions raised in the study. The second and third graders were asked to assess each statement using a 4-points Likert scale. The questionnaire was anonymous and the results were analysed as a whole. The time given to complete the questionnaire was not limited. For data processing, the response variants were recoded into digits: 4 – always, 3 – often, 2 – rarely and 1 – never. To determine the level of students' independence in music distance learning, the 4-points Likert scales were divided into three levels. If the arithmetic mean ranges from 1.00 to 2.00, it is a low level, if it ranges from 2.01 to 3.00, it is a middle level and if it ranges from 3.01 to 4.00, it is a high level.

The statements used in the study were categorized into four groups. The first group determined students' independence in learning music at a distance. The second group identified what technical aids students use in learning music at a distance. The third group revealed the types of musical activities that are more difficult for students to learn independently at a distance. In turn, the fourth group determined the students' attitude towards music distance learning independently.

The quantitative results were analysed using the Statistical Package for the Social Science (SPSS) version 22 data processing software. The Cronbach's Alpha coefficient was calculated to determine the internal consistency, reliability and the validity of the questionnaire statements. The arithmetic mean (M), standard deviation (SD), standard deviation error (SE), and the median (ME) were calculated for each statement of the study. The median (ME) describes the significance of the variable, and by comparing it with the arithmetic mean (M) determines whether the data collected in the study is symmetric or asymmetric. To determine the normality of each variable, the Skewness and the Standard Error of Skewness were used. If the Skewness ranges from -0.5 to 0.5, it means that the collected data is fairly symmetrical if it is from -1 to -0.5 or from 0.5 to 1, it shows that the data is moderately skewed, and if it less than -1 or more than 1, then it is highly skewed. The Bivariate (Pearson) correlation analysis was used to examine the reliability of the responses. The correlation coefficient has statistically

significant sigma of 0.01 and 0.05. To determine whether there is a significant difference between 2nd and 3rd grade students' independence in distance learning of music ANOVA was used.

Results and Discussion

The consistency and reliability of the questionnaire statements are sufficient (a=0.489) to analyse the students' independence in learning music at a distance, the provision of technical aids needed for learning, the difficulties encountered while learning music, as well as the students' attitude towards music distance learning independently.

Independent learning is an essential part of distance learning. For students to be able to perform the assigned tasks in music independently, they must have many skills, such as the ability to find the task, complete it and send it back to the teacher. The study found (Table 1) that the students, at a middle level, could find the assigned tasks in E-class by themselves (M=2.66; SD=1.173), complete the writing tasks independently (M=2.88; SD=0.923) and send it to the teacher (M=2.06; SD=1.195). The study also revealed that there is a difference between 2nd and 3rd students' skills to find the assigned music tasks in the E-class (F=6.94, p=0.010<0.05). If the students find the music tasks in the E-class, they will learn to sing songs (r=0.431; p<0.01), perform music listening tasks independently (r=0.290; p<0.01) and will be able to send the completed tasks to the teacher (r=0.530; p<0.01). Besides, if students find the tasks in E-class by themselves, they will have no problem learning music at a distance by using technology (r=0.242; p<0.01), their parents will be less involved in the music learning process (r=0.303; p<0.01) and they will learn music more (r=0.267; p<0.01).

Table 1

Independence in learning music at a distance

Statements	M	SD	SE	ME	Skewness
I could find the tasks in E-class by myself	2.66	1.173	0.114	3.00	-0.265
I performed the writing tasks independently	2.88	0.923	0.090	3.00	-0.367
I learned to sing songs independently	3.22	0.912	0.089	3.00	-0.938
I listened to music and performed related tasks independently	3.13	0.866	0.084	3.00	-0.751
I could send the completed task to the teacher in E-class	2.06	1.195	0.116	2.00	0.627
I learned music a lot by myself	2.50	0.914	0.191	2.00	0.021
My parents helped me to learn music	2.71	1.080	0.105	3.00	-0.244

The students assessed their ability to learn to sing songs independently (M=3.22; SD=0.912) and perform music listening-related tasks (M=3.13; SD=0.866) at a high level. If the students can learn to sing songs independently, it will not be difficult for them to learn these songs (r=0.243; p<0.01). The study found that there is a relationship between the students' ability to perform writing tasks independently and their ability to sing songs by themselves (r=0.283; p<0.01) as well as to complete music listening tasks (r=0.452; p<0.01). In this case, the parents' involvement was not necessary because the students themselves could learn music at a distance (r=0.255; p<0.01). The parents would involve in music distance learning if the students could not complete the writing task (r=0.332; p<0.01) or if the students did not want to devote much time for performing the tasks (r=0.301; p<0.01). The students assessed the assistance of their parents during distance learning of music at a middle level (M=2.50; SD=1.080). At the same time, the median and skewness scores (M=2.00; Skewness=0.021) allow concluding that the results obtained are highly skewed, which in turn indicates that there were some students whose parents were more involved in learning music and others who have not got any assistance from parents.

Independent distance learning of music is unthinkable without motivation to learn at a distance, insistence and non-surrender in difficult moments. Moreover, S. Darnis, who studied the impact of 1st grade students' independent learning on achievement in learning English, admits that independent learning is related to interest in the learning process, the immediate focus on performing the tasks and the insistence during performance (Darnis, 2020).

When learning music at a distance, students must be adequately equipped with technical aids. The students admit that they are learning music at a distance mostly by using mobile phones and computers, but the minority of them use tablets (Table 2). The study determined that there is significant different between 2nd

and 3rd grade students in how often they use tablets in distance learning of music (F=6.32, p=0.013<0.05). Besides, the median and skewness scores (ME= 1.00; Skewness= -0.891) provide an opportunity to conclude that the results obtained are moderately skewed, which in turn indicates that some students mainly use tablets only for learning music, but some students either do not have tablets at all or do not use them for learning.

After starting distance learning of music, many questions were asked by teachers and parents appeared in social networking sites and media about the possibility of learning music at a distance. The authorities responsible for education offered solutions. One of the solutions that help teachers ensure distance and independent learning of music in primary education was the creation of an educational TV program "Your Classroom". The study revealed that during the Covid-19 pandemic, the primary school students did not sufficiently use the opportunity to learn music through the offered TV program (M=1.40; SD=0.872).

Table 2

Providing students with technical aids for learning music at a distance

Statements	M	SD	SE	ME	Skewness
I was able to print the task	1.87	1.214	0.118	1.00	0.898
I learned music with the help of a computer	2.34	1.239	0.120	2.00	0.214
I learned music with the help of a tablet	1.89	1.216	0.118	1.00	0.891
I learned music with the help of a mobile phone	2.38	1.296	0.126	2.00	0.200
I learned music with the help of TV programs	1.40	0.872	0.085	1.00	2.216
I had a lack of technical aids to learn music	1.81	1.026	0.100	1.00	0.862

The students assessed the possibility to print the assigned music tasks at a low level (M=1.87; SD=1.214). Furthermore, the students think that they have not been provided with the needed technical aids for distance learning (M=1.81; SD=1.026). On the other hand, those students who had the opportunity and were able to print the page needed to complete the writing task could easily send it back to the teacher (r=0.397; p<0.01). The students who learned music at a distance using a mobile phone or a tablet, admitted that they did not have the opportunity to print the teaching material sent by the teacher (r=0.348; p<0.01). It is interesting to note that those students who were able to print the assigned music tasks from the E-class, felt that they would like to continue learning music at a distance (r=0.266; p<0.01).

The shortage of technical aids during independent learning of music at a distance has a significant impact on performing the writing tasks (r=0.331; p<0.01), learning to sing (r=0.430; p<0.01) and listening to music (r=0.316; p<0.01). Insufficient technical aids do not motivate students to learn music. Because of that, the students spend less time on independent distance learning of music (r=0.354; p<0.01), and the parents cannot help children if there is a lack of technical aids in the family (r=0.222; p<0.01).

Researchers also acknowledge the advantages of using technical aids in the music learning process. For example, R. Upitis and colleagues have determined that music teachers value the use of digital tools (Upitis, Abrami, Boese, 2016) as they help to achieve musical success (Upitis, Boese, Abrami, 2017). D. Wicks points out that the key to learning through technology is to create more accessible, new and better forms of learning (Wicks, 2008). However, T.C. Reeves thought that the computer cannot compensate the students' lack of musicality, but it can help them to maximize their musical abilities to be applied in a new and challenging context (Reeves, 1998). Technical aids are essential for successful independent music learning. The third group of statements identified the difficulties encountered while learning music independently at a distance. The obtained results are presented in Table 3.

Table 3

Difficulties faced by students during independent learning of music at a distance

Statements	M	SD	SE	ME	Skewness
I had difficulty in completing the writing tasks	2.36	0.931	0.090	2.00	0.231
It was hard for me to learn to sing songs	2.14	0.974	0.095	2.00	0.405
I had trouble in completing music listening-related tasks	1.67	1.004	0.098	1.00	1.329
I felt the need for the presence of a teacher	2.97	1.130	0.100	3.00	-0.676
I spent much time learning music independently at a distance	2.26	1.111	0.108	2.00	0.265

The students believed that completing the writing tasks was the most challenging part of learning (M=2.36; SD=0.931). If it is difficult for the students to complete the writing tasks independently, they will spend more time for that (r=0.355; p<0.01) and will need assistance from their parents (r=0.331; p<0.01). In turn, if the students had difficulty to sing songs independently, they would have a problem with listening to music and performing the related tasks as well (r=0.381; p<0.01). In addition, they were not provided with the needed technical aids (r=0.430; p<0.01), they spent much time to learn music independently (r=0.355; p<0.01) and needed parents' assistance (r=0.331; p<0.01).

The students thought that the easiest for them was to complete music listening related tasks. It should be noted that the data obtained in this statement are moderately skewed, which indicates that some students were able to perform tasks related to listening to music easy but the other faced lots of difficulties and even they could not cope with the task at all (ME= 1.00; Skewness= 1.329). The study found that if students had problems with completing a task related to listening to music, then they did not spend much time on that and did not ask parents for help. It was because the students have not got the needed technical aids for learning (r=0.316; p<0.01), as well as the fact that they had difficulties with learning other types of musical activities independently.

Most students felt the importance of teacher presence while learning music at a distance (M=2.97; SD=1.130). The presence of the teacher is an important part of the learning process. Distance music learning cannot ensure the physical presence of the teacher, but the students must feel the support of the teacher. B. Meyer and colleagues also believe that independent learning is not only meaning that students are learning alone, but the teacher must promote and support the process of independent learning (Meyer et al., 2008). How can the teacher support and promote students independent learning? In determining the students' opinions about what kind of support from the teacher they need during distance learning, T. Lamb concludes that it is essential for the students that the teacher helps them to understand how to learn independently (Lamb, 2006). The students' attitude towards independent distance learning of music is confused and uncertain (Table 4). The study revealed that some 2nd and 3rd grade students enjoyed learning music independently at a distance, while other students had great difficulty to do that on their own and could not wait to return to school (ME= 1.00; Skewness= 0.591).

Table 4

Students' attitude toward independent distance learning of music

Statements	M	SD	SE	ME	Skewness
I enjoyed learning music independently at a distance	2.10	1.292	0.126	1.00	0.591
I would like to continue distance learning of music independently	2.14	1.274	0.124	2.00	0.466

Those students who enjoyed learning music independently at a distance also wanted to continue that (r=0.685; p<0.01). The students wanted to continue learning music independently at a distance if they could print the learning materials sent by their teacher (r=0.266; p<0.01). The study found that there is a significant difference between the attitude of 2nd and 3rd grade students towards independent and distance learning of music (F=11.12, p=0.001<0.05). The 3rd grade students expressed a more positive attitude towards independent distance learning of music than the 2nd grade students did.

Conclusions

One of the study questions was to find out how independent the students are when they learn music at a distance. Students' independence is important to find the tasks sent by the teacher in the E-class, complete them and send them back to the teacher without asking for assistance from their parents. The study found that students' independence in finding the writing tasks in the E-class and performing them is at a middle level. It was easy for students to learn to sing songs independently and to complete tasks related to listening to music. The students at a high level assessed these types of musical activities. The study revealed that the 3rd grade students learn music more independently than the 2nd grade students. It is possible to conclude that primary school students are not yet fully prepared to learn music independently at a distance. They still have to acquire the skills needed for independent distance learning of music under the guidance of a teacher.

The second study question identified the technical aids used by the students to learn music independently at a distance. The students mostly used computers and mobile phones while learning music at a distance. The majority of students believed that they had a lack of technical aids for learning. Many students were unable to print the writing tasks sent by the teacher as well as they faced difficulties in singing songs and listening to music. It should be concluded that one of the conditions for successful independent distance learning of music is the provision of technical aids.

The third study question recognized the difficulties the students faced in learning music independently at a distance. The students believed that the easiest part of learning was performing tasks related to listening to music. More difficult was to learn singing songs. That was probably due to insufficient singing skills, lack of motivation and shortage of technical aids needed for learning. The students had the most difficulty in completing the writing tasks because the possibility to print them was limited. That, in turn, did not motivate the students to independent distance learning of music. By printing the writing task in music, the students could spend less time to complete it.

The fourth study question determined the students' attitude towards independent distance learning of music. The study concluded that the students assessed their attitude towards learning music independently at a distance at a middle level. Many students missed the teacher's presence and longed for face-to-face music lessons.

The fifth study question tried to find out whether there is a difference between 2nd and 3rd grade students' the independence of learning music at a distance. The study revealed that there is a significant difference between 2nd and 3rd graders in the ability to find the assigned tasks sent by the teacher independently. Moreover, the 3rd grade students would like to learn music at a distance more than the 2nd grader.

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Further Education as an Integrative Pivot of Lifelong Learning

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Abstract: this study is focused on analysing further education as an integrative pivot of lifelong learning. Modern universities are currently undergoing changes in terms of transformation into entrepreneurial units aimed at commercialization of educational services including further educational programs. The topicality of the research is stipulated by the global urge to stay competitive in the saturated educational services market due to the increasing number of institutions both state and private rendering educational services. The aim of the study is to reveal the needs for further education of representatives among young and academic audiences and devise a course syllabus within further educational programs relevant to the detected requirements of potential listeners. The authors put forward a hypothesis suggesting that there are courses whose unique selling points might be attractive to learners. The results obtained through the questionnaires demonstrated that students and academic staff envision an ideal course to meet all their educational needs in a different way which gives momentum to reconsider the format of rendering educational services and recompose further educational programs making them client-friendly in terms of duration, group size, location, range of courses available and flexibility regarding program contents. The results of the study are of significance due to the fact that further educational programs will be far more susceptible to the needs and requirements of the target audience possessing such features as adjustability, flexibility and modularity.

Keywords: further education, lifelong learning, academic community, educational services.

Introduction

Reflecting present-day realities many universities are being transformed into business units aiming at the commercialization of educational services including further education programs within the concept of Lifelong Learning. The concept emerged in 1960s and was in the focus of numerous researchers (Billett, 2018; Cendon, 2018; Formenti, West, 2018; Knapper, Cropley, 2000; Lengrand, 2016; Oliver, 2019; Tight, 2003; Wain, 2016). The central idea behind all these studies was the same: provision of education and training opportunities for every person throughout their lives. M. Tight argues for a rejection of a model of education that is confined to childhood, adolescence and early adulthood (Tight, 2003, 39). Thus, learning is not age-related and a person has got an opportunity to study and acquire the necessary skills to ensure job security and career progress having been aware of the gap between what he knows and what he doesn't know as the motivation to learn through his life (Jarvis, 2007). It's unfeasible to gain all knowledge, skills and competences while studying at school or university, a person needs to continually expand his knowledge, fine-tune his skills and competences through life span development (Sharples, 2000). The International Handbook of Lifelong Learning, edited by D. Aspin, J. Chapman, M. Hatton and Y. Sawano (2001) states that the era of technologies and changeable world gives momentum to people who strive for staying afloat in terms of employability and hence get involved in further education.

It's worth mentioning that the educational services market in Moscow is developing at a steady pace due to the following factors:
- ✔ the concept of Lifelong Learning, which is implemented in continuous education in the form of courses, trainings and workshops.
- ✔ practice-oriented education, which is stipulated by changes in the requirements of employers for the competencies of graduates, who should possess a set of soft skills along with hard ones;
- ✔ the willingness of both parents and students themselves to invest in their further education in terms of learning foreign languages, which will serve as the key to a successful career and will pay off in the short run.

The market for further education services is represented by a wide variety of educational institutions that either fully specialize in providing commercial educational services or this activity is carried out in addition to the core activities, and Plekhanov Russian University of Economics is not an exception.

Further education focuses on meeting educational and professional needs, expanding and updating knowledge and skills in the selected field with no change in the level of education. Further education was reflected in a number of studies (Li, 2014; Alexandrova, Glukhov, 2021; Kireyev, Zhabotynska, 2020; Kovalenko, Kovalenko, 2019; Vaganova et al., 2019).

Further education can be implemented in different forms, both short-term and long-term. Short-term programs are traditionally designed for 16-72 academic hours with a subsequent acquisition of a completion certificate. Long-term programs are normally designed for a long period of study with a subsequent acquisition of a professional retraining diploma in the selected field. Long-term programs are devised for 250-500 academic hours and more. At the end of a long-term program students receive a professional retraining diploma, entitling them to conduct professional activities in the subject area or a diploma with a certain qualification.

According to the Federal State Statistics Service of the Russian Federation in 2018, the number of institutions of further education in Russia exceeded 19000, the majority of which were commercial organizations (85.1 %). Further education services are provided by both organizations specializing in a narrow field, for example, management, marketing and multidisciplinary educational organizations, for example, centres of further education as independent or integrated structures at universities. Further education is becoming increasingly important for those categories who do not work in the specialty they have been trained in, do not have sufficient work experience, but plan future career growth, striving for an extended set of competencies to solve the assigned professional tasks. Regarding foreign language learning the following reasons for further education can be listed.

It should be noted that the command of a foreign language significantly improves the chance of moving up the career ladder and getting a pay rise within the context of market globalization, the integration of foreign companies into the Russian business and the expansion of business contacts of Russian companies abroad.

The mentality of people is being transformed under the influence of the national currency volatility, which leads to people's willingness to invest in further education. This transformation has a scientific basis as education is considered to be the key element of human capital. In the monograph "Social Policy in Human Capital Management" P. Lemanova (2013) states that in 192 countries with transition economies economic growth is stipulated by physical capital, natural capital, human and social capital in the following percentage 16 %, 20 % and 64 % respectively.

S. Dyatlov (2004) claims that human capital is a certain stock of health, knowledge, skills, abilities, motivation accumulated and hence implemented by a person to contribute to the growth of labour productivity and thereby to affect the increase in the income of a given person.

Investments in education are becoming increasingly attractive with the introduction of distance technologies enabling to build your own learning path in a comfortable mode and on the job. Here are the statistics on the number of students in further education programs in Russia in 2014-2018 according to BusinesStat (Table 1).

Table 1

The number of students in further education programs in the Russian Federation in 2014-2018

Year	2014	2015	2016	2017	2018
Number of students, million people	4.37	4.30	5.29	5.33	5.52
% to the previous year	-	-1.6	23.0	0.9	3.4

BusinesStat forsaw the number of students enrolled in further education programs from 2019 to 2023.The data are given in Table 2.

Table 2

The number of students in further education programs in the Russian Federation in 2019-2023

Year	2019	2020	2021	2022	2023
Number of students, million people	5.62	5.71	5.79	5.87	5.92
% on the previous year	1.8	1.7	1.4	1,3	0.9

As it is seen from the table, the number of students involved in further education is steadily rising. This forecast might turn to be less optimistic in reality, given the worsening epidemiological situation in the Russian Federation and a decrease in real income of the population.

Furthermore, modern universities tend towards commercialization of education, which means that they have to make educational programs available on the market. This very fact highlights an irrefutable issue on further educational programs re-composition that will meet and even exceed the divergent needs of academic community and university youth expanding the prospects for being involved in the act of learning throughout life.

The aim of the study is to analyse the demand for further educational services in terms of foreign languages and to specify the marketable features of the further educational programs offered to the public.

Methodology

To fulfil the stated aim the following tasks were defined: to perform a theoretical analysis to back up practical findings; to interpret of the results obtained through the poll, and to determine the further educational programs' parameters appealing to the potential listeners among young and academic audiences.

The authors of the research paper put forward a hypothesis suggesting that there are foreign language courses with pre-set parameters targeted at certain clients which are able to successfully compete in the market of further educational services and provide a stable increase in learners' number.

The authors formulated research questions which provide an insight into the analysis of supply and demand on the market of further educational services in terms of specialized courses of foreign languages, format of educational services rendered in terms of duration, choice among 'brick-and-mortar', 'click-and-mortar' or online, group size, range of courses (general, business, field-specific), flexibility regarding program contents. The research questions were framed as follows:
1) What are the needs of young learners in terms of further education?
2) What are the needs of representatives of the academic community in terms of further education?

To collect precise data on the abovementioned research questions the authors worded sub questions clarifying the enquiry:
3) Which format (face-to-face, online, mixed) of classes is the most preferable?
4) Which course duration (3-24 months) is considered to be the most effective for language learning?
5) What is the number of students in the group (8-14 students) most comfortable to interact?
6) Would you choose the possibility to select modules of the course (yes, no)?
7) What are the preferences in choosing the language course (field-specific or general)?
8) What are the preferences in choosing courses location (in-house or outside)?

It should be noted that both groups of participants were asked the same sub questions.

Participants. The research involved two groups of participants. The first group was represented by university youth (363 students in total from three different institutions of higher education: Plekhanov Russian University of Economics, RUDN University, The Russian Presidential Academy of National Economy and Public Administration, Mdn age – 21). The second group was represented by the academic community (45 participants particularly heads of different structural divisions of Plekhanov Russian University of Economics, Mdn age – 38).

The participants were thoroughly informed about the purpose of the research and voluntarily took part in it.

Methods. To achieve the aim of the study, the researchers' team used a fusion of methods such as Qualitative and Quantitative data analysis:

1) Qualitative data analysis includes: online interviews with open-ended questions to collect opinions of respondents represented by students' and academic community; participant observation.
2) Quantitative data analysis includes: online poll with restricted questions via ENQ (Educational Needs Questionnaire) to identify educational preferences of potential listeners.

ENQ is designed to investigate the learning needs and preferences of the target audience and bridge the gap between what exists and what is expected. ENQ enables to conduct a needs analysis which is meant to specify the parameters of a course including course syllabus, the selection and sequencing of course content, course duration and intensity (Nunan, 2013; Sönmez, 2019).

Procedure. The research incorporates two stages: the first stage focuses on the student audience, the second stage embraces the academic community, specifically teaching staff and employees. The authors conducted needs analysis the goal of which was "to determine the current and the desired performance" (Biech, 2005, 51).

Results and Discussion

As mentioned previously, the authors formulated the research questions and made an attempt to shed light on each of them during the study. The first research question implicates student-based studies aimed at identification of educational needs among a young audience.

According to the first research subquestion, the authors set themselves the task to find out which format of training is preferable for learners. The respondents had to weigh in on face-to-face, mixed, and purely online formats. The results are represented below.
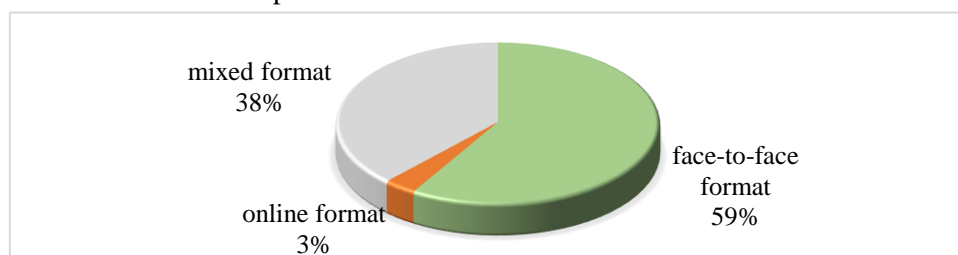
Figure 1. The format of training for continuing education programs.

The presented figure (Figure 1) demonstrates the proportion of learners distributed by format. 213 respondents supported the face-to-face format, 138 respondents would prefer a mixed learning format and only 12 respondents chose the online format.

According to the second research subquestion, the respondents were asked to provide their opinion regarding the duration of courses ranging between 3 and 24 months (Figure 2).
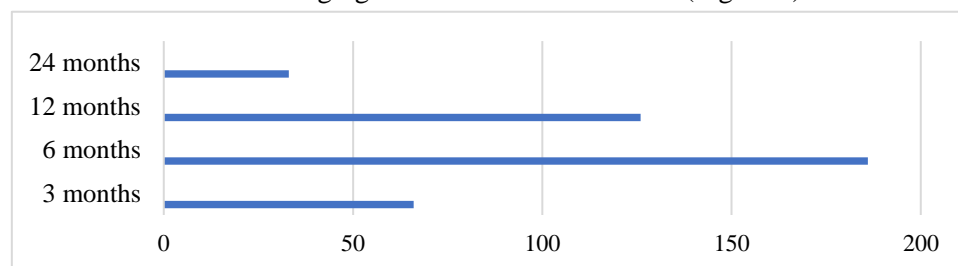
Figure 2. Course duration.

The most attractive was the course lasting 6 months (186 people), this was followed by the 12 months option (126 people), 3 months and 24 months courses were selected by 66 and 33 respondents respectively. It should be noted that the calculation took into account the answers where the respondent demonstrated hesitance and gave two options (the most frequent - 3/6 months, 6/12 months). Three respondents preferred not to answer.

According to the third research sub question, the authors aimed at identifying the preferable group size in terms of the number of learners (Figure 3).
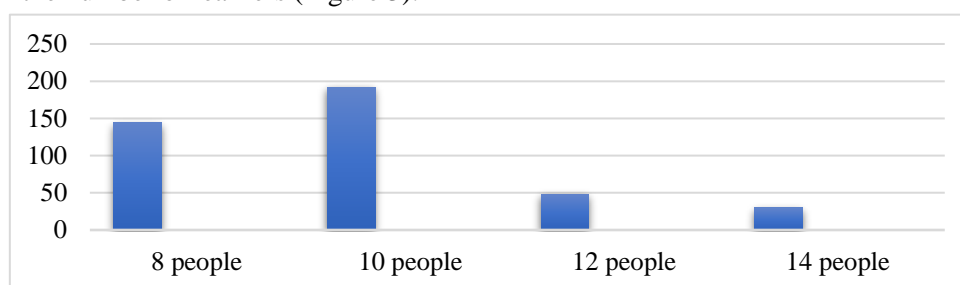
Figure 3. The number of students in the group.

The absolute leader was the answer "10 people" (192 votes), 144 votes came to the option "8 people", the least interesting options seemed to be "12 people" (48 votes) and "14 people" (30 votes) correspondingly. It should be mentioned that dual answers ("8/10 people in the group" – 42 respondents, "10/12 people in the group" – 18 respondents) were taken into consideration as well. 9 respondents held back and gave no answer.

Reflecting upon the fourth research sub question regarding opportunities for module selection within the course (Figure 4) the overwhelming majority of participants responded positively (327 votes), whereas only 7 participants reacted negatively. 29 respondents could not provide any feedback.

According to the fifth research sub-question, when choosing between language courses "General" and "Field specific" (Figure 5) the majority of the respondents gave preference to the field-specific course which accounted for approximately 58 % (210 votes). 152 respondents showed an interest in the "General" option (roughly 42 %). The remaining 1 respondent showed no enthusiasm towards the provided options.
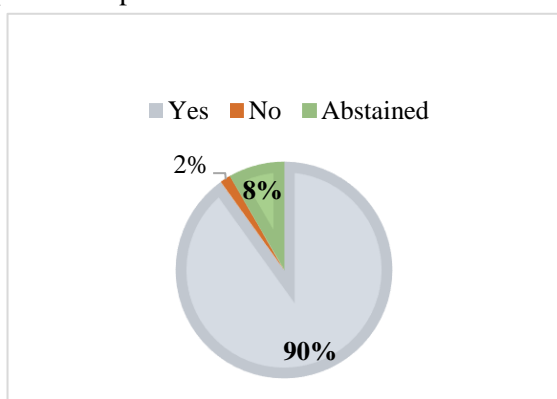
Figure 4. Ability to select modules in the course.
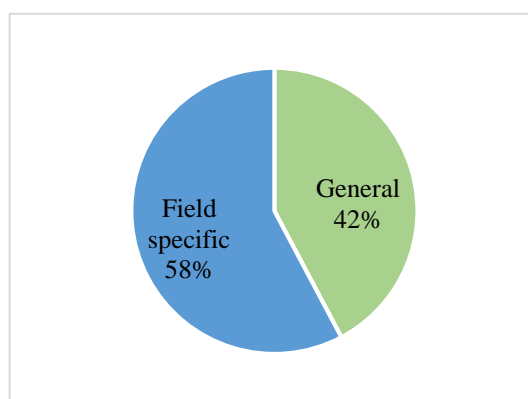
Figure 5. Preference when choosing a language course.

It should be noted that Business English course did not generate interest from the student audience. The experience of teaching English at a university shows that in most cases students master business terminology during the period of study, however, to build a reasoned and coherent written and spoken language, they lack a general spoken thesaurus.

As regards the sixth research sub question (Figure 6), most of the respondents went for the option "At the university (in-house)" – 326 votes, 36 votes came to the option "Outside the university" and only one person gave no answer.
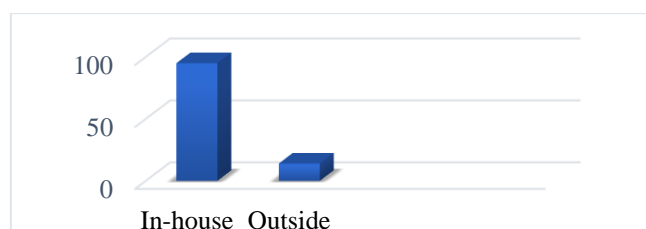
Figure 6. Preferences for courses location.

At the second stage, a survey was conducted among the heads of structural divisions of PRUE. The second research question implies staff-based studies focused on revealing educational needs. Reflecting upon the format of further education programs for teaching staff and employees (Figure 7) the respondents prioritized the given options in the following order: face-to-face format (73 %- 33 votes), mixed format (20 %- 9 votes), online format (7 % - 3 votes).
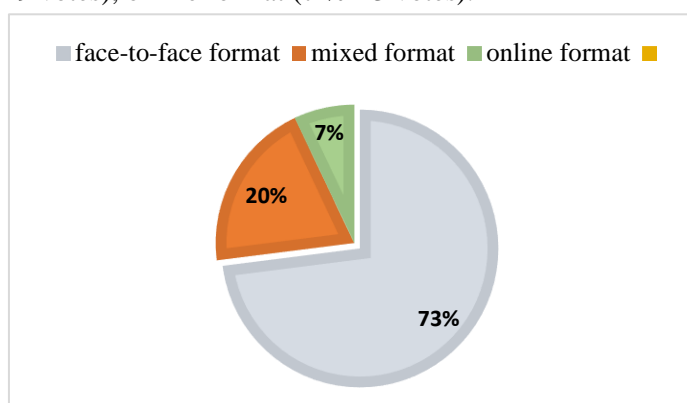
Figure 7. The format of training employees for further professional education programs.

Regarding the course duration for employees (Figure 8) the largest number of respondents (30 votes) opted for a course up to 3 months, while the rest of the votes (15 respondents) were distributed relatively evenly among the remaining options (6 months, 12 months, 24 months). As to the selection of modules within the course (Figure 9) the overwhelming majority of respondents (44 votes) consider it necessary to provide learners with such an opportunity. Only one respondent answered negatively.
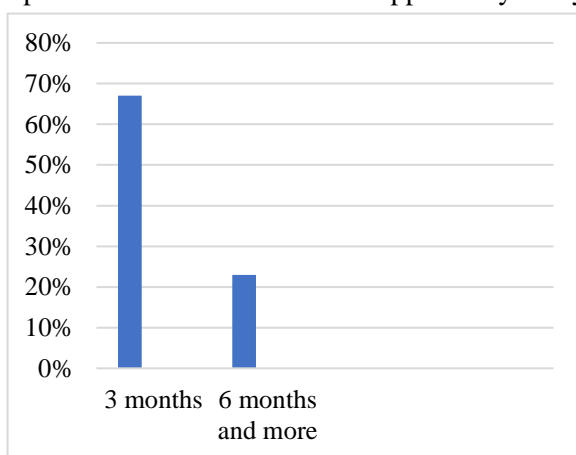
Figure 8. Course duration for employees.
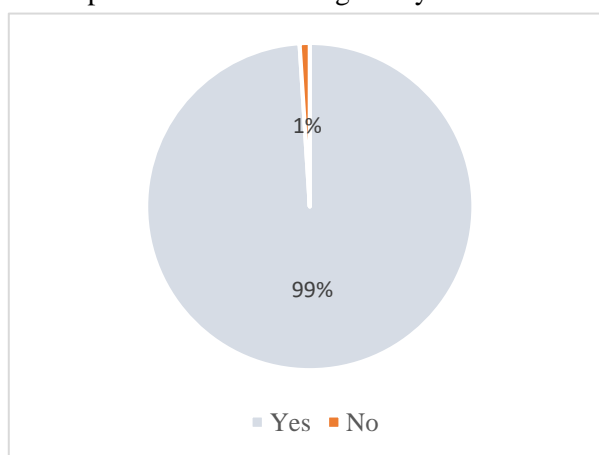
Figure 9. Ability to select modules in the course.

When choosing among General, Business and Field-specific courses (Figure 10), the respondents gave a majority of votes to the option "General" (93 %), whereas Business and field – specific courses were not of much interest to the poll participants (5 % and 2 %, respectively).

Regarding the location of courses (Figure 11) on the job training got near-unanimous approval among representatives of the academic community.
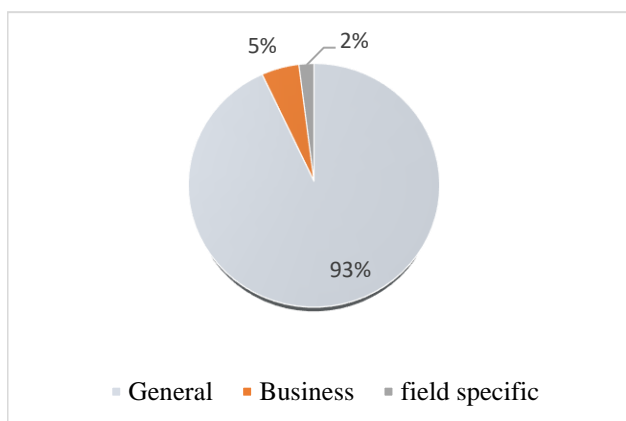
Figure 10. Preferences when choosing a language course.
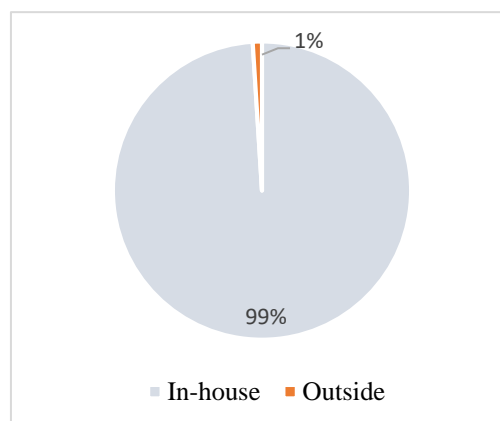
Figure 11. Preferences for course location.

In Plekhanov Russian University of Economics, there is a rating system for structural divisions, which takes into account the number of employees who give lectures in a foreign language. In this regard, the heads of structural divisions are interested in teaching a foreign language to employees. The heads of the structural divisions identified two pools of teachers: teachers who have already taught in a foreign language and teachers who are potentially able to give a lecture in front of a foreign language audience, but they lack general vocabulary. Many teachers note that they know field-specific terminology at a sufficient level, but they lack a general colloquial vocabulary for spontaneous discussion and answers to audience questions.

Conclusions

The research has indicated that the hypothesis was fully confirmed. Registered findings demonstrate a surge in interest among potential learners towards a suite of short-term and medium-term programs with a duration of up to 3 and 6 months respectively which are highly likely to become the most sought-after product on the market of further educational services specifically in the field of foreign language learning. To hit planned target indicators of further educational programs' realization it is pivotal to devise unique programs that will allow to take a competitive advantage on the market, taking into consideration that the market of further educational services in the field of foreign language teaching can be defined as saturated. Furthermore, the market itself requires the launch of such educational products which are far beyond the plain catering to the basic educational needs of potential consumers. The research findings and their analysis allowed to identify the main trends in the development of the further educational services market and to delineate a must-be-targeted market segment.

Given the current epidemiological situation, it would be advisable to offer programs in multiformat training: face-to-face, mixed or online. Moreover, the results of the survey clearly showed that the possibility of an optional choice of modules appeared to be alluring for the listeners. A personalized approach to foreign language teaching would ensure the repletion of their individual needs and wants. Moreover, it would be paramount importance to receive snapshot feedback from the learners via surveys or anonymous questionnaires to make amendments into the programs.

The reliability and validity of the data obtained are endorsed by a significant number of interviewees among students and academic staff. Thus, the recomposition of the product line of the Department of Foreign Languages No. 2 will open the floodgates to the brand-new programs to be relaunched in the further educational services market and predictably provide a multiple intake of students' numbers.

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Measuring the Affective and Cognitive Bases of Implicit and Explicit Attitudes Towards Domestic and Foreign Food Brands

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Abstract: The problem of accounting automatic affective and cognitive processes as bases for implicit attitudes towards brands, as well as methods for measuring them, is poorly developed. An analysis of previous research shows that the study of attitudes towards brands in terms of their affective and cognitive components is mainly carried out using self-assessment procedures. The aim of this research is to measure the affective and cognitive bases of implicit and explicit attitudes towards brands of domestic and foreign foods. Participants $N = 131$, aged 17-57 ($Mdn = 31$). Measures: specifically designed methodically balanced procedures for measuring implicit and explicit attitudes towards food brands: affective and cognitive implicit associative tests (IAT), Self-Concept IAT; emotional and cognitive explicit procedures and demographic questionnaires. The consistency of the results of implicit and explicit measurements is shown. The results of the measurements of implicit attitudes using three IAT procedures are related too. Using factor analysis, the independence of the constructs of explicit and implicit attitudes towards brands was confirmed, which is interpreted in terms of the theory of double attitudes. The greatest contribution to the implicit attitude, measured by the Self-concept IAT, is made by the cognitive component of attitude, which represents the implicit brand associations of domestic or foreign foods with attributes that characterize the price and quality of the foods. All implicit assessments obtained separately using the affective and cognitive procedures of the IAT, as well as the Self-concept IAT, testified in favour of the preference for foods of domestic brands. However, explicit assessments of the frequency of consumption of the brands under consideration did not reveal preferences for any of them. This discrepancy is seen not only as evidence of a possible ambivalent interaction between affective and cognitive associations, but also as an indication of the importance of future measurements of implicit assessments of instrumental associations that are the result of instrumental learning from consumers. This has the potential to improve the predictive validity of implicit measurements of brand attitudes and to better understand the structure of implicit consumer attitudes and the mechanisms of their influence on behaviour.

Keywords: implicit and explicit attitudes towards brand, implicit associative test, attitude's affective and cognitive base, overall attitude, consumer psychology.

Introduction

The importance of studying consumer attitudes (attitudes towards brands or brand attitudes) lies in the fact that they influence consumer behaviour. Consumer behaviour is highly dependent on both automatic, unconscious cognitive processes and controlled, conscious ones (Perkins, Forehand, 2010; Dimofte, 2010). Accounting of the automatic affective and semantic (cognitive) processes underlying consumer attitudes will contribute to a deeper understanding of how the general representation of attitudes is formed. There is the problem of measuring the affective and cognitive aspects of the explicit and implicit of brand attitudes using direct and indirect measurements.

The modern conceptualization of the attitude is that it represents an overall assessment of an object based on cognitive, affective and behavioural information (Eagly, Chaiken, 1993; Maio, Haddock, Verplanken, 2018). This definition presupposes three substantive components of the attitude, which make up a generalized assessment of the attitude and indicate its general structure.

Implicit and Explicit Attitudes

In the literature devoted to the issue of studying attitudes, there is a lot of controversy regarding the understanding of the concept of attitudes and the theoretical models that explain their nature. Basically, theoretical models present implicit and explicit attitudes as two qualitatively different ways of cognitive

information processing (Devine, 1989; Fazio, 1990; Fazio, 1995; Gawronski, Bodenhausen, 2006; Greenwald, Banaji, 1995; Smith, DeCoster, 2000; Strack, Deutsch, 2004; Chaiken, Trope, 1999).

One of them is associative, based on associations of similarity, contiguity and space and time, while the other, a propositional process, operates on the basis of logical analysis and reasoning (Gawronski, Bodenhausen, 2006; Payne, Gawronski, 2010).

It is generally accepted that both explicit and implicit attitudes can be viewed as a result of the learning process. An individual, colliding with objects of the surrounding world, forms an attitude towards them based on the experience of subject-object interactions at the behavioural, cognitive and/or affective level. The results of this interaction are recorded in memory, in the form of assessments of the properties of objects that differ in content and level of generalization, i.e., are the product of explicit or implicit learning (Plotka, Igonin, Blumenau, 2016).

In traditional theories of human learning, the dual nature of its mechanisms is noted. Both mechanisms correspond to two independent and competing systems – associative and propositional. Associations and propositions, as forms of knowledge, differ in the ways of mental representations as well as the conditions under which they are activated and guide behaviour (Mitchell, De Houwer, Lovibond, 2009). These views have contributed to the theoretical understanding of the concept of attitude. Implicit attitudes are viewed primarily as the result of associative processes, and explicit attitudes as propositional (Payne, Gawronski, 2010; Plotka, Igonin, Blumenau, 2016). The process of attitude actualization may require volitional efforts and be conscious, controlled, or, on the contrary, be spontaneous, unconscious or automatic. In the first case, we are talking about explicit attitudes, and in the second – about implicit ones.

R.H. Fazio defined implicit attitudes as "object-evaluation associations in memory" (Fazio, 1995, 247). This understanding of attitude points to associations as a mechanism for the formation of attitudes, and to memory as a storage system for mental representations of attitudes.

Associative assessment (implicit attitudes), in the opinion of some representatives of traditional two-process models, is best characterized as automatic affective reactions resulting from the automatic activation of certain associations when one encounters a corresponding relevant stimulus (Gawronski, Bodenhausen, 2006). Such activation processes do not require much cognitive capacity or intention to evaluate an object (Cunningham, Raye, Johnson, 2004).

Further development of knowledge about traditional two-process models, implicit processes, implicit attitudes in social cognition, was due to the achievements in cognitive neuroscience, in particular, the development of the Memory Systems Model (MSM) (Amodio, Mendoza, 2010; Amodio, Ratner, 2011; Amodio, 2019).

Affective and Cognitive Aspects of Implicit Attitude

Some scholars note that the classical Dual-Process Models consider implicit social processes as single-system models of associations among concepts. However, these models do not take into account the entire range of implicit social processes associated with behaviour.

However, the emergence of the MSM model that includes many forms of learning and memory associated with various neural substrates, systems of perception and behaviour (and connections with perceptual and behavioural systems) further influenced a different understanding of implicit social processes (Amodio, Mendoza, 2010; Amodio, 2019).

The MSM model differs in its implicit processing mode from traditional two-process models based on automatic and controlled processes. According to the MSM, implicit processes represent multiple systems representations of associative knowledge, while dual-process models reflect single-system of representations of associative knowledge (Amodio, Ratner, 2011; Amodio, 2019).

Investigating intergroup implicit attitudes (implicit bias) based on the MSM approach (Amodio, Harmon-Jones, Devine, 2003; Amodio, Devine, 2006; Amodio, 2008), researchers found that affective forms of implicit bias correspond to affective forms of learning and memory, which are supported by the amygdala and the associated subcortical circuitry. In contrast, implicit stereotyping reflects semantic associations that correspond to conceptual forms of learning and memory and related areas of the neocortex, such as the left prefrontal cortex (Amodio, Mendoza, 2010). According to MSM, implicit

assessment (attitudes) can "reflect a combination of affective and semantic (i.e., cognitive) associations". As the researchers note, "MSM will become more common as the field of psychology becomes increasingly interdisciplinary" (Amodio, Mendoza, 2010, 367).

The theoretical implementation of the above stated thesis (on the difference between the affective and cognitive bases of implicit attitudes) will be reflected in our study, which is aimed at studying the cognitive and affective aspects of implicit attitudes toward brand.

Attitude towards Food Brand and Methods of its Measurement

The traditional methods for measuring attitudes are explicit methods. Explicit methods are direct, controlled and conscious (Petty, Fazio, Brinol, 2009).

Traditionally, consumer attitude was conceptualized as a uni-dimensional construct reflecting one's general evaluation of an object (Bagozzi, Burnkrant, 1980; Fishbein, Ajzen, 1975) and is measured using different self-assessment procedures, including different Likert scales (Likert, 1932), semantic differential (Osgood, Suci, Tannenbaum, 1957).

Scientists have identified two aspects of the formation of attitudes towards brands and foods: affective and cognitive (Batra, Ahtola, 1990; Crowley, Spangenberg, Hughes, 1992; Herz, Diamantopoulos, 2013; Voss, Spangenberg, Grohmann, 2003; Crites, Fabrigar, Petty, 1994).

In relation to consumer attitudes, studies by R. Batra and O.T. Ahtola (1990) are often cited. These scholars, citing their predecessors (Holbrook, Hirschman, 1982; Millar, Tesser, 1986; Triandis, 1977), used the idea that consumer attitudes are inherently bidimensional since consumers satisfy both their hedonistic (affective) and utilitarian (cognitive) needs. This thesis has been tested empirically using two measuring scales of semantic differential: hedonistic (affective) and utilitarian (cognitive) to assess overall attitudes subdimensions (Batra, Ahtola, 1990). For example, researchers showed that implicit attitudes towards a country can automatically influence a consumer's cognitive and affective brand perception (Herz, Diamantopoulos, 2013).

Implicit Measurements of Attitudes towards Brands

Well-known experts believe that implicit measures are an important and promising methodological tool, since, to make a consumer choice, it is not enough to take into account only conscious and deliberate processing of information (Dimofte, 2010; Dijksterhuis et al., 2005).

Implicit measures are indirect, automatic, unconscious (Petty, Fazio, Brinol, 2009), and are based on measuring the reaction time of participants whose attention is focused on completing tasks, rather than on the object of attitude (Rudman, 2011).

Implicit measures have a number of advantages over self-assessment procedures, since when performing self-assessment procedures, an individual may either not be aware of his or her opinion of the object of attitude or may not want to express it publicly (Greenwald, Banaji, 1995). Researchers recognize that implicit measurements do not replace but complement the results obtained by explicit measurements (Dimofte, 2010; Dijksterhuis et al., 2005).

The Implicit Association Test (IAT) is most commonly used for measuring consumer attitudes (Schnabel, Asendorpf, Greenwald, 2008; Greenwald et al., 2009; Maison, Greenwald, Bruin, 2004; Friese, Wänke, Plessner, 2006; Priluck, Till, 2010; Dimofte, Yalch, 2011).

Conformity of Explicit and Implicit Measurements

It should be noted that one of the most important issues in implicit social cognition is the problem of the relationship between explicit and implicit measurements. As the researchers point out, implicit measurements of attitudes (in particular, consumer attitudes) show different results compared to self-assessment procedures.

The results of the meta-analysis show that the relationship between explicit and implicit measurements is often insignificant compared to "sensitive attitudes" such as ethnic ones, towards violence, towards alcohol. However, consumer attitudes studies have shown a higher correlation between implicit and explicit measurements (Greenwald et al., 2009; Perkins et al., 2008).

Notwithstanding that some researchers question the additional value of implicit measures, the growing number of implicit measurements of brand attitudes refutes this claim (Maison, Greenwald, Bruin, 2001, 2004; Perkins, Forehand, 2010; Schnabel, Asendorpf, Greenwald, 2008; Dimofte, 2010; Maison, Gregg, 2016; Plotka, Urbane, Blumenau, 2015).

Researchers, while studying brand attitudes using the experimental IAT procedure, have generally measured the "undivided" automatic associations as the base of implicit brand attitudes (Maison, Greenwald, Bruin, 2001, 2004. Perkins et al., 2008; Brunel, Tietje, Greenwald, 2004; Dimofte, Johansson, Ronkainen, 2008; Priluck, Till, 2010; Dimofte, Johansson, Bagozzi, 2010; Bosshard et al., 2016; Maison, Maliszewski, 2016).

Thanks to modern advances in cognitive neuroscience in implicit social cognition, it is possible to measure both automatic affective and automatic semantic associations, which are the bases of implicit consumer attitudes (Amodio, Mendoza, 2010). The above conceptualization of implicit brand attitudes has only been applied in some studies of brand and product attitudes (Trendel, Werle, 2015; Sarabia-Andreu, Sarabia-Sánchez, Moreno-Albaladejo, 2019). For example, O. Trendel and C.O.C. Werle (2015), in their empirical study, proved that the affective and cognitive bases of implicit attitudes are different structures that independently form an overall implicit attitude toward food. Moreover, each of the bases of the implicit attitude specifically affects the choice of products (food) in certain conditions.

The deeper understanding of the implicit attitude as a two-dimensional structure based on a set of automatic emotional and semantic associations has provided new substantiated opportunities for constructing original versions of the affective IAT, cognitive IAT and Self-Concept IAT (overall) towards the brands of Latvian and foreign foods and the corresponding explicit measuring procedures: affective and cognitive.

The aim of this research is to measure the affective and cognitive bases of implicit and explicit attitudes towards brands of domestic and foreign foods.

Methodology

The research questions are as follows:

1. Is there a correspondence between the results of implicit and explicit measurements of attitudes towards Latvian or foreign brand foods, measured using the IAT experimental procedures and self-assessment procedures?

2. Is there a relationship between the results of measurements of implicit preferences for brands of Latvian or foreign foods obtained using the affective IAT, cognitive IAT and Self-Concept IAT?

3. Are the results of implicit measurements and explicit measurements independent from each other?

4. What contribution to the implicit attitude, measured with Self-Concept IAT, is made by the emotional and cognitive bases of attitude, measured using the affective IAT, cognitive IAT?

5. How are consumers who demonstrate explicit and implicit preferences for (I) Latvian food brands, (II) foreign food brands and (III) with no preference effect (ambivalent or unexpressed) distributed and how do the results of measurements of explicit attitudes towards food according to the demographic questionnaire relate to each other?

Participants: $N = 131$, aged 17-57 years (*Mdn* = 31, *M* = 31.6, *SD* = 9.30). Male – 42, female – 89, students and graduate students.

Measures

Implicit Association Tests

Two-category Affective and Cognitive Implicit Association Tests (IATs) were designed according to the classic two-category IAT (Greenwald, McGhee, Schwartz, 1998).
- Affective IAT measures the automatic affective associations of Latvian and foreign food brands with attributes having positive or negative valence.
- Cognitive IAT measures the automatic semantic (cognitive) associations of Latvian and foreign food brands with attributes that characterize the price and quality of foods.

Two-category Self-Concept IAT based on (Greenwald, Farnham, 2000).

- <u>Self-Concept IAT</u> measures automatic associations between categories: "Self" (Me, I, Self, My) and "Others" (Own, Others, They, Them, Your, You) and attributes characterizing Latvian or foreign food brands.

Explicit Procedures

The basis for the development of self-assessment procedures was the use of some aspects of C.E. Osgood's concept of semantic differential, as well as ideas of modern scholars who applied it to study attitudes toward brands of various food categories (Osgood, Suci, Tannenbaum, 1957; Batra, Ahtola, 1990; Crites, Fabrigar, Petty, 1994; Crowley, Spangenberg, Hughes, 1992; Herz, Diamantopoulos, 2013; Sarabia-Andreu, Sarabia-Sánchez, Moreno-Albaladejo, 2019).

- <u>Affective Explicit Procedure</u> (AEP) measures the explicit preferences of Latvian or foreign food brands, which are based on the assessment of bipolar adjectives characterizing the affective properties of perception of these food brands.
- <u>Cognitive Explicit Procedure</u> (CEP) measures the explicit preferences of Latvian or foreign food brands based on the assessment of bipolar adjectives characterizing the perception of the price and quality of the brands of these foods.

Methodological Balance of Implicit and Explicit Procedures

The main principle of developing implicit and explicit measuring procedures was their methodological balance, both in the selection of identical Latvian and foreign brands (visual stimuli) and verbal stimuli (adjectives), which are attributes in the affective and cognitive IAT.

- Affective IAT: categories – visual stimuli (Figure 1), attributes – affective verbal stimuli (Table 1).
- Cognitive IAT: categories – visual stimuli (Figure 1), attributes – cognitive verbal stimuli (Table 1).
- Affective Explicit Procedure (AED): visual stimuli (Figure 1), affective verbal stimuli (Table 1).
- Cognitive Explicit Procedure (CEP): visual stimuli (Figure 1), cognitive verbal stimuli (Table 1).
- Self-concept IAT: categories – Self, Others, attributes – visual stimuli (Figure 1).

Figure 1. Visual stimuli.

<u>Visual stimuli</u> (Figure 1). The brands of Latvian and foreign foods were selected based on the results of interviews with representatives of supermarkets, who reported on the most popular categories of foods that consumers most often use in the Latvian market. To prevent the participants from focusing on only one category of food brands, the experiment included brands of Latvian and foreign foods from different categories (yoghurts, chocolate, juices, ketchup, mineral water, chips). Visual stimuli (product brands) were selected for similarity, size, visual complexity and image resolution (Rothermund, Wentura, 2004). 12 visual stimuli contain 6 images of Latvian food brands (chips "Ādažu čipsi"; mineral water "Mangaļu ūdens"; juice "Cido"; ketchup "Spilva"; chocolate "Laima", yogurt "Kārums") and 6 images with brands of foreign foods (chips "Ekstrella"; mineral water "EVIAN", juice "TYMBARK"; ketchup "Heinz"; chocolate "Karl Fazer", yogurt "ACTIVIA"). Visual stimuli were colour images.

Verbal stimuli (Table 1). The basis for the development of self-assessment procedures was the use of some aspects of the concept of semantic differential (Osgood, Suci, Tannenbaum, 1957), as well as the ideas of modern scholars who applied this concept to study the attitudes to brands and goods, both in hedonic and utilitarian aspects (Batra, Ahtola, 1990; Crites, Fabrigar, Petty, 1994; Crowley, Spangenberg, Hughes, 1992; Herz, Diamantopoulos, 2013; Sarabia-Andreu, Sarabia-Sánchez, Moreno-Albaladejo, 2019). The selection of attributive bipolar adjectives was based on the consideration of the two factors "Assessment" and "Strength" of C.E. Osgood's concept (Osgood, Suci, Tannenbaum, 1957).

Table 1

Verbal stimuli: bipolar adjectives

Adjectives	Positive	Negative
Affective	pleasant, alive, fancied, aromatic, tasty, healthy	unpleasant, dead, disgusting, smell, not tasty, unhealthy
Cognitive	economical, profitable, convenient, effective, natural, safe	uneconomical, unprofitable, inconvenient, ineffective, chemical, unsafe

For affective bipolar adjectives: the "Assessment" factor corresponds to pairs: pleasant / unpleasant, fancied / disgusting, aromatic / smelly, tasty / tasteless, and the "Strength" factor corresponds to bipolar adjectives: healthy / unhealthy, alive / dead.

For cognitive bipolar adjectives: the "Assessment" factor corresponds to the pairs: economical / uneconomical, profitable / disadvantageous, effective / ineffective, convenient / inconvenient, and the "Strength" factor corresponds to bipolar adjectives: natural / chemical, safe / unsafe.

We also found similar adjectives in studies measuring the affective component of brand attitudes: pleasant / unpleasant, nice / awful (Batra, Ahtola, 1990), pleasant / unpleasant, love / hateful (Crites, Fabrigar, Petty, 1994); pleasant / unpleasant, nice / awful (Crowley, Spangenberg, Hughes, 1992); beneficial / harmful (Sarabia-Andreu, Sarabia-Sánchez, Moreno-Albaladejo, 2019); tasty / untasty (Trendel, Werle, 2015); aromatic / stinky, alive – dead (Dalton et al., 2008). In studies that measure the cognitive component of brand attitudes: beneficial / harmful (Batra, Ahtola, 1990); safe / unsafe (Crites, Fabrigar, Petty, 1994); effective / ineffective (Voss, Spangenberg, Grohmann, 2003); natural / chemical, safe / dangerous (Dalton et al., 2008); beneficial / harmful (Crowley, Spangenberg, Hughes, 1992).

Questionnaires

- A specifically developed a preliminary questionnaire, the purpose of which was to find out how familiar the research participants are with the logos of Latvian and foreign brands and their foods.

- A specifically developed a demographic questionnaire, the purpose of which was to find out gender, age, marital status, education, occupation, income per family member per month (gross, euros) and attitudes towards Latvian and foreign food brands that participants use daily.

IAT Experimental Procedures

The experimental procedures for the affective and cognitive IATs are shown in Table 2. The experimental procedure for the Self-Concept IAT is shown in Table 3.

Each of the three experimental IAT procedures (Affective, Cognitive and Self-Concept) has seven blocks. Before the start of the experiment on a computer monitor in each of the three IAT procedures, the participant was given general instructions and specific instructions before each of the blocks. The instructions were written in black letters on a white background and positioned in the centre of the screen. Each sentence began on a new line. Each target attribute appeared cantered on the screen. All stimulus words are represented by lowercase letters. The participants' task was to categorize the stimuli presented. The stimuli were displayed on the screen without sound and remained on the screen until the participant pressed the key. One IAT procedure took on average 20 to 25 minutes. The participant's reaction time (RT) was recorded. For each trial, RT was recorded as the time interval between the start of the presentation of the target attribute and the pressing of the correct key. The stimuli were presented at random. With the correct categorization, the subsequent visual and verbal stimulus appeared on the screen after 400 ms. In case of incorrect categorization, a red cross appears on the screen, which automatically

disappears. Time of stimulus presentation, intervals between stimuli, number of stimuli – words, font and colour background settings did not change. Before data processing, trials with latencies over 5000 ms were deleted. Also excluded were those participants with more than 10% of trials showing latencies less than 300 ms. *D-scores* were used as the size of the IAT effect, the calculation of which was performed in a standard way, which is described, for example, in the book by L.A. Rudman (2011).

Table 2

Affective and cognitive IAT procedures

Block	Trials	Function	Left-key response "Q"	Right- key response "P"
1	24	Practice	LAT (v)	F (v)
2	24	Practice	Positive (a)	Negative (a)
3	48	Test	LAT (v)+Negative (a)	F (v)+Positive (a)
4	48	Test	LAT (v)+ Negative (a)	F (v)+ Positive (a)
5	24	Practice	F (v)	LAT (v)
6	48	Test	F (v)+Negative (a)	LAT (v)+ Positive (a)
7	48	Test	F (v)+Negative (a)	LAT (v)+ Positive (a)

Note. *v – visual category, a* – adjectives. *LAT – Latvian Brand, F – Foreign Brand.*

Table 3

Self-Concept IAT

Block	Trials	Function	Left-key response "Q"	Right- key response "P"
1	10	Practice	Others (w)	Self (w)
2	15	Practice	F (v)	LAT (v)
3	40	Test	Others (w) +F (v)	Self (w) +LAT (v)
4	45	Test	Others (w) +F (v)	Self (w) +LAT (v)
5	20	Practice	I (w)	Not I (w)
6	40	Test	Self (w) +F (v)	Others (w) +LAT (v)
7	45	Test	Self (w) +F (v)	Others (w) +LAT (v)

Note.Target categories (verbal stimuli, w): Me, I, Self, My, Own, Others, They, Them, Your, You. Target attributes v – visual stimuli.

Affective and Cognitive Explicit Procedures

Affective Explicit Procedure (AEP) and Cognitive Explicit Procedure (CEP) have the same visual stimuli (Figure 1) and different sets of verbal stimuli – adjectives (Table 1). Each of the self-assessment procedures includes 12 questionnaires – according to the number of corresponding adjectives. Each questionnaire contains one adjective from the corresponding column of Table 1 and six pairs of food brands – one Latvian food brand and one foreign food brand. An example of a questionnaire with the adjective "tasty" for the AEP procedure is shown in Table 4.

Instructions to the participant. "Dear participant! Your task is to assess your attitude towards Latvian or foreign food brands by associating them with the specified adjective, for example, "tasty". For each of the pairs of foods of the Latvian and foreign brands, you need to select only one number that corresponds to your assessment and put it in a circle. The numbers "3", "2", "1", "0" on the left refer to brands of Latvian foods. The numbers "0 ", "1", "2", "3" on the right refer to brands of foreign foods. Scores denote brand compliance with the specified adjectives "3" – great match, "2" – medium match, "1" – small match, "0" – I don't know or no match.

Processing of questionnaires. Scores "3", "2", "1", "0", "1", "2", "3" are converted as follows. For "good adjectives": "7", "6", "5", "4", "3", "2", "1" and for "bad adjectives": "1", "2", "3", "4", "5", "6", "7". For each participant, the scores for all words are summed up and divided by 72, since there are 12 adjectives and six pairs of brands: 6 x 12 = 72. The result of the division is called the *E-score*.

Interpretation. Based on the results of the explicit tests, it is possible to determine the explicit preferences of the participant's brands. The main idea of determining preference is shown in Table 5. This table is

a fragment of a large table, which presents all possible ratings of participants for one of six pairs of brands: Latvian – LV and foreign – F, and for one of six pairs of opposite adjectives: "delicious – tasteless". Table 5 shows seven cases out of 46. Based on the analysis of all cases, it was decided to accept the following interpretation for the *E-scores*.

Table 4

Affective explicit procedure questionnaire. Adjective: "Delicious"

Latvian brand foods	Assessment	Foreign brand foods
	3 2 1 0 1 2 3	
	3 2 1 0 1 2 3	
	3 2 1 0 1 2 3	
	3 2 1 0 1 2 3	
	3 2 1 0 1 2 3	
	3 2 1 0 1 2 3	

E-scores ≥ 4.5 correspond to the explicit preferences of Latvian foods. *E-scores* ≤ 3.5 correspond to the explicit preferences of foreign brand foods. 3.5 < *E-scores* < 4.5 correspond to the absence of the effect of explicit preferences of foreign or Latvian brand foods. *Note*: Explicit preferences: affective for the AEP test and cognitive for the CEP test.

The internal consistency index of the AEP of the Cronbach's Alpha test is $\alpha = 0.91$, which indicates excellent consistency of scale. The internal consistency score of the Cronbach's Alpha test is $\alpha = 0.88$, which indicates good internal consistency of the scale.

Demographic Questionnaire

The demographic questionnaire contained the following information about the participants: gender, age, marital status, education, occupation, income per family member per month (questions 1-6) and attitudes towards Latvian and foreign foods that participants use daily (questions 7-13); what foods (Latvian or foreign) are bought in the first instance; when was the last time Latvian foods were bought; when was the last time foreign foods were bought; which foods (Latvian or foreign) are preferred: a) at an equivalent price, b) with an equivalent quality; whether Latvian foods are recommended to friends and acquaintances and how often; what reason can induce the transition from Latvian foods to foreign foods?

Table 5

An example of possible assessments of participants in one pair of Latvian (LV) and foreign (F) brands for a pair of adjectives "tasty-not tasty"

Marked scores (bold) and transcoding		Tasty - Not tasty		Assessment's level of conformity between adjectives and brands		Preferred brand
Tasty	Not tasty	Total	Mean	Tasty	Not tasty	
3 2 1 0 1 2 3	3 2 1 0 1 2 **3**	14	7	LV large	F large	LV
7 6 5 4 3 2 1	1 2 3 4 5 6 **7**					
3 2 1 0 1 2 3	3 2 1 0 1 **2** 3	13	6.5	LV large	F medium	LV
7 6 5 4 3 2 1	1 2 3 4 5 **6** 7					
3 2 1 0 1 2 3	3 2 1 0 **1** 2 3	12	6	LV large	F small	LV
7 6 5 4 3 2 1	1 2 3 4 **5** 6 7					
3 2 1 0 1 2 3	3 2 1 **0** 1 2 3	11	5.5	LV large	no preference	LV
7 6 5 4 3 2 1	1 2 3 **4** 5 6 7					
3 2 1 0 1 2 3	3 2 1 **0** 1 2 3	10	5	LV large	LV small	LV
7 6 5 4 3 2 1	1 2 3 **4** 5 6 7					
3 2 1 0 1 2 3	3 **2** 1 0 1 2 3	9	4.5	LV large	LV medium	no preference
7 6 5 4 3 2 1	1 **2** 3 4 5 6 7					
3 2 1 0 1 2 3	**3** 2 1 0 1 2 3	8	4	LV large	F large	no preference
7 6 5 4 3 2 1	**1** 2 3 4 5 6 7					

Procedure. First, the participants filled out the questionnaires (preliminary and demographic). Then they performed Implicit Association Tests, after which – explicit procedures: affective and cognitive. Ninety – four participants performed the experimental procedure for Affective IAT. Ninety - five participants performed the experimental Cognitive IAT procedure. One hundred and two participants performed the experimental procedure Self-Concept IAT. Sixty - six participants performed all three IAT procedures. Explicit procedures were followed by all participants. The researchers followed guidelines for confidentiality, voluntary participation, and psychological ethics.

Apparatus: Certified licensed software E-Prime 2®.

Results and Discussion

Implicit Variables

D-scores for Affective and Cognitive IAT: *D(affective)* and *D(cognitive)*. $D \leq -0.15$ corresponds to positive associations with Latvian brands and negative ones - with foreign brands, $D \geq 0.15$ corresponds to positive associations with foreign brands and negative ones with Latvian brands, $-0.15 < D < 0.15$ – no effect.

D-scores for Self-concept IAT: $D(Self) \leq -0.15$ corresponds to implicit association of oneself with foreign brands and others - with Latvian brands, $D(Self) \geq 0.15$ corresponds to implicit association of oneself with Latvian brands and others with foreign brands, $-0.15 < D(Self) < 0.15$ – no effect.

Explicit variables

E-scores for affective and cognitive explicit tests: *E(affective)* and *E(cognitive)*. If $E \geq 4.5$ - explicit preferences of Latvian brand foods, with $E \leq 3.5$ - explicit brand preferences for foreign foods.

Demographic variables: *Age. Mdn = 31.0. Gender* (1 – male, 0 – female). *Education* (1 – Secondary, 2 – Student, 3 – Bachelour, 4 – Master). *Family status* (1 – unmarried, 2 – married). *Occupation* (1 – works, 2 – does not work). *Monthly Income per Person (€)* (1 – "< 500", 2 – "500-700", 3 – "701-900", 4 – "901-1000", 5 – "> 1000"). *Preferred Foods* (1 – Latvian Foods, 2 – no preference, 3 – Foreign Foods). *Last Purchase of Latvian Brand Foods* (1 – today, 2 – yesterday, 3 a week ago, 4 – a month ago). *Last Purchase of Foreign Brand Foods* (1 – today, 2 – yesterday, 3 a week ago, 4 – a month ago). *Preference at equal price* (1 – Latvian Foods, 2 – no preference, 3 – Foreign Foods). *Preference at equal*

quality (1 – Latvian Foods, 2 – no preference, 3 – Foreign Foods). *Latvian brand recommendation to friends* (1 – no, 2 – yes). *The frequency of recommendations of the Latvian brand* (1 – never, 2 – sometimes, 3 – often). *The reason for the change of foods of Latvian brands to foreign ones* (1 – Recommendations, 2 – Quality, 3 – Experience, 4 – Price, 5 – The need for diversity).

The study of the data showed that the data distribution allows the use of parametric statistics methods. Methods of statistical data processing were chosen in accordance with the research questions.

Correlation coefficients. The Pearson's (*r*) and Spearman's (r_S) correlation coefficients were used. The results are shown in the Table 6 and Figure 2.

Table 6

Correlation coefficients between the variables

Variables		Correlation Coefficients	Effect Size	95% Confidence Interval
D(affective)	E(affective)	$r_S(94) = -0.20, p = 0.057$	between small and medium	[-0.38; 0.01]
D(cognitive)	E(cognitive)	$r(94) = -0.34, p = 0.001$	medium	[-0.51; -0.15]
D(self)	E(affective)	$r_S(102) = 0.26, p = 0.009$	medium	[0.065; 0.43]
D(self)	E(cognitive)	$r_S(102) = 0.30, p = 0.002$	medium	[0.12; 0.47]
D(self)	D(affective)	$r(66) = -0.29, p = 0.020$	medium	[-0.50; -0.052]
D(self)	D(cognitive)	$r(66) = -0.31, p = 0.013$	medium	[-0.51; -0.073]
D(affective)	D(cognitive)	$r(66) = 0.49, p < 0.001$	large	[0.28; 0.65]

Note. Correspondence between the results of implicit and explicit measurements of brand attitudes, measured using experimental procedures of affective and cognitive IAT and explicit affective and cognitive procedures, is available with negative correlation coefficients. Correspondence between the results of implicit and explicit measurements of brand attitudes, measured using the Self-Concept IAT and explicit affective and cognitive procedures, is available with positive correlation coefficients. The relationship between the results of measurements using affective and cognitive IAT, with the results of measurements using the Self-Concept IAT, is available with negative correlation coefficients.

To answer the first research question "Is there a correspondence between the results of implicit and explicit measurements of attitudes towards Latvian or foreign brand foods, measured using the IAT experimental procedures and self-assessment procedures?" the Pearson's (*r*) and Spearman's (r_S) correlation coefficients were used (Table 6, Figure 2). There is a correspondence between the results of measurements of affective and cognitive implicit and explicit attitudes towards the brand of Latvian or foreign foods. The effect size is medium.

For the results of measurements of cognitive implicit and cognitive explicit attitudes there is a stronger correspondence than for the results of measurements of affective implicit and affective explicit attitudes: $Z = 1.37, p = 0.086$. There is a trend towards significance, the Cohen's effect size $q = 0.20$ is between small and medium.

Partial Correlation coefficients were used to study the influence of the controlled variables *Gender, Age, Education, Family Status, Occupation, Monthly Income per Person (€)* on the relationship between the results of implicit and explicit measurements. The relationships between the variables *D(cognitive) – E(cognitive), D(self) – E(affective)* and *D(self) – E(cognitive)* are not affected by any of the controlled variables. The relationship between variables *D(affective) – E(affective)* is affected only by the variable *Age*.

In the older group of participants (over *Mdn* = 31 years old), there is a trend towards a statistically significant relationship with the medium effect size: $r_s(35) = -0.30, p = 0.077$. In the younger group of participants (under *Mdn* = 31 years old), the relationship was not found: $r(59) = -0.080, p = 0.55$, ns. Figure 2 shows the scatterplots for the variables *D(affective) - E(affective)*, where the points with the corresponding regression lines for the younger and older groups of participants are highlighted.
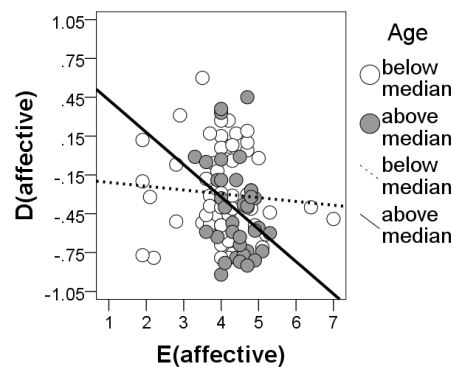
Figure 2. Scatterplots: affective implicit and affective explicit attitudes - correspondence of measurement results for two age groups ($N = 94$).

To answer the second research question "Is there a relationship between the results of measurements of implicit preferences for brands of Latvian or foreign foods obtained using the affective IAT, cognitive IAT and Self-Concept IAT?" the Pearson's (r) and Spearman's (r_s) correlation coefficients were used (Table 6). The results of measurements of implicit attitudes using affective IAT, cognitive IAT with Self-concept IAT are related. The effect size is medium. The results of measurements of the affective IAT and cognitive IAT are related. The effect size is large.

The relationships between the results of these measurements are not affected by any of the controlled variables (*Gender, Age, Education, Family Status, Occupation, Monthly Income per Person*).

To answer the third research question: "Are the results of implicit measurements and explicit measurements independent from each other?" the factor analysis with two factors (Kaiser criterion) was used (Principal Component Method, Rotation's method Varimax with Kaiser Normalization. Rotation converged in 3 iterations (Table 7, Rotated Component Matrix). Cumulative percent of total variance explained 72.4%, two factors: 37.8% + 34.6%). Scores based on method "Regression" (Table 7, Component Score Coefficient Matrix). Kaiser-Meyer-Olkin Measure of Sampling Adequacy *KMO* = 0.56 (almost satisfactory adequacy of the sample). *Bartlett's Test of Sphericity* (10) = 101, $p < 0.001$ (data are suitable for factor analysis).

As a result (Table 7), it was found that Component 1 is described only by explicit variables *E(cognitive)*, *E(affective)* and the second Component 2 is described only by implicit variables *D(affective), D(cognitive), D(self)*. The Component 1 can be called the "*Explicit overall brand attitude*" and the Component 2 can be called the "*Implicit overall brand attitude*".

Table 7 (Component Score Coefficient Matrix) also shows the β-coefficients for the standardized regression equations with the dependent variables "*Explicit overall brand attitude*" and "*Implicit overall brand attitude*". Statistical significance of β-coefficients $p < 0.001$.

Large positive values of the variable "*Explicit overall brand attitude*" correspond to the preference for the Latvian brand, and large negative values in absolute terms correspond to the preference for a foreign brand. Large positive values of the variable "*Implicit overall brand attitude*" correspond to the preference of a foreign brand, and large negative values in absolute value correspond to the preference of the Latvian brand.

Table 7

Principal Components Analysis Matrices: Rotated Component Matrix and Component Score Coefficient Matrix

	Rotated Component Matrix		Component Score Coefficient Matrix	
	Component 1	**Component 2**	**Component 1**	**Component 2**
E(cognitive)	**0.946**	-0.026	**0.506**	0.049
E(affective)	**0.938**	-0.090	**0.497**	0.011
D(affective)	0.190	**0.829**	0.158	**0.499**
D(cognitive)	-0.273	**0.788**	-0.093	**0.444**
D(self)	0.081	**-0.644**	0.000	**-0.372**

All explicitly measured brand attitudes are associated with each other. All implicitly measured brand attitudes are also associated with each other (Table 6). The result of factor analysis is not unexpected. The variables "*Explicit overall brand attitude*" and "*Implicit overall brand attitude*" constructed using factor analysis are independent: the correlation between them is equal to zero. The greatest impact on "*Explicit overall brand attitude*" is made by the variable *E(cognitive)*, then by *E(affective)*. The greatest impact on "*Implicit overall brand attitude*" is made by the variable *D(affective)*, then by *D(cognitive)*, then by *D(self)*. The hypothesis can be put forward that "overall" implicit and "overall" explicit attitudes toward food brands are independent constructs. At the same time, the implicit and explicit cognitive and affective components of attitudes and implicit attitudes measured using the Self-concept IAT are related and, therefore, can reflect two sides of the dual process. Within the framework of models of dual processes, this contradiction can be explained by the influence of propositional processes at an explicit level, which limit or facilitate the manifestation of implicit attitudes.

To answer the fourth research question: "What contribution to the implicit attitude, measured with Self-Concept IAT, is made by the emotional and cognitive bases of attitude, measured using the affective IAT, cognitive IAT?" The multiple regression analysis was used. Dependent variable *D(self)*, independent variables: *D(affective)* and *D(cognitive)*.

<u>Method: Backward,</u> criterion: Probability of *F*-to-remove $>= 0.100$. The equation for estimation:

$$D(self)[estimate] = 0.330 - 0.251*D(cognitive). \quad \text{(Model 1)}$$

The Beta coefficient is $\beta = -0.31$, $t(64) = -2.57$, $p = 0.013$. Effect size is medium. $95\% \, CI = [-0.093; 0.31]$. The statistical significance of intercept is: $t(64) = 6.70$, $p < 0.001$. The statistical significance of Model 1 is: $F(1, 64) = 6.60$, $p = 0.013$. *R-Square* $= 0.094$ shows that 9.4% of variability of the dependent variable *D(self)* is due to the influence of the independent variable *D(cognitive)*. Effect size *R-Square* is between small and medium, $95\% \, CI = [-0.036; 0.22]$. Effect size Cohen's *f-Square* $= 0.10$ is between small and medium, $95\% \, CI = [-0.036; 0.28]$. Adjusted *R*-square $= 0.079$. Standard error of the estimate is 0.31.

Thus, the greatest contribution to the implicit attitude, as measured by the Self-concept IAT, is made by the cognitive component of the attitude, which represents the implicit brand associations of Latvian foreign foods with attributes that characterize the price and quality of the foods.

The study (Trendel, Werle, 2015) considers the construction of an "overall" implicit attitude to food, which has two independent bases – cognitive and affective. Overall attitude, attitude's cognitive base, and attitude's affective base were defined as the results of measurements using three IAT procedures that had the same categories: "chocolate" and "apple". The attributes were different. The "overall" attitude is built using the IAT procedure, in which the attributes are affectively coloured words. Attributes of the affective IAT were affectively coloured words reflecting taste. Attributes of the cognitive IAT were the choice to use healthy-non-healthy foods. The measure of the "overall" attitude was chosen as the dependent variable. The measures of the cognitive base of the attitude and the affective base of the attitude were chosen as predictors and were independent of each other.

In the present research, the possibility to take the attitude towards food, measured by the Self-Concept IAT as the "overall" attitude was considered. However, only the cognitive basis of the implicit attitude was included into the regression equation. Therefore, a different approach was taken to create an "overall" implicit attitude, namely using factor analysis was taken. The use of factor analysis led to an important result: to obtain "overall" explicit and "overall" implicit attitudes to food brands.

To answer the fifth research question: "How are consumers who demonstrate explicit and implicit preferences for (I) Latvian food brands, (II) foreign food brands and (III) with no preference effect (ambivalent or unexpressed) distributed and how do the results of measurements of explicit attitudes towards food according to the demographic questionnaire relate to each other?" the frequency analysis was used: "φ^*-Fisher's Angular Transformation Test", Pearson's Chi-Square (χ^2) Test of Independence, Goodness-of-Fit (χ^2) Test (Figures 3-4). Distributions of nominal variables *D(affective)*, *D(cognitive)*, *D(self)*, *E(affective)*, *E(cognitive)* and *Preferred Foods* were studied with three categories each: "Latvian brand", "foreign brand" and "no effect". The term "no effect" refers to either very weak or ambivalent preferences.
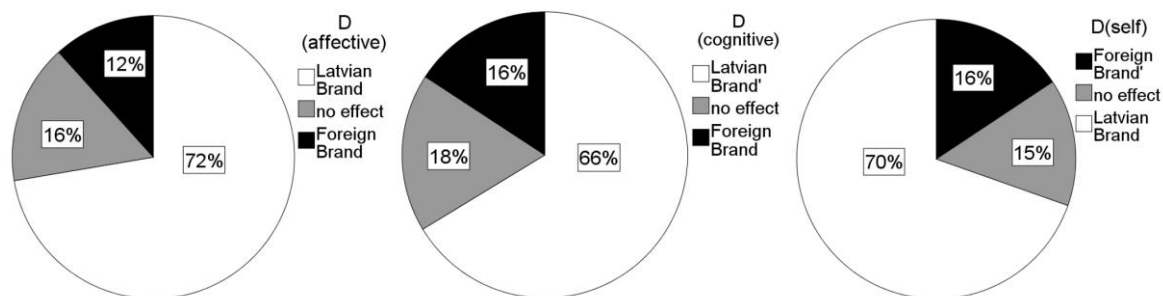
Figure 3. Distribution of implicit attitudes towards brands of Latvian or foreign foods, measured using Affective IAT – *D(affective)*, Cognitive IAT – *D(cognitive),* and Self-concept IAT - *D(self).*
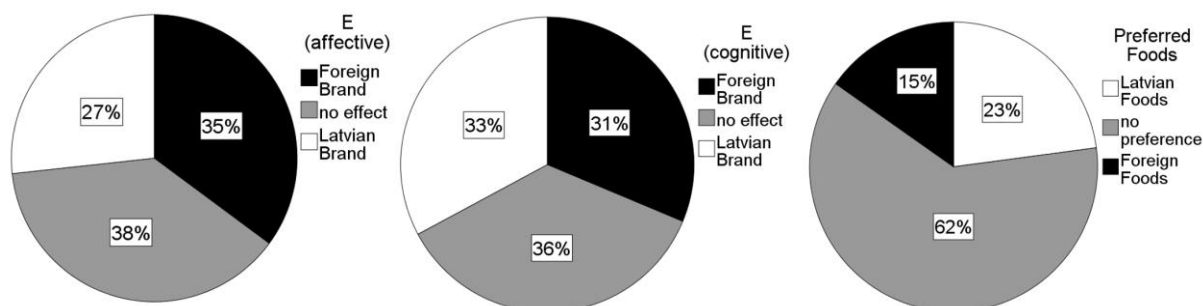
Figure 4. Distribution of explicit attitudes towards brands of Latvian or foreign foods, measured using Affective – *E(affective)* and Cognitive – *E(cognitive)* explicit tests, as well as preferences of Latvian or foreign *Preferred Foods.*

The distributions of the values of all implicit variables are statistically significantly different from the uniform distribution. The size of the effect ω is large in all cases: *D(emotional)* – χ^2 (2, *N* = 94) = 64.6, *p* <0.001, ω = 0.83; *D(cognitive)* – χ^2 (2, *N* = 95) = 46.6, *p* <0.001, ω = 0.70; *D(self)* – χ^2 (2, *N* = 102) = 60.4, *p* <0.001, ω = 0.77. The largest percentage of participants for all three variables has implicit associations with a Latvian food brand. The size of the Cohen's h effect is large: *D(emotional)* - φ^* = 8.31, *p* < 0.001, *h* = 1.21; *D(cognitive)* –: φ^* = 7.10, *p* < 0.001, *h* = 1.03; *D(self)* – φ^* = 8.28, *p* < 0.001, *h* = 1.16. There was no statistically significant difference in the percentage of participants with an implicit preference for a foreign brand and those with no effect. A statistically significant difference in the percent of participants with an implicit preference for foreign brands and participants "without effect" was not revealed.

A statistically significant difference between the distributions of the values of the explicit variables and the uniform distribution was not found: *E(emotional)* – χ^2 (2, *N* = 131) = 2.76, *p* = 0.25, ω = 0.15, the size of the effect ω is small. *E(cognitive)* – χ^2 (2, *N* = 131) = .43, *p* = 0.81, ω = 0.057, no effect was found. The percentage of participants without an explicit emotional brand preference (38%) is statistically significantly higher than the percentage of participants with a preference for a Latvian food brand (27%): φ^* = 1.99, *p* = 0.047, *h* = 0.25. The size of the Cohen's h effect is small. There were no other differences in the percentages of participants with explicit emotional and cognitive brand preferences.

The distribution of participants with a preference for Latvian or foreign foods, as measured by a demographic questionnaire (*Preferred Foods*), is not uniform. The preference for Latvian foods (23%) is statistically insignificant with a small effect size (*h* = 0.20) exceeding the percentage of preferences for foreign food (15%). The percentage of participants "without preferences" (62%) is statistically significant, with a large effect size, exceeds the percentage of participants with a preference for both Latvian and foreign foods: φ^* = 6.57, *p* < 0.001, *h* = 0.81; φ^* = 8.15, *p* < 0.001, *h* = 1.01 accordingly.

Latvian foods are bought as often as foreign ones, yesterday-today 85% and 82% respectively. With the same price, 44% of participants buy Latvian foods and 23% – foreign ones. With the same quality, 45% buy Latvian foods and 21% – foreign ones. That is, according to both criteria, the percentage of purchases of Latvian foods is statistically significantly higher than the percentage of purchases of foreign

foods ($p < 0.001$). The main reason for the change in preferences of Latvian foods to foreign ones is the quality of the foods (54%) and experience (34%).

From the results of all measurements carried out using the affective, cognitive and Self-concept IAT, it follows that the implicit preference is given to the Latvian food brand. The effect size is large.

It was not possible to find any important differences between the explicit preferences of Latvian and foreign brands.

This difference in the distribution of implicit and explicit attitudes towards the studied set of Latvian and foreign food brands can be explained by the fact that implicit attitudes towards brands change little over time. Explicit attitudes change faster. Some "equilibrium" in the distributions of the affective and cognitive components of explicit attitudes towards the proposed set of Latvian and foreign food brands can be explained as a consequence of the change in preferences for Latvian and foreign foods in general. The distribution of participants with a preference for Latvian or foreign foods, as measured by the demographic questionnaire (*Preferred Foods*), is not uniform. The preference for Latvian foods is still slightly higher than the preference for foreign foods. However, the percentage of participants "without preferences" greatly exceeds the percentage of participants with a preference for both Latvian and foreign foods. It also follows from the demographic questionnaire that Latvian foods are bought as often as foreign ones. At the same price and with the same quality, they buy more Latvian foods. The main reason for the change in preferences of Latvian foods to foreign ones is the quality of foods and experience.

In the present paper, the traditional model of information processing is adopted in the framework of two-process representation of attitudes. Its main postulates boil down to the adoption of a unified associative network as an important form of storing associative knowledge (spontaneous, automatic) in memory. This network interacts with a process based on propositional information processing processes, which are arbitrary (controlled), conscious and can, along with other cognitive processes, facilitate or limit the manifestation of associative processes. It is also customary to distinguish between the types of associations in accordance with the concept of the three-component structure of attitudes (affective, cognitive and behavioural). Moreover, an attempt was made to reveal the differences between the affective and cognitive (conceptual) bases of attitudes at the implicit and explicit levels of measurement, and the effects of the behavioural component are indirectly based on explicit assessments.

The issue of unitarity – plurality of specific associative networks encoding the types of affective, conceptual and behavioural information and their role in the formation of real behaviour is considered in the theoretical format of the promising neurocognitive Interactive Memory Systems Model (Amodio, 2019). Speaking from the perspective of this approach to understanding the memory system, it is important to assess the role of conceptual and instrumental levels of processing in the formation of consumer attitude assessments, which are based on independent, albeit situationally interacting, systems of representation of attitude associations – conceptual and instrumental. They correspond to declarative and procedural memory systems. In this paper, only some important aspects of this theory are touched upon.

Instrumental associations arise as a result of feedback that arises in the process of instrumental learning, which is active in nature and related experiences. This type of learning involves both making behavioural decisions and performing appropriate actions, and the process of positive or negative reinforcement as a result of these actions. Such learning more directly influences purposeful action (Samejima et al., 2005), which enhances the role of the effects of this learning in shaping real consumer decisions and behaviour in general.

All types of associations under consideration – conceptual, instrumental and affective – should be associated with the formation of behavioural decisions, but the instrumental associative network encoding the acquired experience of consuming the products of the respective brands presumably plays a dominant role.

The implicit and explicit methods for measuring attitudes used in this paper do not allow identifying specific associative processes and memory systems as understood by D.M. Amodio and colleagues, which underlie the development of responses to the tasks of the tests used. The results obtained also do not allow for a definite forecast of consumer behaviour when choosing foods of the brands under consideration in real life, i.e., to evaluate the effects of instrumental learning that is active in nature. However, these results provide some guidance for understanding the psychological mechanisms and systems that underlie the findings.

It was found that direct explicit assessments of consumer preferences of Latvian or foreign brands did not reveal differences in the frequency of purchasing preferences for foods of these classes of brands. These assessments characterize the instrumental aspect of the explicit consumer attitude. Since at the behavioural level, the survey participants – consumers did not give a clear preference for the foods of Latvian brands, and all results obtained using the three IAT procedures indicate the implicit preference for Latvian brands, a contradiction arises. It can be resolved by assuming that the resulting differences between explicit assessments of consumer behaviour and implicit brand preferences were not associated with the influence of implicit instrumental associations encoding the effects of instrumental learning. Thus, the associative knowledge underlying the participants' responses to implicit measurement procedures was largely based on conceptual (cognitive) associations and affective implicit associations moderately associated with them. And the implicit instrumental network, a supposedly separate system (Amodio, 2019), was not affected by the procedures used.

This assumption needs to be clarified, considering the possibility of mixing affective and cognitive components of implicit attitudes, which may contradict each other, as a result of which it is impossible to predict consumer behaviour (Trendel, Werle, 2015).

In addition, it was found that the cognitive component makes the greatest contribution to the implicit assessment of attitude using the Self-concept IAT. This allows us to assume that this procedure is based mainly on the activation of cognitive (conceptual) associations that encode information about the price and quality of foods, but are not associated with the implicit instrumental network. All this emphasizes the role of the declarative rather than procedural memory system in the results obtained and illustrates the importance of the instrumental system noted by (Amodio, Berg, 2018) in understanding implicit attitudes and their influence on decision-making.

Cognitive (conceptual) implicit and explicit brand assessments also showed greater correspondence than the observed correspondence of affective assessments. This can be interpreted as evidence of a greater connection between conceptual systems that support implicit and explicit processes in the processing of attitudes than the corresponding affective processes suggest.

It was also found that the results of measurements of cognitive and affective components of brand attitudes by two different implicit procedures are closely related. Such a relationship reflects the difficulties (Trendel, Werle, 2015) noted in the literature in distinguishing these aspects of implicit attitude at the level of measurement, but it can also indicate a close interaction of the corresponding storage systems for relevant implicit information.

Conclusions

The aim of the study was achieved and the answers to the research questions were obtained.

The results of the research provide evidence in favour of the hypothesis of the independence of implicit and explicit "overall" attitudes, but on the example of attitudes toward food brands.

The expediency of separate considerations of the effects of conceptual and affective systems of attitude processing when measuring them to highlight the role of each of them in the processes of attitude processing has been confirmed. A separate analysis of these effects showed the importance of conceptual (cognitive) knowledge and a greater meaningful correspondence between the implicit and explicit levels of their representation, compared with the correspondence of these levels in the case of the affective system of attitude representation. By indirection, the results of the study are compatible with the concept of multiple systems for separate storage of information developed within the framework of the Multiple Memory Systems Model of Attitudes.

The discrepancy between the implicit assessments of brand attitudes and consumer behaviour declared by the participants raises the question of the need to study at the level of implicit measurement the role of instrumental associations and instrumental learning in the formation of brand attitudes. This study is promising for increasing the predictive (prognostic) validity of implicit procedures for measuring consumer attitudes and a better understanding of both their psychological nature and the mechanisms of functioning in real life.

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"Conflict of Goals" as a Barrier for Effective Use of Visual Models in Primary Math Education

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Abstract: The formation of the ability to solve non-trivial life problems is one of the tasks of school education in the context of achieving sustainable development goals. In the process of teaching mathematics, one of the most effective ways to find solutions to problems is modelling – a teaching method that not only helps students to consciously assimilate mathematical content, but also forms the basis for self-study throughout life. Visual models, which reflect the essential characteristics of mathematical concepts by pictorial means, play a special role in the process of initial teaching of mathematics. Teachers can use active and passive techniques for working with visual models in mathematics lessons, which differ in the degree of children's participation in building a visual model. The main goal of this article is to identify which techniques teachers prefer working with visual models in practice in mathematics lessons. To achieve this goal, the questionnaire method, the multi-criteria assessment method, and the moderation method were applied. This article presents the results of a study devoted to identifying teachers' preferred methods of working with visual models when conducting mathematics lessons, identifying their theoretical ideas about the value of each group of techniques, as well as establishing the reasons for the revealed discrepancy between the practical preferences of teachers and their theoretical ideas.

Keywords: visualization in mathematics education, visual models, teaching techniques, primary mathematics education.

Introduction

Topical global problems of the world are associated with such phenomena as epidemics, environmental pollution, climate change, natural disasters and man-made accidents. Solving these problems requires a multidisciplinary approach, which consists of a synergy of practice and knowledge, social, natural and engineering sciences, based on mathematics (Clark, Levin, 2010). Learning for sustainable development requires teachers to be open-minded and flexible, and ready to accept each new perspective. Education for sustainable development should take into account that the learning process should be student-centred (based on the student's experience and questions), processes (emphasis on patterns), actions (to develop the ability to act), assess (to develop critical thinking and the ability to solve non-standard problems reality), society (to involve students in identifying and solving real problems) and complex problem solving (including economic, environmental and social aspects) (Vasilevska, Geske, 2020). One of the most important tasks facing the teacher is the development of an independent logic of thinking, which would allow students to build inferences, provide evidence, statements that are logically related to each other, draw conclusions, justify their judgments, and, ultimately, independently acquire knowledge. Mathematics is exactly the subject where this can be largely implemented. One of the most effective ways to find a solution to a problem that is formed in the process of studying mathematics is modelling. Modelling as a method of teaching mathematics contributes to both the assimilation of subject content and the general mental development of students, equipping them with one of the most effective tools for self-study throughout life (Stillman et al., 2016; Doğan et al., 2019).

The use of modelling as a method of teaching mathematics involves ensuring its compliance with the process of solving a real problem by means of mathematics in scientific cognition ("cycle of mathematics") proposed by J. De Lange: real-word problem – mathematical problem – mathematical solution – real solution (De Lange, 2006). An important addition to this cycle, considering the specifics of teaching primary school students, is the concept of a "real model" introduced by W. Blum: the author believes that between a real problem and a mathematical model there is a real model, which is a simplified reflection of the essential features of the analysed situations in visual presentation. Only then can the real model be more correctly and consciously transformed into a mathematical model (Blum, Leiß, 2007).

In this regard, visualization of the studied abstract concepts is of particular importance in the process of studying mathematics. This idea receives wide coverage in studies of the late XX – early XXI century, and currently the ability of a student to represent mathematical ideas using various (including visual) means of representation is recognized in a number of studies as an important component of mathematical competence (Vorobjovs, 2020). In modern education, two directions of research on the problem of visualization in teaching mathematics are developing.

The first direction is associated with the use of traditional visualization tools to create visual images of mathematical concepts. According to G.A. Goldin, the images created by students that model the concepts of numbers, figures and relationships, not only have a positive effect on the assimilation of mathematical content, but also allow to form in students already in elementary school the ability to representation fluency – the presentation of information by various means and the transition from one type of representation to another (Goldin, 2008; Cartwright, 2020). The ability to understand information presented in different languages – mathematical symbols, natural language and the language of images (diagrams, schemes, graphs) L.D. English calls the most important social skill of a person, the role of which in modern society is constantly growing. At the same time, the author substantiates the need for teaching modelling at an early school age (Asempapa, 2015; English, 2015; Helmane, 2017).

The second direction of research in the field of visualization of teaching mathematics is associated with the development of interactive computer models that allow to study of mathematical concepts in dynamics. The results obtained in this direction are based on the principles of designing applets for educational problems developed in the studies by C. Wieman (Wieman, Perkins, 2005). At present, the use of visual computer models in teaching mathematics goes beyond the narrow pedagogical task of helping students memorize educational materials and turns into a tool for educational research and experimentation (Kadunz, Yerushalmy, 2015).

However, despite the importance of the "computer" the direction of visual modelling in mathematics education for primary school students, the construction of visual models using traditional teaching aids (handouts, paper, pencil, blackboard, chalk) continues to be a more valuable and necessary part of learning, since it relies on manipulative activity and visual thinking of students of this age group (Urban, Murauyova, Gadzaova, 2017; Haylock, Cockburn, 2017; Lehrer, Schauble, 2019).

In the process of using visual models in mathematics lessons, teachers can rely on a greater or lesser degree of student independence. For example, a teacher can use *passive* techniques for working with models – showing students a scheme for a textual task to explain how to solve it, without asking students to build this model on their own. The teacher can also use *active* techniques for working with models, inviting students to independently build a visual model in whole or in part.

In the modern scientific and methodological discourse, the need for students' vigorous activity (both mental and practical) in the process of acquiring knowledge is considered as one of the basic principles of effective teaching. However, the question remains about to what extent teachers implement this principle in their daily practice, what methods of working with visual models they prefer.

The purpose of this article: 1) to identify which methods of working with visual models are preferred by teachers in practice in mathematics lessons; 2) to determine whether the practical choices of teachers correspond to their theoretical ideas about the value of each of the groups of techniques; 3) on the basis of the data obtained, to establish the reasons for the coincidence or difference between the practical and theoretical preferences of teachers.

Methodology

To achieve this goal, based on the performed theoretical analysis and generalization of its results, *the questionnaire* method was applied, with the help of which the preferred methods of using visual models in their practice of teaching mathematics were identified. At the next stage of the study, using the method of *multi-criteria assessment*, the opinion of teachers about the didactic value of active and passive methods of using visual models was revealed. To establish the reasons for the discrepancy between the practical choices of teachers and their theoretical ideas revealed in the course of the study, the method of *moderation* was used.

The study was conducted based on the Faculty of Primary Education of the Belarusian State Pedagogical University in 2020.

Results and discussion

The first stage of the study.

In January 2020, 131 primary school teachers of part-time higher education at the Belarusian State Pedagogical University were asked to answer the questionnaire. The purpose of the survey was to identify the preferred methods of using models in mathematics lessons by teachers. Teachers were asked to evaluate their practice of using visual models on the example of constructing schematic drawings and pictures for textual tasks, indicating the frequency of using active (students build visual models themselves) and passive (students use the visual model proposed by the teacher) techniques for working with models (Table 1).

Table 1

The frequency of using active and passive techniques for working with models

	Never	Seldom (no more than 1 lesson per week)	Sometimes (2-3 lessons per week)	Often (4 lessons per week)	Total
Active techniques	7 (5 %)	81 (62 %)	39 (30 %)	4 (3 %)	131 (100 %)
Passive techniques	0 (0 %)	17 (13 %)	38 (29 %)	76 (58 %)	131 (100 %)

The results obtained indicate that when conducting mathematics lessons, the majority of teachers out of 131 respondents (81 people, 62 %) use active techniques of working with visual models no more than once a week (rarely). Passive techniques for working with visual models, on the contrary, are used most often (76 people, 58 %). Thus, in mathematics lessons, most teachers prefer to offer a "ready-made" model, explaining with its help the way to solve the problem, and the students themselves are rarely involved in building a visual model.

The second stage of the study.

Furthermore, in the course of the study, a representative sample of 25 teachers who took part in the survey was formed by the method of random selection. To determine the theoretical understanding of teachers about the value of active and passive methods of working with visual models, the method of *multi-criteria assessment* was adapted to the specifics of the study (Erdogan, Šaparauskas, Turskis, 2019).

First, a group of teachers, during the discussion, formulated evaluation criteria: *the first criterion* is the time spent on solving the problem; *the second* is the students' understanding of the way of solving the problem, *the third* is the strength of mastering the ability to solve problems, *the fourth* is the formation of the ability to independently build visual models for solving the problem.

For each criterion, its weight in the overall assessment was determined, after which, during the discussion, an assessment of active and passive methods of working with visual models was given for each of the criteria. The procedure used a five-point school (1 point – the minimum value, 5 points – the maximum value). The results of the multi-criteria assessment are presented in Table 2.

Table 2

Multi-criteria assessment of active and passive methods of working with visual models

	First criterion 0,2	Second criterion 0,3	Third criterion 0,3	Fourth criterion 0,2	Weighted score
Active techniques	2	5	4	5	4,1
Passive techniques	4	4	2	1	2,8

The results obtained showed a discrepancy between the practical choices of teachers and their theoretical concepts: active techniques of working with visual models were recognized as more valuable (weighted score 4, 1). Passive techniques were rated significantly lower by teachers (weighted score 2, 8). Thus, a problem

was identified: knowing that active techniques are more effective for teaching mathematics, teachers continue to use mainly passive techniques for working with visual models in the classroom. Therefore, at the next stage of the study, it was important to establish the reasons for the identified discrepancy.

The third stage of the study.

To establish the reasons for the identified discrepancy, *the moderation* method was applied, which is a structured search for the causes of the problem and ways to solve it in teamwork (Legewie, Böhm, 2015). A group of 25 teachers who worked at the previous stage of the study formulated answers to the question "*Why do many teachers prefer to use passive techniques for working with visual models in mathematics lessons, despite the fact that they understand the value of active techniques?*" Each teacher recorded three answers to this question on cards, after which all answer cards were analysed and grouped, as a result of which several clusters of causes were identified. Table 3 shows the clusters with the largest number of cards.

Table 3

Clusters of causes

No	Cluster	Description
1	Saving time during the lesson	The teacher spends less time explaining how to solve the problem using passive techniques of working with the visual model. As a result, he can complete a larger number of tasks with students, which is subjectively assessed as an effectively conducted mathematics lesson
2	Acceptable level of understanding by the end of the lesson	Students at the end of the lesson, which explains how to solve a problem, are able to solve a similar problem, acting on the model of the teacher. Therefore, it is assessed by the teacher as a quickly achieved learning outcome
3	Lack of motivation to achieve a delayed result	The strength of mastering the ability to solve problems should be checked after a certain time interval, not less than after 2-3 weeks. Therefore, skill strength is perceived as an important, but not the most urgent task of a math lesson
4	Lack of motivation to achieve hard-to-measure results	Diagnostics of cognitive skills, including the ability to build visual models, have not yet been brought to the technological level. As a result, it is easier for a teacher to evaluate the ability to solve a problem than the ability to build a visual model for it
5	Insufficient methodological preparation of the teacher	It is easier for a teacher to build a visual model for a task on the blackboard than to teach students to build it on their own. In addition, the methodology for the formation of the ability to model in students is still in the process of becoming

The analysis of the reasons identified allowed us to conclude that the goals facing the teacher in the mathematics lesson are planned results *with different time horizons*. For example, time savings and, as a consequence, a greater volume of completed tasks, as well as the ability to solve a similar problem by the sample are short-term goals that can be achieved by the end of the lesson. At the same time, the strength of students' mastery of the ability to solve problems and their ability to build visual models on their own are *long-term* goals that are not considered by the teacher as urgent. In addition, the achievement of these goals is often difficult to measure and not fully developed: in particular, in modern sources there are only separate publications on the problems of diagnosing the ability to model in students (Urban, Smoleusova, 2020).

As a result of the discussion with a group of teachers, the conclusion was formulated: if the teacher in the lesson simultaneously faces goals with different time horizons (there is a "conflict of goals"), then the choice is made in favour of short-term goals. According to teachers, this is the main barrier in choosing more effective techniques for working with visual models in a math lesson. The data obtained can be correlated with the problem of procrastination, well-known in the field of personality psychology, one of the manifestations of which is a person's preference for short-term activities, the implementation of which immediately leads to the expected result (Steel, 2007). In further work, it is planned to investigate the issue of the reasons for such pedagogical procrastination and ways to overcome it.

Conclusions

The use of visual models in elementary mathematics education is an effective teaching tool that helps children both in mastering mathematical content and in developing their cognitive independence for a full life in society. In the course of the study, the following results were obtained:

- teachers prefer to use passive techniques of working with visual models in mathematics lessons, the peculiarity of which is to present to students the models built by the teacher; at the same time, the students themselves only observe the work of the teacher, but do not get the experience of independently building a visual model;

- the practical preferences of teachers do not correspond to their theoretical ideas: teachers understand the high pedagogical value of active techniques for working with visual models, when students actively participate in their construction, but use these techniques in mathematics lessons much less often than passive techniques;

- one of the main reasons for the revealed discrepancy between practical preferences and theoretical ideas of teachers is a "conflict of goals" with different time horizons: in a mathematics lesson, teachers often choose short-term goals that can be achieved by the end of the lesson; at the same time, the long-term goals associated with the formation of general approaches to solving the problem and modelling skills of students are perceived by teachers as less urgent and relevant (the phenomenon of pedagogical procrastination).

Primary school is the optimal period for the formation of abstract-logical and conceptual forms of thinking, since the lack of formation of these types of thinking leads to persistent academic failure. Generalized and specific knowledge obtained as a result of spontaneously forming thought processes are ordered much weaker and coexist in the student's understanding, instead of forming into a clearly structured system. The results of the study confirm that the method of teaching mathematics using educational modelling is effective and significantly changes the attitude of students to the educational process. The methodological significance of the use of educational modelling lies in the fact that the student, solving a task by using the method of modelling, argues like a researcher. Therefore, the role of modelling in teaching any academic discipline is high.

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The Pros and Cons of Online Learning Environment from the Students' Perspective

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Abstract: The country's participation in the Bologna process obliges it to strategically develop lifelong learning. The internet network is a key to accessibility of studies to everybody. Technologization seems to be an integral part of the system of education in the 21st century. According to the researchers, technologization facilitates teaching/learning and makes it more attractive, accessible, individual and efficient. However, some researchers still doubt its effectiveness and efficiency. Therefore, what factors promote technologization? Do efforts and insights of politicians answer the students' needs? The aim of the study is to reveal the attitude of students towards application of virtual learning environments in the study process and its compliance with the contemporary tendencies in study organisation. The article focuses on the development of lifelong learning in the Bologna process documents. The data of qualitative research are also presented: the students' attitude towards advantages and disadvantages of applying virtual learning environments in the study process. The applied methods include analysis of scholarly literature and documents, qualitative research. The article presents the analysis of open-ended questions about the advantages and disadvantages of virtual learning environments. The research sample included 106 third year university students. Technically the accessibility of studies is developed but the personal individuality and exceptionality of individual needs are trivialized to convenience of learning when the place and time for learning can chose. If the main focus of studies is diverted from the personality growth, building up of individual's values and worldview to technologization exclusively, a passive consumer society, whose members are not ready to assume responsibility and do not justify the essential idea of higher education, is developed. Unbalanced workload of highly qualified specialists in higher education institutions does not create the anticipated economic value, economic and social wellbeing or added value. Appropriate distribution of responsibilities establishes conditions for development of culture and building up personalities.

Keywords: Bologna process, lifelong learning, student's attitude, technologization, virtual learning environment (VLE).

Introduction

Factors Promoting Technologization. The creation of national educational system is predetermined by international politics. The legislation of the Republic of Lithuania complies with international documents, which also correlate with partially autonomous higher education institutions, their strategies and internal procedures. It is essential for the academic community to constantly follow internationally prioritised activities striving to timely respond to relevant needs.

Lithuania's involvement in the Bologna process in 1999 resulted in political changes in higher education at the international level (Svarbiausi Bolonijos proceso…, 2005).

The Prague Communique adopted in 2001 provided for three new directions in education: lifelong learning, involvement of the academic community while creating European Higher Education Area and increase in its attractiveness (Communiqué of the meeting…, 2001). The Berlin Communique called for expansion of lifelong learning opportunities in higher education and improvement of higher education accessibility according to individual needs of citizens (Communiqué of the…, 2003). The Bergen Communique obliges countries to further pursue accessibility of quality higher education to all while creating favourable conditions for studies regardless of citizen's economic or social conditions (Communiqué of the…, 2005). Attempts are made to make higher education more accessible to everybody who wants to acquire it (Svarbiausi Bolonijos proceso…, 2005).

The report of lifelong learning in the London Communique states "that some elements of flexible learning exist in most countries, but a more systematic development of flexible learning paths to support lifelong learning is at an early stage (50) (Svarbiausi Bolonijos proceso…, 2008). The London

Communique provides for the aim of higher education policy to create conditions to maximise the potential of individuals in terms of their personal development and their contribution to a sustainable and democratic knowledge-based society (London Communique…, 2007). Striving for reduction of social and economic exclusion, necessary support to students and creation of more flexible learning paths are encouraged. The countries commit themselves to allocating more attention to the student and to development of knowledge-based learning (Svarbiausi Bolonijos proceso…, 2008).

In the Leuven and Louvain-la-Neuve Communique the ministers put forward an obligation to set the objectives by 2020 to increase the number of students in higher education including "underrepresented" social groups (Communiqué of the…, 2009). The responsibility to reform the study programmes organising student-centred teaching is expressed. Promotion of lifelong learning is further developed also laying emphasis on students' employability (Svarbiausi Bolonijos proceso…, 2013). In 2010 the ministers of Bologna countries in the Budapest and Vienna conference reached an agreement regarding the main principles while increasing the role of higher education in society development mainly focusing on lifelong learning and accessibility of equal opportunities for studies (Budapest-Vienna Declaration…, 2010). The Bucharest Communique provides for an agreement that make quality higher education available to all society members. Providing support to students an obligation to ensure flexible learning conditions is ensured (Bucharest Communique…, 2012). Aims to ensure the development of alternative forms of study to improve access to higher education (Svarbiausi Bolonijos proceso…, 2013; Paris Communiqué, 2018).

Lifelong learning is linked to equal opportunities, cohesion in society and better life quality, which creates favourable conditions for successful functioning in environments of increasing competition and technologization. Agreements in international policy are addressed in political decisions at the national and school levels and during time they should be reflected in improving social and economic environment of every person and country. The countries should create a consistent lifelong learning strategy in all systems of education and training *(A Memorandum* on…, 2000; Svarbiausi Bolonijos proceso…, 2005). Establishment of conditions for universal, continuous and high-quality education to every person according to individual needs makes up one of the most important factors of lifelong learning. The idea of lifelong learning encourages the search for continuously new ways to implement the development of comprehensive activity-related abilities, especially those of new information technologies, new culture of work-related technologies and others. Educational institutions have to create new ways and systems of teaching/learning to enable every member of society to have conditions to use the opportunities for pursuing individual life goals (Ehlers, 2004; Jovaiša, 2007; Volungevičienė, 2008; Drabik, Gil, Nowacka, 2013; Prawira, Sofianti, Indrayadi, 2015; Burkšaitienė, Šliogerienė, Valūnaitė-Oleškevičienė, 2017; Nemejc, Smekalova, Kriz, 2019). In this way, technologization is promoted, the complexity of which is linked to the employment of technological science for implementation of educational goals. However, in her dissertation research, A. Volungevičienė (2008) stated that "*rapid development of new technologies frequently becomes an object of fascination, whereas pedagogical projecting of the curriculum, often under the influence of technological resources, loses the main idea*" (Volungevičienė, 2008, 5).

According to L. Jovaiša (2007), a classic of educational sciences, education is the main function of training, whereas the function of the latter includes teaching and learning. Teaching is one of the functions of education, which is perceived as a targeted, consistent activity of participants in the process of education and supervision of learning. Learning is explained as a targeted activity of an individual seeking to take over the experience accumulated by humankind. The interaction of participants in the educational process, which helps to improve according to individual needs and possibilities, is considered one of the main conditions in the processes of education. In other words, the participants themselves, their inner attitude, agreements, relationship and communication become most relevant. Every science has its own objects and goals, which cannot be lost while merging sciences pursuing interdisciplinarity. Therefore, in the processes of technologization, it is important to retain the basic goals of education, although in certain periods and under certain conditions, more attention is allocated to mastering technologies.

The aim of the study is to reveal the attitude of students towards the application of virtual learning environments in the study process and its compliance with the contemporary tendencies in study organisation.

Methodology

The research problem is formulated as the following question: what is the attitude of students towards VLE as an integral part of the increasingly technologized study process?

The research object: the attitude of university students towards the use of VLE in the study process.

The article presents the analysis of open-ended questions about the advantages and disadvantages of virtual learning environments. Analysing the data, the answers of the informants were grouped according to the meaning and respective categories were created. The research sample included 106 third year university students of Lithuanian (85), Russian (12) and Polish (9) nationalities. The informants were 20-22 years old and the average of their academic achievements ranged from 6.7 to 10 points.

The Research Results: Students' Attitude Towards Advantages and Disadvantages of Using VLE in the Study Process

The authors analysed students' responses using the method of thematic data analysis. Analysing the data the answers of the informants were grouped according to the meaning and respective subcategories and categories were created. The informants' answers were divided into subcategories according to the sense. Subcategories are grouped into categories according to the topic. The category consists of several subcategories.

The responses presented by the informants regarding the advantages of using VLE were grouped according to the meaning. Three categories were presented: aspects of convenience, aspects of independent learning and aspects of information quality (Table 1). The most numerous categories of convenience were divided into the following sub-categories: elimination of factor of place and time, time saving and accessibility of material (Table 1).

Table 1

Distribution of advantages using virtual learning environments in the study process: students' attitude

Category	Subcategory	Statements
Aspects of convenience	Elimination of the factor of place and time	*"it is convenient to access the material just from home"*
		"a possibility of accessing learning material from home"
		"the possibility of accessing information from home, when the material is insufficient"
		"it's simpler when you don't need to leave home to get access to it"
		"you can get information from anywhere, where the internet is available"
		"it's convenient to use it because you can connect to it from any place and at any time"
		"material is available at any time"
	Time saving	*"to get information faster"*
		"the necessary information is quickly accessible"
		"time is saved for getting info"
		"information that is accessible fast and cheaply"
	Accessibility of materials	*"to access information more easily"*
		"easy retrieval of information"
		"convenient way of receiving material"
		"retrieval of new information"
		"it's convenient"
		"it is more convenient to use popular science materials"
Aspects of indepen-	Compensation for (un)attended lectures	*"you can learn at home"*
		"a possibility of accessing information from home, when you cannot attend a lecture"
		"you can find information if you missed the lecture"

Category	Subcategory	Statements
dent learning		*"when you fall ill, you get and see all the necessary information"*
		"a possibility of preparing for lectures when you are ill or missed a lecture because of other reasons"
		"it is not necessary to take a lot of notes during the lecture"
		"it is not necessary to consult a lecturer during the lecture or after the lecture"
	Conditions for independent learning	*"all the information, which can be used for independent learning and preparation for quizzes and seminars is available"*
		"good preparation for quizzes and examinations"
		"convenient preparation for assessment and tests"
	Individual distribution of time for information processing	*"revision of information"*
		"delving into the material"
		"delving into information"
Aspects of information quality	Reliability of information	*"presented in an accurate way"*
		"necessary and suitable material is presented"
		"you can find the selected information fast and you don't need to search for it and select it from several sources"
		"it is very useful because teachers present the material, which is appropriate and necessary"
	Diversity of information	*"visual material"*
		"variety of topics"
		"a possibility of receiving interesting information, which is related not only to the lecture"
	Abundance of information	*"more information than in the library"*
		"more information in one place (all subjects)"
		"students have a possibility of receiving additional information"
	Alternative information	*"you don't need a heap of books"*
		"you don't need to go to the library"

The results of qualitative research show that convenience is the biggest advantage of using VLE. University students feel satisfied when information is accessible at any time convenient to them: *"you can get information from anywhere, where the internet is available"*. It turns out that "*a possibility of accessing learning material from home"* or from "*anywhere where the internet is available*" provides students with a sense of comfort. When they can choose the convenient time and place for them to learn, it is easier to plan individual time and *"to get information faster"* and *"to access information more easily"*. The informants state that online learning platforms are convenient and ensure *"easy retrieval of information"*, when *"it is more convenient to use popular science materials"*.

The category of independent learning comprises three subcategories: compensation for (un)attended lectures, *conditions* for independent learning and individual distribution of time for information processing (Table 1). According to the informants, one of the biggest advantages of VMA is the possibility of learning *"at home"*: *"a possibility of accessing information from home, when you cannot attend a lecture"*, *"a possibility of preparing for lectures when you are ill or missed a lecture because of other reasons"*. The participants of the research state that during the online lecture they are able to better concentrate on the teacher's speaking to actively engage in the activities because *"it is not necessary to take a lot of notes during the lecture"* and, consequently, *"it is not necessary to consult a lecturer during the lecture or after the lecture"*. The lecture material uploaded into VLE enables a student "*to revise information*", "*to delve into the material*" and "*to better prepare for quizzes, seminars*", "*tests*" and others.

The category of information quality is divided into four sub-categories: information reliability, information diversity, information abundance and alternative information (Table 1). The informants refer to the possibility that *"you can find the selected information fast and you don't need to search for it and select it from several sources"* as an advantage of VLE. At present the abundance of information always raises the

issue of its reliability and for this reason the information selected by a professional provides students with a sense of comfort. Moreover, the VLE contains *"more information than in the library"*, *"a possibility of receiving interesting information, which is related not only to the lecture"* and *"students have a possibility of receiving additional information"*. Learning is facilitated and diversified with *"visual material"* and *"variety of topics"*. A student in the beginning of the 21st century points out that if *"you don't need to go to the library"* or *"you don't need a heap of books"*, it is an advantage in studies.

Table 2

Distribution of disadvantages using virtual learning environments in the study process: students' attitude

Category	Subcategory	Statement
Aspects of information quality	Information accessibility	*"not always all the information can be found"*
		"information is not always updated and uploaded on time"
	Usefulness of information	*"not all the information is useful"*
		"a lot of unnecessary information"
	Reliability of information	*"presented information is not always reliable"*
		"lack of accuracy"
	Change in channels of information accessibility	*"books aren't read"*
Personal aspect	Specifics of learning environments	*"material frequently has to be printed out"*
	Habits of using computer	*"computer is tiring"*
		"addiction to computers"
	Competence of information selection	*"it is sometimes complicated not to get lost in the abundance of information"*
	Teacher's computer literacy	*"not all teachers employ this programme to full extent"*
		"teachers' age: as elderly people face challenges seeking to master information technologies"
Communicative aspect	Qualified support	*"human explanation is missing"*
		"sometimes there emerge questions, which can be explained only by an educator"
	Contact	*"there is no communication with a live person"*
		"absence of contact with people"
	Attendance	*"students may abuse the situation and not attend lectures because they may find the same material on the VLE"*
Technical aspects	Computers and network	*"technical problems may impede use"*
		"you can't connect any time"
		"a computer and the internet are not always or everywhere available"
		"unfortunately, not everybody has personal computers"
	Software	*"the Moodle platform has to be improved and updated"*
Eliminated disadvantages	No indication of disadvantages	*Disadvantages were not indicated*
	Absence of disadvantages	*"no shortcomings have been encountered"*

The analysis of qualitative research data on disadvantages of using VLE allowed classifying the responses on disadvantages into five categories: aspects of information quality, personal aspect, communicative aspect, technical aspect and eliminated disadvantages (Table 2). It should be noted that the aspects related to information quality were indicated as the most serious disadvantage of using VLE. Thus, the category of information quality is split into four sub-categories: accessibility of information, usefulness of information, reliability of information and change in channels of information accessibility. The students in the research emphasised that in the VLE *"information is not always updated and uploaded on time"* and consequently, *"not always all the information can be found"*. Moreover, the informants think that

"not all the information is useful" or even that there is *"a lot of unnecessary information"*. It is quite interesting that for some users the material presented in VLE *"is not <...> always reliable"*.

The category of personal aspect is grouped into four sub-categories: specifics of learning environments, habits of using computer, competence of information selection and teacher's computer literacy (Table 2). The informants indicate fatigue from computers or even "addiction" as drawbacks of using VLE. Despite the fact that the teacher presents the selected and sorted material, some informants find it difficult *"not to get lost in the abundance of information"*. Moreover, *"the material has to be frequently printed out"*. The above-mentioned facts can be linked to the individual way of receiving information or specifics of information analysis. Some participants in the research think that teachers' age is also a shortcoming of using VLE *"because elderly people face challenges seeking to master information technologies"* as well as the fact that *"not all teachers employ this programme to full extent"*.

The category of communicative aspect consists of the following sub-categories: qualified support, contact and attendance (Table 2). The abundant material provided to the students in the VLE by the teachers may encourage students *"to abuse the situation and not to attend lectures because they may find the same material on the VLE"*. However, at the same time a disadvantage is singled out that learning without *"human explanation"* can be complicated, particularly in situations, when *"sometimes there emerge questions, which can be explained only by an educator"*. Since VLE is aimed more at learning independently, the research participants emphasised *"absence of contact with people"*, the absence of *"communication with a live person"* as a disadvantage.

The category of technical aspects is divided into two sub-categories: computers and network and software (Table 2). Practical use of hardware and software slightly differs from theory. Practical use discloses the personal relations with technical equipment, which is influenced by the lifestyle, financial situation and others. The indicated disadvantages of using VLE include *"technical problems"*: *"a computer and the internet are not always or everywhere available"* or even *"unfortunately, not everybody has a personal computer"*. Several participants of the research even think that *"the Moodle platform has to be improved and updated"*.

The category of eliminated disadvantages falls into two sub-categories: no indication of disadvantages and absence of disadvantages (Table 2). A number of participants stated that *"no shortcomings have been encountered"* or have not indicated any disadvantages, which was regarded as seeing no disadvantages during the data analysis.

Discussion

University students, who individually plan their time, see the convenience of studying and compensation of academic lecturers as important advantages (Table 1). If the student cannot take part in the lecture, necessary information is available on the VLE. In such a way, the learning process does not lose quality. The student can attend the next lecture possessing profound knowledge from the previous class. VLE used by teachers provide students with freedom to choose where, when and how much to learn. These facts directly address the ideas and strategies of lifelong learning of the Bologna process.

The selected and sorted learning material on the VLE is considered an advantage. Some students expressed a wish to get material for self-education as well. The results analysed in the article comply with the results of the research conducted by J. Lipeikienė and T. Petkus that students express a favourable opinion about VLE because of the reliability of the information, its concentration and presentation in one place (Lipeikienė, Petkus, 2008). The above-mentioned convenience is created by a competent teacher. In the processes of technologization (Common European Principles..., 2009), M.S.J. Gregory, J.M. Lodge (2015) and R. Andersone (2016) envisaged an increase in the teacher's workload, but this creates represents obstacles to application and development of technologies in studies. Success of technologization directly depends on the teacher's attitude towards application of technologies in higher education. Therefore, the teacher needs constant support from the educational institution (Price, Kirkwood, 2014; Englund, Olofsson, Price, 2017; Butrimė, Zuzevičiūtė, Vitkutė-Adžgauskienė, 2015). There arise contradictions at this point. On the one hand, striving for accessibility of studies, certain convenience for the student is created. On the other hand, the student is as if deprived of opportunities to critically evaluate the situation and information or to make well-reasoned choices. The student's individuality is eliminated, and international documents

(student's activities in the learning process, critical thinking, life-long learning), educational practice and learners' attitudes create a mirror effect. We see the same phenomenon only in the reversed way.

It is interesting that the aspects of information quality are indicated as the largest disadvantage of using VLE by the research participants (Table 2). Although the reliability of information was pointed out as an advantage because the teacher had selected and sorted it and all students have to do it just to use, analyse and apply it (Table 1), some informants doubted the reliability of the presented information (Table 2). The research results allow concluding that not all students possess the abilities necessary to select information in the abundance of it, even if this information has already been sorted. The mentioned facts require more comprehensive additional research. However, in the current situation they create a reversed mirror effect.

The student in the beginning of the 21st century gives priority to the material in the virtual environment over books (Dislere, 2012; Vronska, 2016). It should be noted that some of the students in the research tend to print out the material presented by the teachers on VLE. They see it as a shortcoming of VLE. This can be predetermined by the individual learning style or processing of information. The latter contradictions comply with the conclusions presented by the researchers (Butrimė, Zuzevičiūtė, Vitkutė-Adžgauskienė, 2015; Gulbinskienė, Masoodi, Šliogerienė, 2017) that students sometimes fail to conceptualise the tools of electronic studies as suitable for learning and they do not perceive a virtual university environment as an integral part of their real university.

Generalising the analysis of Bologna documents and qualitative research data, it should be stated that political decisions build up the environment of studies, where the participants in the education process function. Political ideas in the practical activity cause contradictions, ignoring of which lead to results that do not comply with the strategic goals. While increasing the accessibility of studies and developing lifelong learning ideas, attempts are made to improve the life quality, social and economic wellbeing, to increase the competitiveness of the country. However, instead of the culture of creators, the mass culture is created more. The reversed effect to the objectives of educational policy can be created by: 1) insufficient attention to human resources: too high time costs of highly qualified specialists for technologization, inappropriate distribution of workload; 2) trivialisation of the study process: too much of attention to technologization, understatement of interaction among participants in the educational process, too formalised implementation of goals; 3) transfer of individual's responsibility to an institution. The present reality reminds of a reflection of goals provided for in the documents that regulate education: as if everything is all right but at the same time it is as if to the contrary, as if something is on the wrong side.

Conclusions

The idea of lifelong learning encourages processes of technologization but too much concentration on technological solutions may delay the idea of the emergence of electronic studies. Technically the accessibility of studies is developed but the personal individuality and exceptionality of individual needs are trivialized to convenience of learning when the place and time for learning can chosen. If the main focus of study is diverted from personality growth, building up of the individual's values and worldview to technologization exclusively, a passive consumer society, whose members are not ready to assume responsibility and do not justify the essential idea of higher education, is developed. Unbalanced workload of highly qualified specialists in higher education institutions does not create the anticipated economic value, economic and social wellbeing or added value. The strategy for harmonisation of human resources firstly requires a non-material value-based attitude towards higher education. Appropriate distribution of responsibilities establishes conditions for the development of culture and building up personalities.

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Learning Self-Reliance and Responsibility from the Point of View of Existentialism

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Abstract: As a result of the increased amount of information the importance of its independent, critical evaluation is increasing, so that the knowledge learning would not be replaced by the accumulation of information. The responsibility for and the ability to evaluate information independently are relevant as learning outcomes of education for sustainable development. Responsibility and self-reliance as important areas of human life are the focus areas of the existentialist approach; still, this approach is very little used in pedagogy. The results of this research substantiate the topicality of the existentialist approach in modern humanistic pedagogy, in which the emphasis is placed on the personal significance of the learning process. The main aim of the article is to analyse the learning of self-reliance and responsibility from the point of view of existentialism and to evaluate the conditions of its realization in pedagogical practice. The study was done by combining the results of the author's previous empirical research, observations in pedagogical practice and analysis of the scientific literature. In the minds of Latvian adults, their self-reliance and responsibility are integral components of both the quality of living and the meaning of learning. With age, there is a growing tendency to associate self-reliance not with independent thinking, but with independence and, consequently, existential concerns about the possibility of its realization. An important existential aspect of the learning process is: the distinction between learning to be self-reliant and responsible and learning to find a place in the network and function in pursuit of personal safety and worth. Self-reliance as a relative independence from security, belongingness and recognition and responsibility as an awareness of one's impulses, feelings and attitudes are related to the survival of existential loneliness and overcoming anxiety. Learning self-reliance and responsibility means learning self-reflection, learning to meet oneself, getting to know one's interests and the factors that cause fear, rather than diverting attention to others to information that helps to justify oneself.

Keywords: self-reliance, responsibility, experience, existentialism, sustainable development, adult education.

Introduction

In the first decades of the 21st century, there is a debate about the amount of information generated daily in comparison to the amount of information generated from the dawn of civilization to the last century, but everyone is certain that it's being produced increasingly quickly (Flint, 2011). However, information as a form of signs or signals that express a message or represent meaning is not yet knowledge, which is a wisdom that can be used in different contexts. In fact, information obtained without personal subjective experience creates the illusion of the existence of knowledge. Daily one can observe how people who try to obtain as much information as possible are exposed to the "universal truth" created by the media – how one needs to correctly behave, dress, think, etc. Despite the fact that such a "universal truth" distances one from oneself, from one's self-awareness, in the spirit of the enlightenment effort of classical philosophy, it is still practiced in schools as knowledge learning. Furthermore, learning of universal examples often occurs outside school – publicly communicated media assessments tend to attract the audience more strongly than academic findings in educational institutions. The study of media literacy in the education curriculum in Latvia concludes that the skill to find information in different sources and the skill to analyse the obtained information are purposefully developed in the expected learning outcomes. The development of the skills of evaluating the credibility of the obtained information, however, is little paid attention to (Andersone, Helmane, 2019, 15). However, the ability to evaluate information independently, critically, is relevant in the context of sustainable development. Education for sustainable development envisages such learning outcomes as critical and systemic thinking and a sense of responsibility (What is Education…, 2020).

The students themselves want a supportive and understanding teacher, they want a creative learning environment in the classroom, but at the same time they are reluctant to take responsibility for their own learning activities. In their practice, Latvian pedagogues have faced a problem – when learners "get stuck"

on a type of task or problem, or a question, they do not seek for new, innovative and creative solutions to problems in the study process. Even if the study subject 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 (Marcenko, Dislere, 2017, 367). Clearly, the teacher still has to confront inert ideas in the formal education system. This formal education is discovered to be cognitively oriented and neglecting other essential dimensions of human life (Badjanova, Ilisko, 2014, 27). The methodology of this system contains answers that the students repeat without deliberation. The passed exams and the received grades, in turn, convince the students that they really know and understand what is important and, hence, encourage them to think that they themselves are important. As a result, the educated are well informed, but have lost the ability to think independently.

In the 20th century, an anthropological direction has been marked in Western philosophy, which is characterized by the liberation from ideology, prejudices, idols and previously given meanings. This direction is most fully represented by existentialism, for which the liberation of human creative potential and existence is important. Unlike other philosophical concepts in existentialism, human existence is before essence – there is no human nature, no absolute essence (Sartre, 2018). One cannot live life according to an example given to the species as in the animal world, one must live on their *own*. Such a state of being thrown into the world makes a person feel insecure and constantly look for ideals, some "absolute", to which one can attach to. Historically, people have often succumbed to ideologies that have strong authority or high numerical support. Nevertheless, the submission of one's mind to an ideology does not bring complete inner peace and satisfaction. Thus, a human being is the only "animal" whose existence poses problems that one needs to resolve, and which cannot be avoided (Fromm, 2013). Any achievements are enjoyed only for a short time; thereafter, the dichotomy created by one's mind makes one feel dissatisfied again and look for new solutions, new achievements. To develop and shape one's world in which one can feel in accordance with oneself, it is subjected to such existential dichotomies as life and death, independence and dependence, responsibility and destiny. Although resolving contradictions is the basis for creativity, education based on Aristotelian logic encourages people to strive for non-contradiction in their daily lives.

The existentialist approach focuses on important areas of human life such as freedom, responsibility, self-reliance, the meaning of life and death, but this approach is still very little used in pedagogy. Hence, the author puts forward the aim of the study: to analyse the learning of self-reliance and responsibility from the point of view of existentialism and to evaluate the conditions of its realization in pedagogical practice.

Methodology

This study is based on:
- the results of three empirical studies in which the perceptions of Latvian students (aged 20-24) and seniors (aged 70 years or more) on the sense of learning and on the quality of life, its contributing and restrictive aspects (Veide, 2016; Veide, 2018; Veide, 2019) have been clarified;
- the analysis of scientific literature – for the research methodological basis choosing existentialism (Heidegger, 2010; Jaspers, 1999; Kierkegaard, 2013; Sartre, 2003, 2007, 2018) and findings of humanistic and existential psychology authors (Allport, 1960; Fromm, 2013; Maslow, 2013, Yalom, 2020);
- the observations by the author himself in his pedagogical practice.

The data will be used to answer two practical research questions. 1. What is the understanding of self-reliance and responsibility by adults, and what is the role of existential aspects in it? 2. What promotes and what limits the learning of self-reliance and responsibility nowadays in society? The next part of this article is structured according to these questions.

Results and Discussions

1. One can notice that in social networks many young Latvian people like to write down "school of life" as one of the educational institutions they have attended to. This indicates the importance of one's own life experience. However, as everyone has their own personal experience, such experience does not yield to any of the patterned assessments required by the education system. The philosophy of life that predates existentialism includes life experiences and feelings in an organized list of sciences of mind

(Geisteswissenschaften). According to W. Dilthey life experience is the skeleton of our existence, representative and comprehensive knowledge (Dilthey, Makkreel, Rodi, 2010). This knowledge cannot be the same for everyone since everyone has their own physical and mental preconditions and the events experienced are also different. The objectivity of W. Dilthey's sciences of mind is to be found in the knowledge that requires absolute subjective experience. Existentialism continues to emphasize the importance of subjective experience, linking it to independent choice and responsibility. Nowadays educators define existentialism as a belief that is focused on a personal, subjective experience where the world of choice and responsibility are primary (Webb, Metha, Jordan, 2017, 424).

In any field that can be learned within the curriculum, specialists and analysts define concepts, create categories, classifications and schemes. However, following specialists and agreeing with scientists, the student only explains and develops their theories, their dogmas, their knowledge, still not understanding oneself – what one is learning. To understand oneself, society and the world, to become a self-reliant, capable personality, of course, one may need help, suggestion and some scale. However, no other human theory, whatever it may be, can replace one's personal experience. The idea that mentioning something does not yet mean knowing, but to know one needs to experience it first, is not new. This is one of the basic postulates of Gnostics about cognition. In the dialogue "State" Plato has described the essence of the learning process by comparing the attempt to put knowledge into the human soul to the attempt of making one who was born blind (Plato, 2016, 197). B. Fülgraff refers to education in general, mentioning that education is always a person's own activity: "I cannot be educated, I can only educate myself" (Fülgraff, 1993, 79).

Subjective experience and self-reliance are also determinants of a sense of life quality. Empirical research shows that the most important condition for life quality in the minds of the Latvian population is the person oneself with own personality traits, such as: ability to live in harmony with oneself and loved ones and self-reliance (Kalvans, 2013; Veide, 2016; Veide, 2019). In terms of content, two different interpretations can be found regarding the topicality of self-reliance – it can be independence in judgments, i.e., independence from public opinion and adherence to one's own beliefs (more often relevant for young people) and independence from peers (relatively more often relevant for seniors). Since the ontological basis of human existence is in temporality, in the finality of man, time becomes an important characteristic of one's existence. The understanding of self-reliance as independence alternates with the issue of time, which is one of the most frequently mentioned limitations of life quality. For young people, who strive to "stand on their own feet" and become independent of their parents, time is lost and never sufficient, while seniors are increasingly worried to become dependent on carers as a result of the lost time (past "years of strength"). A condition of life quality such as health in the minds of seniors is also important because it enables them to be independent from others, i.e., to take care of oneself (Veide, 2019). The most common learning goal in the minds of both students and seniors is self-improvement, self-development, and it is largely influenced by the dictates of time, i.e., learning to develop oneself in order "not to lag behind". Important quality of self-development, which one already has, or one is still mastering, is the achieved self-reliance and responsibility, the ability to deal with one's emotions. For seniors it is mainly: learning to be honest. It points to a deeper understanding of one's responsibilities that come with experience acquired over a longer period of time – "what you sow is what you will reap". However, even when thinking about the meaning of learning, self-reliance is quite often understood simply as independence – "so as not to obey anyone" (Veide, 2018).

In glossaries of terms, self-reliance is also explained as independence from others, as the ability to exist without the help of others. However, it can be seen that no one is and cannot be completely independent. No one can even breathe independently of what is around them (for example, plants, which, unlike humans, "inhale" nitrogen and "exhale" oxygen) and what is happening at this moment (for example, from lung function and the factors that have a continuous impact on it). Nevertheless, the illusion of independence is widespread. People tend to emphasize their independence in communication with each other, for example, independence from smoking, computer games, parents and members of the other gender. Independence is also proclaimed as something positive on a national scale – it is celebrated as a holiday. Seemingly, this is because one's independence from something is an essential component of one's "positive" self-image. Seeing the illusoriness of one's independence would mean losing one's self-image, which would be like death, because what is considered one would actually die.

In the pedagogical process, it makes sense to talk about self-reliance as a relative independence from the social environment – as far as the individual's needs for belongingness, recognition and security are concerned, which can only be met with the participation of other people, i.e., only from the outside. The fact that the individual different has to fight for oneself in the social sphere is already described in J.J. Rousseau's works (Rousseau, 2016; Rousseau, 2008). In the 20th century the submission of an individual to society that forces one to live according to the established norms is noted by existentialists who postulate that in fact it is not the society that creates an individual but the society itself arises from individuals who chose who they want to be and chose what a person should be like in general (Sartre, 2003, 260). Nevertheless, nowadays a human being often does not choose oneself but a function and own belongingness. When deciding how to best deal with a certain situation, one bases its decisions on the principles postulated by the authorities, the rules of conduct set by an institution, or the judgment of another person (either a friend or a world-famous and financially successful footballer, or a fashion designer). The apparent "self-reliance" manifests itself only in the independent choice of one of the aforementioned examples. Such "self-reliance" is safer because it promotes adaptation and belongingness to the social environment. There is, however, a fundamental difference between independent and adaptive activity – the former serves individualization, the latter – tribalism (Allport, 1960, 34). A self-reliant person may not have adapted to the social environment and culture, but is certainly not a conformist.

The ideas of existentialism contribute to solving the issues related to responsibility in pedagogy. J.P. Sartre has pointed out that responsibility is a need that trivially stems from our freedom (Sartre, 2018). It can be noted that almost any religion offers rules by which death can be avoided. Such rules not only provide comfort when anxiety about one's disappearance is felt, but also authority – religion seems to take responsibility for the individual. It "saves" a person from a frightening confrontation with own personal freedom. However, this does not mean that the possibility of transferring responsibility for one's own life is only possible in religious schools. Atheism disputes the existence of God, but not the notion that the essence — the once-given, ready-made nature of man — precedes existence. If this is the case, then the scientist, as the expressor of the mysteries of the universe, in a logical form becomes entitled to think in place of other members of society and "enlighten" them. Since the beginning of modern culture, such tendencies of spiritual guardianship have appeared in many fields, such as psychology, philosophy, politics, ethics, and especially pedagogy. In the world of science, the message "scientists have discovered that..." becomes a truly relieving message of joy to an individual fleeing from one's own freedom and responsibility.

Adults' understanding of responsibility is reflected in their pedagogical attitude towards children. By participating in the promotion of the child's development with the most noble goals, the adult forms the child's personality in accordance with the own idea of the expected improvements. In fact, such a parent or educator is driven by an interest in what the child should become, rather than an interest in the sometimes difficult-to-understand personality that the child already is. The ideal becomes more important than the existence itself. In turn, any discrepancy with the desired ideal first causes internal dissatisfaction, and then leads to the search for the culprit outside – "bad educators", "frivolous parents", "wrong education system", "uneducated children". It is based on mixing responsibility with duty and the idea that one person may be responsible for another. If there are no rules, no pregiven values and ideals to strive for, then nothing in this world has any meaning other than what the individual has given oneself. Then everything that exists in own life is self-created, and no one else can take responsibility for it. The only remaining thing is to realize it. It is unlikely that an educator's selfish intent would be found if he or she tried to help students become aware of themselves in the learning process. However, such an awareness of the construction of one's essence and one's responsibility is frightening. This awareness is subjectively experienced as emptiness as a loss of foundation (groundlessness). Human responsibility is associated with existential oneness, which is felt as a separation not only from other people, but also from the world as it is usually perceived. Existentialists note this basic anxiety of groundlessness as even deeper and more profound than the fear of death (Yalom, 2020). That is why many people, since childhood, are looking for something bigger, more grandiose than themselves – a type of structure or authority. And the education system as a grandiose structure provides such an authority. The accumulation and systematization of information, often referred to as education, actually offers the student a refined way of fleeing from oneself. In this connection, J.P. Sartre points out the inherent anxieties and the feeling of abandonment (Sartre, 2007). Abandonment is linked to the fact that in the absence of any pregiven a priori moral values and instructions, nothing can justify human action. Man has not created oneself; one has been thrown into the world and yet he / she is responsible for everything one does. One is doomed, "the

condemned" to be free. Concerns, in turn, are related to responsibility for one's choices. A person who decides something and is aware that he / she chooses not only own existence but also all humanity cannot escape a deep sense of responsibility. Those who feel that they are not worried hide these feelings, run away from them. Worries do not disappear if they are hidden. S. Kierkegaard compares these worries with Abraham's worries, referring to the test of Abraham described in the Old Testament (Genesis, 22.), in which God makes him sacrifice his only son (Kierkegaard, 2013, 37). If I hear a voice, then only I can decide if that is an angel's voice. If I consider an action to be good, it is I, and not someone else, who decides that it is good, not evil.

2. There is a paradox in students' perceptions of learning: in their opinion, it makes sense to self-develop, to become more self-reliant and, at the same time, to adapt (Veide, 2018). This is due to the fact that self-reliant students understand not critical thinking but the widely proclaimed and positively valued independence. Primarily for students this is independence from their parents. This independence also means the opportunity to better integrate into society, i.e., to adapt and to meet the need for belongingness. At the same time, students experience doubts about the meaning of learning. Young people are solving a dilemma: to adapt to the accepted beliefs in society about the need to achieve economic success in the light of competition *or* to maintain self-reliance by clarifying one's personal meaning in the learning process. Emotionally, this dilemma is accompanied by the fear of losing. However, self-reliance is directly related to the loss, starting with the very first experience, which is acquired with the loss of the mother's physical closeness. Similar to the loss of a safe environment at the moment of birth, also later in life the loss of security is a cost for the possibility of further development. In this way, the readiness to lose, to fail, the readiness to accept insecurity, loneliness and denial bring people closer to self-reliance. On the contrary, the fear of losing security, belongingness and recognition, which forces one to obey external laws, adapt and orientate to others, distances one from self-reliance. When trying to regain the security once lost, reference groups and social affiliations are still being sought.

Fear of loss and pain hinders new experiences. Research by psychologists shows that in everyday life people spend significantly more effort to escape a loss than to gain something equivalent to the loss (Baumeister et al., 2001). People are happy to accept new ideas, adapting them to their existing views. However, they do not want a new experience because it threatens to undermine their beliefs based on their past experience. According to the observation of D.H. Lawrence, "the world fears a new experience more than it fears anything. Because a new experience displaces so many old experiences. And it is like trying to use muscles that have perhaps never been used, or that have been going stiff for ages. It hurts horribly" (Lawrence, 2011, 41). Pain stands between a person's experience and one's ability to feel it, live through it, and, therefore, learn from it. Seniors aged 70 years or more, looking back on their lives, tend to note suffering (e.g., sickness, deportation) as important teachers in life lessons, while young people think of learning from a difficult life challenge significantly less often (Veide, 2018). Instead of perceiving pain as a teacher, or as an indicator that something has not yet been understood, one uses pharmaceuticals nowadays to fight against pain. Pain in people's minds has not always been something terrible, as an unfortunate mistake, something that should be changed at all costs. In earlier ages, people have been able to see pain as a way to something new, as an important lesson (Rohr, 2017). The free choice to be made at every moment of life, which J.P. Sartre talks about, in this context is the choice between development and security.

Self-reliance as a relative independence from the requirements of the social environment does not mean that one should disregard them or limit communication. External demands can be very well identified and respected, but identified directly as *external* demands, without confusing them with own interests, responsibilities or the voice of conscience. Getting rid of the attachment to own immediate environment means choosing creativity instead of duplication. When a person stays with oneself, the opportunities to base one's attitude on the patterns of the immediate environment disappear, to take over the existing ones disappear, hence, the only possibility is to re-create. Creativity promotes openness to the world. However, this lack of self-reliance becomes a constraint on sustainable development for today's busy individuals. In the 19th century classical philosophy, creativity is associated with reflection – the creative mind follows the setting: "Observe and know yourself!" Respectively, the development of one's mind is achieved by establishing a self-observing view of one's life. This self-reflection of the cognitive mind is like a conscience that gradually replaces confession in pedagogic theories from the 19th century onwards. For example, in the pedagogical literature of the early 20th century, following conscience is mentioned as a necessary condition for a person not to contradict oneself (Hessens, 1929, 71). Today,

on the other hand, confession and conscience are being replaced by admissions. Moreover, if confession to a religious person seems necessary for organizing one's life, and if the conscience of a secular person is an inseparable inner voice, then admission to a modern person might seem like a fall – mainly due to *external* reasons. Confession does not seem necessary; it is rather associated with a loss. Modern philosophers have found that the postclassical age has opened the human being up to the market, information, sexual relations, but closed one to deep thoughts, reflection and justice (Kule, 2006, 103). Reflection of mind, deep thoughts or listening to one's conscious occurs in a solitary meeting with oneself. However, this meeting is not pleasant because it makes one feel one's loneliness, insignificance and powerlessness in the face of old age and death. Therefore, the individual tries to focus all attention on the outside – on the market relationships and on information that would help one to justify oneself.

Turning one's attention from oneself to others is related to responsibility. If the educator believes that he/she is responsible for the student's learning, then the educator automatically activates a motive, the satisfaction of which is linked to the student. Responsibility becomes an obligation – the teacher needs the student to learn. Unknowingly, the teacher has created a dependence on the student. The teacher is no longer free. His / her passion and enthusiasm become dependent on the external social environment. The educator is now able to feel excited about the own work only if the student achieves certain results or is excited about the pedagogue. The teacher can no longer like the student as such – as a personality. The teacher becomes able to feel sympathy for the student only in response to the student's sympathy for him / her. Similarly, a student who has started studying with a real interest and joy of cognition loses it over time, increasingly often thinking about the study work as a duty. In pursuit of one's significance, all life – even waking up in the morning, can become a duty that has to be done as if by force. In this way, both taking responsibility for one's own experiences and life satisfaction are suppressed.

In a social environment where there is a perception that one person's responsibility for another is possible, it is almost impossible to expect its development in children. To protect their children, adults often make choices for their children. There is no denying that in this way they are actually taking real significant security measures. However, without personal choice, due to the lack of independent decisions, a person (at any age) loses faith in oneself, moves away from own impulses and feelings, from own attitude to everything, dissolves own personal motives in generally accepted standards. In addition, adults, who to help and support students, carry out their homework on their behalf, actually teach them that it is acceptable to show someone else's work as own and that it is more important to gain external satisfaction (good marks and praise from the teacher) than to understand the meaning and learn by essence. Independence from the social environment is characteristic for self-actualized people, who are happy to think alone and submit mainly to their own internal determinants and not to those of other people or society (Maslow, 2013). Greater internal independence from the point of view of others is associated with less fear of others and, consequently, less hostility towards them. Self-reliance manifests itself in not caring about receiving prestige, awards, honours, praise or positive evaluation. In this way, a system that expects that pupils or students pursuit for good grades does not promote the development of self-reliance. On the other hand, the education system based on the scheme of operant behaviour does not work in the case of an independent self-actualized individual, because the activity of a self-reliant person is not so much determined by external as internal stimuli.

Responsibility, like guilt, is a consequence of self-confidence, i.e., one's self-awareness. A person is guilty not only of crimes against other people, not only of violating moral or social laws, but also of crimes against oneself. According to M. Heidegger: being guilty also has the signification of "being responsible for" that is, being the cause or author of something, or even being the occasion for something (Heidegger, 2010, 282). A person is responsible not when one thinks that he / she owes someone or feels guilty in front of someone, but when one is aware of oneself. It can be said that from the point of existentialism learning to be responsible means learning to live in the present (Jaspers, 1999, 65). When an individual does not lose oneself in the past or the future, one begins to realize own responsibility in everyday life – for own impulses and feelings, for own lifestyle and aspirations, for own attitude towards other people, for own closeness or distance with them, for all small and large decisions that are important not only for oneself but also for the historical course of events. Responsibility learning is also about daring to ask important (existential) questions, given that the answer may not coincide with the goals of one's *ego* or that one has to wait a long time for it. Therefore, it is adequate to rely on the desired

outcome within the limits of own activities, but not on other people, because they are also free (in their choice at every moment). J.P. Sartre calls it action without hope. Hope is always based on desires and fears. So acting without hope means, firstly, acknowledging one's interests and, secondly, not succumbing to one's fears. Losing the last hope can become a cause not only for depression, but also to start a fuller, more authentic and responsible life. Dante's inscription at the gate of "The city of woe": "All hope abandon ye who enter here" can be difficult to accept. However, it can be perceived not as a curse, but as a blessing: getting rid of the future possibilities that bring suffering allows one to finally start living in the present that K. Jaspers writes about, and takes responsibility. When choosing to take responsibility for one's current experience, one uses this experience in a constructive way – to learn.

Conclusions

- Both young people's perceptions of life quality and their perceptions of the meaning of learning show the importance of their self-reliance. At the same time, they show existential concerns about the possibility of its realization to the extent that self-reliance is interpreted as independence from others. As such concerns are more common in the senior group, it can be concluded that over the years, the tendency to associate self-reliance not with critical thinking, but with independence increases. This, in turn, indicates the topicality of examining self-reliance and the interpretation of its learning.

- In pedagogy, self-reliance should be seen as self-actualized person's relative independence from the social environment – as far as the individual's needs for security, belongingness and recognition are concerned, which can only be met with the participation of other people. Thus, it may take the form of not caring about receiving a positive evaluation (good grades).

- Learning from the point of view of existentialism means not so much an external activity as an internal one. Learning from this point of view is not the acquisition of the right knowledge and methods, but a contemplative and self-directed experience. From the point of view of existentialism, what hinders sustainable development is basically the attractiveness of the idea of security – a desire to protect oneself from the threat of possible pain and loss. It is important for the educator to see and understand not only the development and its benefits, but also the fear of development.

- Responsibility is associated with the experience of existential loneliness and overcoming anxiety. Learning responsibility is mainly hampered by confusing it with duty and the idea that one person may be responsible for another. A person is responsible not when one thinks that he / she owes someone or is afraid of becoming guilty in front of someone, but when one is aware of own impulses, feelings and attitudes.

- There is an internal struggle in young people's perceptions of learning: to adapt to public perceptions of the need for economic success in a competitive environment or to maintain self-reliance by clarifying their own personal meaning in the learning process. In this context, the following existential aspects of the learning process should be considered as important: 1) distinguishing between learning to be self-reliant and responsible for learning to find a place in the network and to function in pursuit of personal security and benefits, 2) the opportunity and the courage to doubt and ask.

- Willingness to accept insecurity, loneliness and even denial, which results in less fear of others and thus communication becomes freer and more open, which in turn promotes a willingness to cooperate and collaborative decision-making, brings people closer to self-reliance.

- Learning self-reliance and responsibility means learning self-reflection, learning to meet oneself, getting to know one's own interests and factors that cause fear, and not to divert own attention from oneself to others, to information that would help to justify oneself. In turn, meeting oneself is related to raising existential questions that are important to oneself, the answers to which can be obtained only through conscious subjective experience.

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The Influence of Transformations in the Modern Labour Market on Foreign Language Courses at Universities

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Abstract: The topicality of the study is determined by the discord between the foreign language teaching standards in Russian universities and undergraduate and graduate students' requirements oriented towards the modern labour market. Having obtained a specialty, university graduates may work in different fields or change their job profile altogether; the borders of professions and professional standards are undergoing changes as well. The aim of the study is to show the necessity to transform foreign language teaching standards at the university level in accordance with the recent and ongoing changes in the job market. The hypothesis of the study is that foreign language teaching standards in Russia should integrate communicative competence, critical and creative thinking, and learning to learn as necessary components. It is suggested that students of non-philological specialties should be taught two or three foreign languages instead of only advancing their command of English. The hypothesis was confirmed by the polls conducted among undergraduate and graduate students of the College of Asian and African Studies (CAAS, Lomonosov MSU), over 2019-2020. The study resulted in developing a new standard of teaching foreign languages at the CAAS, which includes teaching two European languages alongside an oriental/African one, and creating a new structure of the English language course oriented towards developing soft skills rather than a purely linguistic component. Thus, the study seeks to substantiate the need for the new standard by the requirements of the modern job market and graduates' demands. Creating the new standard targeting soft skills development and teaching two European languages is a practical result of this work.

Keywords: labour market, soft skills, foreign language curriculum, communicative competency, learning to learn.

Introduction

The past 20-25 years have witnessed significant changes in the world of labour and professions. If earlier it was typical of a person to acquire a qualification, find a job and seek professional growth making a career at one enterprise, now it is often possible not just to change several working places over one's professional life, but to move to a professional sphere which is not connected directly or at all with the received education. Interdisciplinarity is frequently cited as the main transformation in the sphere of profession, science and art, as well as the fact that many professions and occupations overlap. Information openness, intrusion of new knowledge and technologies into habitual professional standards presuppose the ability to work fast with new information and flexibility in any occupation. In this respect the question arises increasingly frequently in the context of higher education not only about graduates having professional content knowledge, i.e., an aggregate of knowledge and competencies which are present in their profession the moment they graduate, but also their possessing certain qualities and skills which transcend the borders of conventional jobs. These qualities and skills are referred to as soft skills or transversal skills, i.e., skills that are necessary in many occupations or 21st century skills (although there are many other terms). Soft skills are becoming crucial in training a specialist. Knowledge has become, on the one hand, quite accessible in the information society, on the other hand – not as determinant as soft skills. The latter include both cognitive and non-cognitive abilities which promote individual success in life in the study, work and other areas of the so-called "adult responsibility" (Pellegrino, Hilton, 2012). The main thing is the ability to perceive and acquire new knowledge, rather than have the ready-made knowledge at a certain moment.

The World Economic Forum conducted an event in Dubai, in March 2015, which focused on education. It resulted in compiling a document identifying 16 key skills for the 21st century. These skills are placed into three categories – basic literacy, competencies and personal characteristics. (World Economic Forum, 2015)

As for universities, they can formulate their own set of soft skills which they regard essential for their students to acquire if they want to be in demand in the labour market. It may be managing personal finances

or time, or the ability to resolve conflict and accept positive criticisms. However, this list will inevitably include communication (both written and spoken), team work (collaboration) and critical thinking.

Artificial intelligence, automation and robotics, biotechnologies and advanced materials are already transforming and disrupting the world of work (Webster, Ivanov, 2020). A report by the World Economic Forum "The Future of Jobs 2020" (World Economic Forum, 2020) demonstrates that critical thinking and creativity are becoming increasingly important for 2020. According to employers, emotional intellect will acquire a greater role later on. In 2022 such skills as memory and verbal abilities (reading, writing, active listening, speech) will be more in demand. This is undoubtedly the sphere of foreign language teaching. They not only must be, but also can be taught while developing professional communication competencies.

In the context of foreign language teaching, competencies in the scheme of 21st century skills are of particular interest, i.e., critical thinking, creativity, communication and collaboration, although some personality traits – curiosity, determination, adaptability, social and cultural awareness – can also be developed through certain approaches, the choice of curricula and methods of teaching.

Recently there has appeared The Cambridge Framework of Life Competencies, which is itself based on a large body of research. The CFLC pertains to human functioning in various spheres of life, but is not bound to specific content areas in which people learning or using a foreign language specialize. One of the key terms is "competency" which is defined by the Council of Europe as a mix of knowledge, skills and attitudes where:

- knowledge – facts and figures, concepts, ideas and theories which are already established and support the understanding of a certain area or subject;
- skills – ability and capacity to carry out processes and use the existing knowledge to achieve results;
- attitudes – disposition and mind-sets to act/react to ideas, persons or situations (Council Recommendations…, 2018).

The Cambridge Framework includes the following competencies: creative thinking, critical thinking, learning to learn, communication, emotional development, collaboration and social development, with each competency having its component competencies. The first five competencies are the most relevant for this study.

Creative thinking is a complex concept which has proved difficult to define. There are some elements which are always present in a creative act: novelty, recognition and acceptance within the domain where they occur, relevance and practicality (Maley, Peachey, 2010). Some characteristics of creativity are thinking out of the box, imagination, cognitive flexibility, tolerating ambiguity or unpredictability, intrinsic motivation and joy from things previously unfamiliar. Three components of creative thinking are: participating in creative activities; creating new content from own ideas or other resources; using newly created content to solve problems (Cambridge Framework…, 2018).

Critical thinking refers to higher levels of thinking and consists of identifying links between ideas, analysing points of view and evaluating arguments, supporting evidence, reasoning and conclusions (Cambridge Framework…, 2018). The major components of critical thinking are: understanding and analysing the links between ideas; evaluating ideas, arguments and options; synthesizing ideas and information.

Learning to learn also comprises three components: practical skills for participating in learning, the so-called learning technologies; taking control and managing your own learning; self-reflection and self-assessment. (Cambridge Framework…, 2018)

The 21st century skills framework defines communication, or communication competency, as the ability to listen, comprehend, transfer and contextualize information via verbal, non-verbal, visual and written means. P. Cenere and co-authors regard communication as a critical skill for business professionals; it is definitely "more than reading and writing." "Good communication skills make us employable, regardless of the specialization we are choosing within the business world." (Cenere et al., 2015, xiii). It is also an "active process influenced by the complexities of human behaviour in which elements such as non-verbal behaviour and individual styles of interpreting and ascribing meaning to events have a significant influence. Mastering effective communication is a skill which can be developed and honed and is distinct from mastering the core linguistic features of language". (Cambridge Framework…, 2018, 5)

In the Cambridge Framework, communication comprises the following competencies: using appropriate language/registers for context; managing conversations; participating with appropriate confidence and clarity. (Cambridge Framework…, 2018)

Collaboration is the ability to work in a team striving to achieve a common aim, including the ability to prevent and manage conflict.

The Cambridge Framework for Life Competencies bases on three foundation layers: emotional development, digital literacy and content knowledge. The concept of emotional intelligence dates to 1990, when P. Salovey and J. Mayer defined it "a set of skills hypothesized to contribute to the accurate appraisal and expression of emotion in oneself and in others, the effective regulation of emotion in self and others, and the use of feelings to motivate, plan, and achieve in one's life" (Salovey, Mayer, 1990, 185). Since then the hypothesis has grown into a large body of research, which repeatedly proved that emotional intelligence can be more determinant for the worker's success in the labour market than IQ. It is noteworthy that interpersonal skills, that are part of EQ can contribute to companies' success as well as they lead to establishing productive working relationships, better collaboration and team work (Goleman, 1998; Mayer, Salovey, Caruzo, 2008). A number of works have shown emotional development to have a greater impact on academic and social success than cognitive abilities (Pope, Roper, Qualter, 2011). The three main components of emotional development are: defining and comprehending emotions; managing one's emotions, empathy and relationship building skills.

Emotional development should undoubtedly become one of the tasks of foreign language teaching, as studying diverse languages and cultures implies developing such qualities as empathy and tolerance towards other people's sentiments. The experience of overcoming cultural shock often increases general stress resistance.

The development of the above-mentioned competencies must concern practically all subjects taught at universities. That is why lately the term "educational technology" appears to be replacing the term "methods of teaching", the former including certain general principles of memory functions and attention – basic human abilities for mastering a certain information basis and applying it in practice.

Because of the pandemic of corona virus over the past year universities have been facing the dire necessity to implement the teaching of all subjects distantly. What has actually happened is adapting the existing traditional forms of teaching to various on-line platforms. However, it turned out that despite abundant electronic resources and apps, as well as the active use of video, it is hardly possible or even impossible to attain the same level of efficiency as in the face-to-face classroom, as far as foreign language teaching is concerned. It was noticed both by the teachers and the students who asked to be transferred back into the physical language classroom at the first opportunity. From the authors' point of view, it happens due to the absence of technologies of teaching suiting the on-line format, where attention and memory seem to work differently. Hence, it requires a different structure of the lesson, different types of assignments, and different forms of control. When learning on-line, the direct emotional contact between the teacher and students and students with each other suffers.

It is becoming obvious that the system of foreign language teaching in Russia should be transformed if we set an aim to produce students who are sufficiently prepared for the modern labour market. It is not a narrow specialization, studying terms, or reading specialty texts that are required but rather developing vital soft skills, which contribute to professional growth, mastering related areas of knowledge and using knowledge and skills from different fields. The authors suppose that studying several foreign languages will help solve many of the above-mentioned tasks, as it developing such vital skills as learnability by maximizing the work of memory and attention (Marian, Shook, 2012); creativity (Furlong, 2009); emotional intellect (through studying foreign languages in their cultural contexts), emotional competencies and foreign language enjoyment (Dewaele, Macintyre, 2014), critical thinking and other cognitive abilities through comparing different language systems (Keysar, Hayakawa, An, 2012; Bartolotti, Marian, 2012; Wallin, 2019) and clearly communicative competency, which presupposes studying language etiquette, rhetoric, correct interaction with various partners.

Recent research demonstrates that such transversal skills as critical thinking, collaboration competence and creativity can be fostered in the context of tertiary education when incorporated into the English language course (Sinkus, 2020; Tevdovska, 2015).

The aim of the study is to substantiate the need for the new standard of foreign language courses in the university in Russia by the requirements of the modern job market and graduates' demands.

Methodology

The job market requirements are the main reference point while rethinking the standards. The study identified the most in-demand soft skills based on the analysis of reputable research of the labour market and aims to determine whether these soft skills can be developed in a foreign language class. An important part of the study is the polls demonstrating that the students are interested in adjustments to the standards, namely, introducing two European languages and modifying the typology of tasks defined by the development of soft skills.

In accordance with the aim of the study the following tasks were set:
- to identify the attitudes of the undergraduate students of the 3d and 4th years of study to the prospect of taking up a second European language after completing an English language course of 5 semesters;
- to consider whether the 4th year undergraduate students and master students realize the significance of soft skills and to study which soft skills they consider most important;
- to study whether the respondents regard foreign language classes as a conducive environment for developing their soft skills.

The authors' hypotheses were that the students of the College of Asian and African Studies tend to be oriented towards language study and consequently should be interested and committed to studying more languages not only for enhancing their employability and career prospects in the future, but also for broadening their horizons and improving their cross-cultural communication, i.e., for self-development. Studying an oriental or African language is often perceived as exotic, it requires substantial investment in terms of time and effort but not necessarily is in demand in the labour market. English is learnt at school, quite often in a large volume, and many students will have already mastered it at the C1 or even C2 level by the time they are accepted at university. That is why the authors hypothesized that if the students were offered an opportunity to take up one more European language in addition to English as part of their curriculum, they would mostly feel positive about such a prospect. Besides, the authors supposed that the students should be quite aware of the importance of soft skills and would embrace an opportunity to see their development as one of the aims of their education in general and foreign language classes in particular. Thus, students should favour the prospect of seeing their foreign language course modified towards incorporating two European languages and developing soft skills rather than a purely linguistic component.

The results of the first survey were presented and warmly received at the conference "Languages in the Open World" held in Graz, Austria, November, 20-22, 2019.

The results of the second poll are being presented in this article.

Participants: Undergraduate students of the 5th and 7th semesters aged 20-22 (Mdn. = 21, 65 % female, 35 % – male) participated in the first poll (91 in total), while the second poll targeted the undergraduate students of the 5th and 7th semesters (25 respondents, aged 20-22, 67 % – female, 33 % – male) as well as master students in the 3d semester (20 respondents, aged 24-25, 60 % – female, 40 % – male) (45 in total), i.e., those who are already aiming at their career and realize the practical value of the received education. Sampling was random. Gender groups were not regarded separately.

Measures: The authors conducted two polls among the students of the College of Asian and African Studies of Lomonosov MSU. Both questionnaires were designed by the authors and drawn up in Russian, the mother tongue of the respondents. Both questionnaires consisted of questions of a close-ended, multi-choice type, presupposing the selection of one option out of several – 6 questions in the poll concerning the participants' attitude to the prospect of taking up a second European language, and 5 questions in the poll referring to the students' opinions of the importance of soft skills and their development in foreign language lessons. The first poll was conducted in September 2019, the second – September 2020.

Procedure: The questionnaires were typed out and distributed in class among the potential respondents who completed the questionnaires at leisure and submitted them in the teachers' absence. The answers were subsequently compared and analysed.

Results and Discussion

The first survey aimed to establish whether future orientalists wanted to take two European languages alongside their oriental/African one.

One hundred percent of the respondents considered the knowledge of two European languages necessary or very desirable (Figure 1). Sixty one percent perceive the command of English insufficient for communication in any sphere, while 69.2 % acknowledge that being able to speak two European languages may enhance their academic prospects, and 72.5 % - career prospects in general.
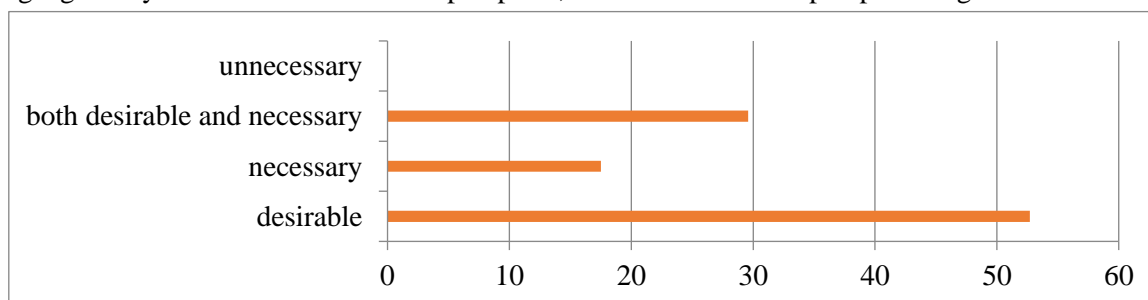
Figure 1. The respondents' opinion on whether knowing 2 European languages is necessary or desirable (in percentage of respondents).

The second survey concerned bachelor and master students' perceptions of soft skills required for furthering their study or career. There were four questions:
1. What is more important: theoretical knowledge, only soft skills or the combination of the two?
2. Which soft skills do you consider important: critical thinking, creativity, emotional intellect, learnability, collaboration or some other?
3. Is it possible to form and develop soft skills at foreign language lessons?
4. Is it necessary to assess the level of soft skills in the formative and summative assessment of the command of a foreign language despite the fact that these skills do not directly affect the mastery of a foreign language?

The responses to the first question demonstrated that the majority of participants (41 persons) consider the combination of theoretical knowledge and soft skills the most essential. Only 1 person pointed out the dominant significance of theoretical knowledge, and two more persons indicated that soft skills alone are more important.

Among the soft skills (critical thinking, creative thinking, emotional development, learning to learn, collaboration) the students selected critical thinking (31 answers) and learnability (27 responses) as the most important, closely followed by collaboration (26). Creative thinking and emotional intellect had practically the same number of votes (21 and 20 replies respectively) (Figure 2).
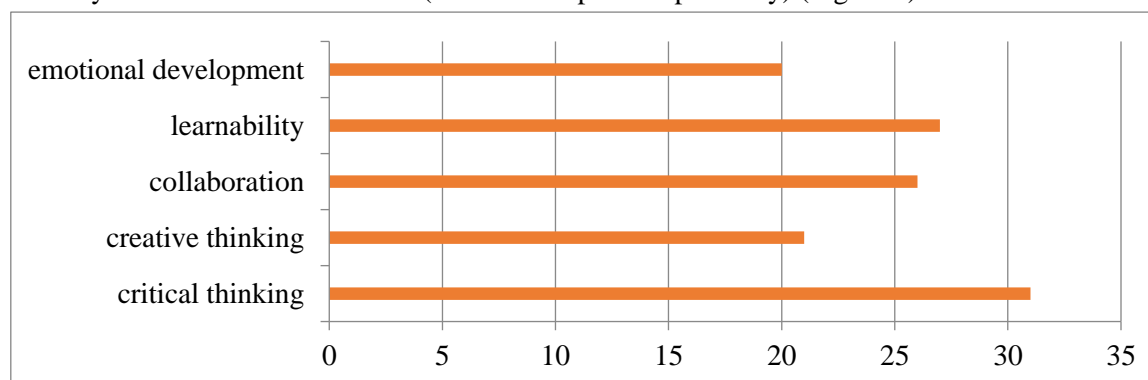
Figure 2. The respondents' opinion on the most important soft skills (in number of respondents).

While answering the third question, practically all participants indicated that soft skills can be and must be formed and developed in foreign language classes and 17 respondents regarded it as desirable.

When replying to the question concerning assessing soft skills via formative and summative assessment, most students (25 persons) gave the highest score to the necessity to assess skills and competencies directly related to the degree of practical command of a foreign language, not the soft skills. Possibly, the students feel somewhat fearful of their soft skills being assessed as there are no stringent criteria for assessing such qualities as creativity or teamwork. It is rather a psychological personality assessment where objective judgments are not possible.

The polls conducted among the students of non-philological specialties of the Lomonosov Moscow State University confirmed the authors' hypothesis based on the analysis of the existing foreign language teaching standards and the requirements of the modern labour market. The main conclusion made on the first stage of the research was the awareness of the necessity to transform the existing standards because of a discord between the aims and objectives of foreign language courses and the demands of the modern job market. It was necessary to determine the vector of change of these standards. The first poll demonstrated the desire of the students to study two European languages. The main cited reasons were: 1) the English language is insufficient for communicating in different professional spheres; 2) the wish to develop communicative competence comprising not just the language itself but also the ability to communicate in different cultures; 3) the desire to develop learnability that is connected, among other things, with developing memory, attention and ability to analyse language structures. The shift from purely linguistic teaching of languages, first of all, English, towards developing certain soft skills – communication competence, critical and creative thinking, learning to learn – became the main vector of transforming the content part of the teaching standards, the typology of activities and assessment. These soft skills are cited in the modern literature as necessary and essential for success beyond the language classroom in various areas. The students' polls confirmed their wish to develop these soft skills in foreign language lessons. Further research will focus on assessing the new standard, according to which the students started studying in the first semester of 2020, and on the polls of graduates and employers about the efficiency and demand for skills acquired in a foreign language classroom.

Conclusion

The main results of the study are the following:

- The need for rethinking the foreign language teaching standards for students of non-philological specialties and their adaption to the job market requirements has been shown;

- One of the vectors of changing the standards is to introduce a second European language, which is confirmed by the students' wishes and uncertainty about the English language being sufficient for professional communication;

- Developing soft skills is becoming a priority in class over a purely linguistic aspect of teaching, primarily, communication competence, critical and creative thinking and learning to learn;

- The practical result of the study is developing a new foreign language teaching standard for the College of Asian and African Studies, Lomonosov Moscow State University.

Studying a second and a third foreign language establishes a basis for the ability to control one's attention, to activate memory's reserves, as well as to develop critical thinking (while comparing language systems, communication blocks and culture codes). Working with large masses of information improves the work of memory, learnability and critical thinking skills while selecting the most relevant information. Tolerance towards other cultures and their carriers contributes to emotional development. All these soft skills easily integrate into foreign language courses which can successfully prepare undergraduate and graduate students to future challenges in the labour market if there is a modification in the conceptual approach, typology of tasks and forms of assessment.

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Competence development in adult and higher education

Corpus in Translation Classroom: A Case Study of Translating Economic Terms

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Abstract: The article deals with the role of corpus in translation and translation studies. The paper focuses on different aspects which should be taken into consideration when compiling a representative corpus. The researchers focus on the role the corpus of professional texts plays when choosing translation equivalents for terms, including just created and not yet registered in terminological dictionaries. The aim of the research is to elaborate the approach to the use of corpus material in the course of translation in specialized and professional fields, with particular attention to some aspects of translation competence development. The analysis based on the comparative, definitional and contextual methods proved that parallel text corpora provide professional experts, as well as students of translation, with reliable knowledge of linguistic units functioning and semantic meaning actualization within certain contexts in the Language for Specific Purposes (LSP) domain. The studies have shown that a comparative statistical analysis of a corpus of professional texts might be recommended when looking for an adequate equivalent for a term. The scope of application of the methodology suggested is not confined to certain terminological systems or fields of knowledge. The translation competence development that includes compiling text corpora and making adequate choices by students dealing with appropriate instructions on the part of the teacher, as the task concerns with high level of knowledge acquisition as refers to both linguistic and translation expertise.

Keywords: university education, text corpus, translation equivalent, translation competence, Language for Specific Purposes, interdisciplinary.

Introduction

While doing research in the field of translation one should precede from the premise that different demands of the communicative sphere, where it is used, serve to determine approaches and methods of translation competence development issues. For example, based on the thesis of the significant cognitive dimensions interaction, which includes knowledge, regulatory and problem-solving skills, situation awareness, as well as self-concept realization and psychophysiological traits, the process of translation is understood as a set of complex behaviours, which aims to solve problems of communication, where the use of at least two (spoken, written or signed) languages is manifested (Martin, 2014, 11). Otherwise stated, the problem of conveying a similar meaning in a different language tends to be multi-fold and comprises a number of aspects as referred to translation competence development. Things become further complicated as the information flow seems to be endless and increasing in its complexity and amount. With the advent of the Internet technology, this process has become even more intensive and barely manageable. At the same time, it was precisely with the emergence of new opportunities that the technologies and methods to facilitate and optimize the process of translation as well as to make it more effective have appeared. One of these approaches is concerned with the use of corpora for translation needs, including translation competence development in the course of learning and practical activities implementation.

As is well-known, the results of corpus studies are applied in both learning the language at all levels and in all its manifestations (Bowker, 1998; Dash, Ramamoorthy, 2019; Fligelstone, 1993; McEnery, Wilson, 2008; Sinclair, 1991), as well as in performing various operations with the language, one of the most important and the most difficult among which is translation, both regarding particular methods and techniques of elaboration (Castagnoli, 2012; Musacchio, Palumbo, 2010; *Salkie, 2002*), as well as in terms of the general concept of translation, with special reference to translation competence issues (Martin, 2014; Pietrzak, 2015; Xiao, Hu, 2015; Zanettin, 2014) and its role in the cultural, intercultural and cross-cultural awareness development, including its cognitive and conceptual basis investigation (Katan, 2009; Liddicoat, 2015; Raitskaya, Tikhonova, 2019; Snell-Hornby, Jettmarová, Kaindl, 1997; Schwieter, Ferreira, 2020).

The aim of the research is to elaborate the approach to the use of corpus material in the course of translation in specialized and professional fields, with particular attention to some aspects of translation competence development.

Methodology

The processes of *study* and *creation* of text corpora that belong to certain specialized or professional orientation areas, including their specific linguistic features (Gálová, 2007; Ressurrecció, Piorno, García-Izquierdo, 2008), can be considered the most significant tasks within this framework. Experts state that corpus-based approaches are based on cross-linguistic isomorphisms and anisomorphisms, as well as monolingual, bilingual and multilingual corpora data, which are used to validate both corpus-driven and corpus-based methodologies (Vîlceanu, 2019, 1482). It should be mentioned that as an object of the research, a corpus of texts is a complex multi-level dynamic system. Corpus linguistics focuses on linguistic interactions and references in such systems that arise at the level of *a corpus of texts – a separate text* opposition, as well as other problems related to the corpus of texts as a linguistic and methodological object.

Thus, the corpus under consideration consists of a finite number of texts, and it is intended to adequately reflect the lexical and grammatical phenomena, typical of the texts in the corresponding language (or sublanguage). Two essential features *sampling/ selection and representativeness* are of extreme importance in corpus linguistics. The first of these features is the way texts are selected for the corpus; the other determines which extra-corpus reality the corpus reflects (or the compiler wishes to reflect).

Corpus-based research includes the following stages: 1) collection of mono-and multilingual text corpora, coding tools and searching tools; 2) linguistic research itself, language analysis, from an experimental point of view, i.e., one has to identify what words, expressions, grammatical constructions, types of discourse are actually used by native speakers, how often and for what purposes.

Ideally, when translating in a particular field of knowledge, you should create two parallel representative corpora that contain texts in two languages – one in English and the other in Russian, which will provide the translator with relevant and reliable information concerning the functioning of a certain translational equivalent in the professional discourse. For example, while discussing parallel corpora, researchers distinguish between comparable corpus and translation corpus, in which the latter is realized as a large and structured set of translated texts between two languages (Salkie, 2016).

Special attention should be given to the translation of terminological units, most of which are registered in terminological dictionaries. At the same time as far as some newly emerging terms are concerned, one may come across that rare situation, when the unit is not registered in the dictionary or requires its presentation in a new context within a new branch of knowledge and linguo-cultural space (Malyuga, Krouglov, Tomalin, 2018). The other case that deserves particular attention is a term manifestation via means of a number of translation equivalents, for instance, by a lexical equivalent, a loan borrowing and a descriptive translation. Despite the fact that an important property of a term is its semantic stability and unambiguity in a certain field of science or professional area, the dynamics of language development and the multidimensional nature of approaches to scientific analysis may sometimes cause nuances of ambiguity in the course of terminological unit functioning. Thus, one should bear in mind that in all these cases parallel translation corpus, especially based on a situational parameter, can be of great benefit. It should be mentioned in this connection that when choosing an equivalent from the options offered by the dictionary and taking such parameters as *frequency of use* and *breadth of distribution* into special consideration, the translator can use the statistical method of studying the corpus of professional texts.

Results and Discussion

At present, philological comparisons can be made not on individual samples, but on mass-presented texts that are available for computer processing. Moreover, the results of such comparisons can be qualitatively different if the research is carried out within the framework of a certain linguistic approach, which includes the rules for organizing texts into a corpus, the methodology for their analysis, and scientific methodology. It should also be pointed out that corpus linguistics has significantly influenced lexicography. An example is COBUILD dictionaries. Consistently applying the principle of computer processing of real speech materials used in the relevant areas of communication, a fundamentally new type of dictionary was

designed. The results of corpus-based research were diverse and numerous. The ease of accessing huge and diverse linguistic material via the Internet has led to qualitatively new results.

Due to the fact that there are countless texts in the electronic form which are freely available on the Internet, the largest corpus can be considered the Internet itself (Web Corpus), and the means of access to this corpus are search engines. At the same time, texts on the Internet are chaotic, it is often difficult or impossible to formulate a linguistically interesting query using the search engine; it is impossible to assess the representativeness of the sample based on search results.

For this reason, corpus linguistics uses mono – and multilingual text corpora, which are often annotated with linguistically significant information, such as parts of speech, morphological features, syntactic structure, and semantic interpretation.

The representativeness of the corpus is essential for further discussion. To optimize the search for information, the principle of corpus linguistics comes to the fore – relying on a reference corpus of texts that adequately reflects this type of communication. This corpus helps to solve linguistic difficulties based not on idealized models, but on real speech material that has already been used in this type of communication, analysed in terms of Language for Specific Purposes, which is represented by large arrays and various text formats (Ayuningtyas, 2017; Borucinsky, Čolakovac, 2020), reflects the needs of those for whom the learning of a language is auxiliary to some professional or academic purpose (Widdowson, 1983).

Terms are a crucial part of LSP, including the fields of Economics, Law, Politics and other sciences under consideration. There is no doubt that terms belonging to these fields share many features and undergo similar linguistic processes, which are manifested by a great number of texts such as Internet realizations and vividly shown at the level of native and multilingual corpora (Biel, Sosoni, 2017; *Botley, McEnery, Wilson, 2000;* Pearson, 1996*).* The specific feature of translating terms is the need to either build equivalents of foreign terms in the native language, or to choose between several translation options recorded in dictionaries. Dictionaries often present several translation options.

Thus, for example, the legal term *grantor* has the following meaning – a person who transfers the ownership of property by written instrument. This term has several translation equivalents registered in dictionaries:

    grantor:
        1) лицо, передающее или представляющее право;
        2) лицо, предоставляющее дотацию или субсидию;
        3) лицо, дающее разрешение.

However, in the corpus of professional documents – power of attorney, descriptions of court precedents, security certificates, mortgages on mortgage collateral, insurance policies, mortgages on property, counterclaims, purchase/sale/gift agreements – the numerical composition of which can be considered representative (over 900,000 words), experts use the term *доверитель*:

> "Know all men by these present that XXX (Cyprus) Limited, a company registered under the laws of Cyprus, under registration number 000, having its registered address at … (hereinafter called "*the Grantor*"*)* has made, constituted and appointed and does hereby constitute and appoint Mr. XXX to be the *Grantor's* lawful Attorney..."

> "Настоящим документом все заинтересованные лица уведомляются о том, что компания "XXX (Сайпрус) Лимитед", зарегистрированная по законодательству Кипра под регистрационным номером 000, с зарегистрированным местонахождением … (в дальнейшем именуемая "*Доверитель*"), приняла решение о назначении и наделении полномочиями и настоящим назначает XXX законным Поверенным *Доверителя...*"

It should be pointed out that the case described above when dictionaries do not register the equivalent which is recurrent in professional communication is quite rare. The most frequent case is the presence in the dictionary (English-Russian Dictionary…, 2020) of two or three translation equivalents of the term, namely, a loan borrowing, a lexical equivalent and a descriptive translation:

    aval – аваль, гарантия по векселю;
    beneficiary – бенефициар, наследник по завещанию; лицо, в пользу которого действует
                 попечитель;

bonus – бонус, добавочный дивиденд, премия;
overdraft – овердрафт, кредит по текущему счету.

Such examples are numerous, particularly in the economic terminology. This phenomenon can be accounted for by extralinguistic factors: the globalization of political and economic processes, and, consequently, the information exchange and cooperation in these areas.

Based on such parameters as frequency of use and breadth of distribution, the translator can easily make a choice. As an example, here is a comparative statistical analysis of translating several economic terms using the method of corpus research.

The first step is to create a representative corpus of professional texts based on the methods developed in corpus linguistics. In our case, the corpus is made up of the most authoritative and professional websites:

www.bankir.ru;
www.debit-credit.ru/law-letters;
www.gov.spb.ru/admin.;
www.i-tender.ru;
www.banki.ru;
www.mmbank.ru;
www.sbr.ru;
www.vbank.ru;
www.alfabank.ru;
www.rs.ru;
www.vtb.ru;
www.russbank.ru.

The corpus contains over 3.5 million words, which makes it fairly representative. The analysis has shown the following:

1) loan borrowing is used much more often than the descriptive translation:
   овердрафт (7863); *кредит по текущему счету* (1684);
   бенефициар (*3402*); *лицо, в пользу которого действует попечитель* (362);

2) the use of descriptive translation of the term and a loan borrowing is numerically approximately the same:
   авизо – (3814); *уведомительное письмо* – (*3821*);

3) the existing lexical equivalent is used more often than the loan borrowing or descriptive translation:
   баланс – (2430); *сальдо* – (8390); остаток по счетам – (964);

4) the use of loan borrowing in quotation marks is accompanied by an explanation of the metalanguage of the Bank:
   "due diligence" – as a procedure of forming an objective opinion ..... (www.financial-lawyer.ru);
   "due diligence" – providing due diligence in the process of formation of objective representation about objects ..... (aventa.ru);
   "due diligence" – collection, processing and analysis of various information .... (taxhelp.ru).

At the same time, it should be borne in mind that in the course of teaching, corpus analysis should be used in integrative complex with other methods and techniques applied in the translation process and discussed in the domain of Translation studies, as well as in the course of language learning in the broader sense of the word. H.G. Widdowson, an outstanding UK linguist and methodologist, mentioned that, on the one hand, the analysis of language on the basis of corpus studies has provided linguists with new information as refers to language use and its patterns, although, on the other hand, the parameters and criteria on which the description of language is based in computational corpora analysis should not be necessarily the same as those for the purposes of learning, as for the sake of learning they need to be interpreted to suit pedagogical considerations (Widdowson, 1992, 336). Otherwise stated, a translator's activities, which concern corpora studies, should be based on a high level of expertise, linguistic and

cultural competence, while students doing translation need to follow careful instructions of the teacher on their way to autonomous learning for using and compiling corpora.

Conclusions

Thus, to conclude: the use of mono – and multilingual text corpora in translation helps to optimize the search for information, thus identifying the most preferable versions as referred to various communicative spheres, including LSP. Corpus data facilitates the choice of language units by presenting them in particular contexts, both linguistic and linguo-cultural. Thus, in the course of corpus analysis one should accumulate new linguistic information as well as acquire new knowledge in the domain of meaning and functioning of language units and their equivalents in other languages, with special reference to his/her cognitive and conceptual basis extension and development.

The analysis of the corpus of professional texts greatly facilitates the task of both the translator and the lexicographer, indicating statistically more frequently used translation equivalent of the term. In the course of translation competence development, it would be advisable for students to compile their own corpus of texts to choose between two or more translation equivalents of terms registered in dictionaries. Apart from corpus linguistic material, a number of other factors should be taken into consideration, for example, comparative statistical analysis of professional text corpus seems to be appropriate in terms of searching for adequate equivalents for the terms in question, as well as comparative, definitional and contextual methods that are included in the complex methodological approach to the phenomena under consideration. As has been shown in the course of the investigation, the scope of the method application is relevant for the whole area of LSP studies and research.

Text corpora aid to solve problems that occur in the course of real speech communication, by providing learners and professional translators with reliable information as referred to functioning a certain translational equivalent within the domain of academic or professional discourse, which is especially important in the case of interdisciplinary terms (for example, when used in the areas of economics, law or sociology), as well as newly created terms that may not be registered or, vice versa, be accompanied by a number of equivalent versions in dictionaries and other reference materials.

The use of parallel representative corpora that contain texts in two or more languages not only facilitates the process of translation, but also provides students with linguistic knowledge and skills, as well as helps to extend their abilities as referred to translation, comparative studies and intercultural competence development in the course of learning. Parallel text corpora as a universal set of situational representations, subject to comparison, are considered practically significant in terms of quick access to linguistic meaning in context and from the point of view of saving search and language efforts, which is important in terms of heuristic approach to translation.

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Human Energy in Organization: Leadership as a Means for Creating Team Performance in Adult Education

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Abstract: The productive team energy is important at work and in organizational psychology as it aims to promote human energy. Human energy is more than just a "New Age" concept, it has a substantial and predictable effects on performance and innovation in organizations. The aim of the study is to examine relations between leadership style and team performance and mediating role is played by the productive organizational energy. The study is based on literature and quantitative and qualitative research methods. The theoretical framework is assessed in an empirical study in Latvian organizations in 2019. The study was accomplished in co-operation with American company "The Energy Project" and University of Arizona. The article reveals human energy model as a scientifically based approach and transformational leadership as a development tool, which already has spread in all sectors of western society, including educational organizations. The article presents significance for practical purposes, as it can help organizations in analysing their current situation on the team performance. The materials and recommendations can be used to assist and help organizations in identifying practices, processes and initiatives, which can have a positive impact on team performance and organizational energy. The general conclusion is that the transformation leadership lays a positive dynamic in the development of the productive team performance. The educational organizations can progress and create the productive performance in a particularly manner by focusing on their human resources; considering their growth, development and well-being in adult education.

Keywords: adult education, transformational leadership style, team performance, productive organizational energy.

Introduction

At the present stage of development of education teachers are technology-oriented and responsible not only for teaching, but also for the organization of students' learning, as a result, increased stressful situations, work long hours and are tethered to work through technology. The symptoms of teacher's stress contributing to burnout have been extensively studied (Helou, Nabhani, 2016; Jacobson, 2016). A. Leme and I. Maia (2015) inferred that teachers feel depleted with little personal human energy for family or community activities; teachers' fatigue causes motivation and well-being reduction and as a result increase poor performance.

These issues together defined the problem of the study, which is to improve the teacher's well-being and work- related performance. Referring to the analysis of the initial facts and the problem, authors were highlighted the innovative topics of research: firstly, the ability to maintain personal human energy and to use it correctly for leadership at the workplace; secondly, the capacity to build new communication methods or relational energy, that should become an essential tool for managing the pedagogical process and improving productive team performance in adult education.

Interest in personal human energy flourished in the 1970s, when H.J. Freudenberger (1975) became interested in burnout, mental fatigue, and mental distancing from work. This leads scholars to realize the influential role of human energy on the individual and organizational levels (Luthans, Avolio, 2009). Important to mention that in Eastern philosophy ''*Qi*'' (*life power* or *energy flow*) is a concept that is often mentioned in relation to physical and mental health, but in Western philosophy and theory it remains more unexplored. This has changed in the beginning of the 21th century, more attention is being paid to *positive psychology*, *positive energy* and *the study of positive social interactions for optimal human functioning* (Heaphy, Dutton, 2008). The study begins by looking across the interdisciplinary literature on human energy to each of the theories that examine productive team and organizational performance.

B.L. Rich, J.A. Lepine and E.R. Crawford in their study emphasized that human energy is one operative and defining characteristic of work engagement. The researchers presented a three-part measure of work engagement, where were combined physical, cognitive, and emotional human energy one experiences at work (Rich, Lepine, Crawford, 2010). The study of R.M. Ryan and C.M. Frederick (1997) have indeed shown a positive relationship between human energy and vitality and well-being. S.E. Hobfoll and A. Shirom (2000) also expressed that human energy helps people regulate their behaviours and emotions in compliance with organizational or group norms and expectations. A. Carmeli and G.M. Spreitzer confirmed that human energy as a resource demonstrated positive outcomes including performance and creativity. The researchers emphasize that one of the key roles in the successful development of productive team performance is occupied by leaders' behaviour (Carmeli, Spreitzer, 2009).

Leadership is a concept that is strongly related to the topic of human resource development, it is about empowering people to achieve their full potential and work towards the concept of self-actualization intellectually (Hargreaves, Fink, 2006). Based on theoretical analyses different leadership theories were explored and found that human energy resources had influenced the birth of transformational leadership theory. B.M. Bass (1998) described transformational leadership in terms of the impact that it has on followers; followers feel trust, admiration, and loyalty towards the leader. Transformational leaders boost their followers' performance through human energy as a resource (Bass, 1998). The results of the study about transformational leadership in the school environment has shown that it fosters teacher development such as *providing intellectual stimulation*, *offering individualizes support*, *modelling best practices and value*, *demonstrating high performance expectations* and *creating a productive teaching culture* (Leithwood, Tomlinson, Genge, 1996).

Adult education teachers are a diverse group who work with a variety of diverse student populations with many different learning needs and goals (Teacher Effectiveness in…, 2020). The analysis of the literature and results of empirical practice has allowed concluding that transformational leadership can become a means for creating team performance in adult education.

The aim of the study is to examine the relations between leadership style and team performance and the mediating role is played by the productive organizational energy.

Theoretical background

The word energy derives from the Ancient Greek "ἐνέργεια" or "*energeia*" that's mean 'activity, operation', which appears for the first time in the work of Aristotle in the 4th century BC and it described qualitative philosophical concepts, which fuels one's potentiality (Witt, 2003). In the study human energy definition is used from Lexico Oxford Dictionary with meaning as "the strength and vitality required for sustained physical or cognitive activity" (Lexico…, 2021).

Three kinds of human energy dimensions are discerned:
- mental and spiritual energy (*being able to intensely focus*) (Baker, 2019);
- physical energy (*strength, endurance, flexibility*) (Baker, 2019);
- emotional energy/ relation energy (*being in touch with feelings and core values*) (Baker, 2019).

W.E. Baker (2019) suggested an altered category labelled "emotional" energy to "relational" energy, and in his study identified the powerful role that relational human energy plays in corporate behaviour. E. Kříž described the importance of the personality of the teacher and the influence on the relations between teacher and students, he also expressed that students should respect their teacher like a real personality with positive attributes. These features of personality: ability, temperament, character, motivation, needs, interests, aspirations, attitude, knowledge and skills should be characteristic for a teacher of practical teaching (Kříž, 2013). The research about relational human energy reported that it has enclosed high-quality relationships at work, generate and sustain energetic resources, motivate people to do work well and positively associated with team performance (Quinn, Dutton, 2005).

The analysis of the literature has allowed concluding that human energy resources have influenced the birth of transformational leadership theory. B.M. Bass (1998) defined transformational leaders as people who mentor and encourage both colleagues and followers, they are ones who maintain their own human energy. In the study components are specified, which create the framework for transformational leadership considering them as behaviours. These four components are known as 'four I's': *idealized*

influence, *inspirational motivation*, *intellectual stimulation*, *individualized consideration* (Luthans, Avolio, 2009). Transformational leaders articulate a vision for the future, act as charismatic role models, set high performance expectations, provide individualized support, and stimulate followers. Transformational leadership has been found to be related: *to follower performance*, *to job satisfaction*, *to organisational identification* and *to organisational commitment* (Schwartz, Gomez, McCarthy, 2010).

Transformational leadership is a model that principals and teachers can use to lead by example in adult education, it places a high value on creating community bonds, which encourage both students and teachers to greater levels of achievement and behavioural patterns perceived and adopted by young people (Teacher Effectiveness…, 2020). According to S.S. Khumalo (2012) transformational leadership style views relationship development as a crucial component of the work of educational institutions. Transformational leadership in education spurs students and teachers to expand and grow in a nurturing community. One of the strengths of the transformational leadership model is that it builds on the resources of every member of the school, particularly staff, teachers and students (Khumalo, 2012). The benefits of transformational leadership: firstly, fosters a community that is committed to the goals of the school and the success of all students, secondly, effect of this style of leadership is educational change. This provides an environment that fosters the creation of new and innovative instructional techniques.

The model of "Human Energy in Organizations" (HEO) is a scientifically based approach to energizing people physically, emotionally, mentally and spiritually so they can perform sustainably at their best is explained. The model consists of four components: *human energy*, *transformational leadership*, *productive team energy* and *productive organizational energy*. The main basic components of HEO model are human energy and transformational leadership, the consolidation of them leads to productive team and organizational energy. T. Schwartz, J. Gomez and C. McCarthy (2010) research points out to a great importance of productive team energy, the researchers state that it integrates personal and relation human energy into four dimensions – *mindset*, *culture*, *structure* and *behaviour*, and is an effective helping system for successful organizational transformation. M.S. Cole, H. Bruch and B. Vogel (2008) research about productive organizational energy (POE) explained that it refers to the shared experience and demonstration of positive affect and behaviours among followers in their joint pursuit of organizationally salient objectives. POE is linked to such critical organizational aspects as: *well-being*, *internal effectiveness* and *organizational performance* (Kenny, 2019). All components of the model of HEO are interrelated (Figure 1).
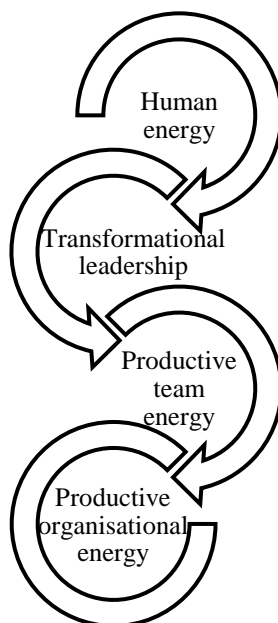
Figure 1. Model of Human Energy in Organization (developed by the author).

Implementation of "Model of Energy in Organization" in an educational institution will lead to increased *team performance,* it is indicated by group-produced output, the consequences a group has for its members and the enhancement of a team's capability to perform effectively in the future (Sun, Xu, Shang, 2014).

Methodology

The aim of the empirical study is to examine the effect of transformational leadership on productive organization energy and the mediating role is played by the productive organizational energy. A mediating variable or "mediator" is an integral part of a cause-and-effect relationship. Mediator makes it easier to understand how the independent variable is affecting the dependent variable and what is governing that relationship (Swaen, 2015). A quantitative and qualitative methodology was reasoned to be best-suited, because it is systematically measured variables with the aim of explaining and predicting the phenomena and it enabled each question to be statistically tested and the results generalised to the population of studies. In the study conceptual framework is illustrated (Figure 2).
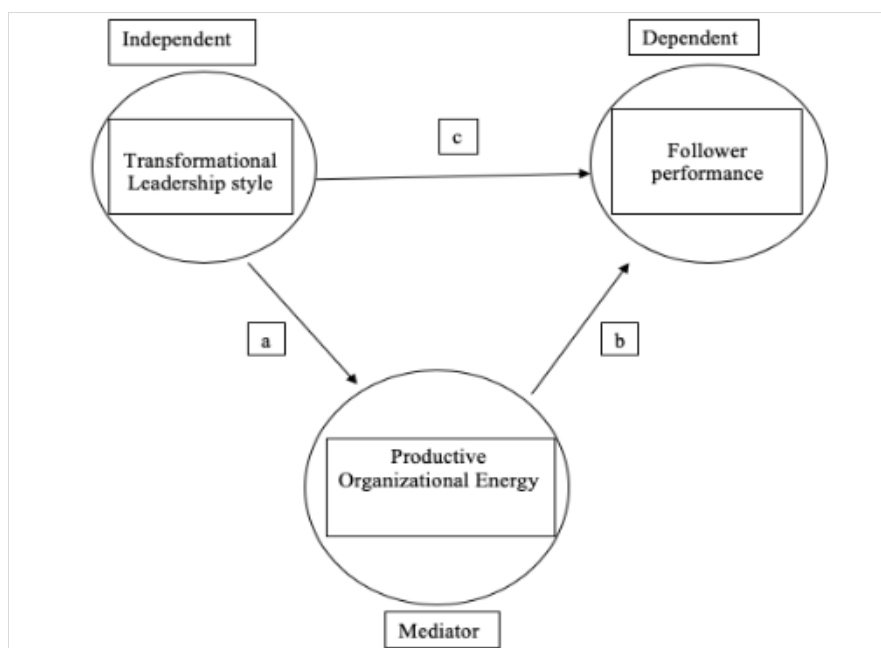
Figure 2. Research Conceptual Framework (developed by the author).

Research questions: (1) Which aspects of transformational leadership relate to higher productive organisational energy and team performance? (2) How organizational energy relates to team performance? (3) Which leadership behaviours lead to sustainable productive team energy?

The population of research consisted of 10 public and private organizations, which included 4 educational organizations. Research subject: leaders with 10 years' experience and their teams. The research focused on the perception of followers and leaders. The stratified sample types were used in the research. For examining respondents, a convenience sample was taken from a diverse group of learners/employees of various organizations in Latvia. Respondents of this sample were females (56 %) and males (44 %). Most of the respondents are organizational teachers/managers in different departments (74 %), employed for 0-10 years in their company (85 %), work experience of 0-10 years (54 %) and work experience of 10-20 years (46 %).

Research Instruments and Measures:
1. Leaders survey content has 4 parts: Personal Information, The Multifactor Leadership Questionnaire (MLQ) (Rowold, 2005), *Team performance* (Sun, Xu, Shang, 2014), *Productive Organizational Energy* (Cole, Bruch, Vogel, 2008).
2. Followers' survey content has 4 parts: Personal Information, Productive Organizational Energy, *Team Performance* (Sun, Xu, Shang, 2014), *The Subjective Vitality* (Ryan, Frederick, 1997).

Methods of data collection: (1) questionnaire, (2) observation, (3) interview.

Data Analysis Procedure: IBM SPSS 21.0, the Statistical Program for Social Sciences was used in this research to process, evaluate and present the data collected during the research process. Mediation model was used for evaluating the impact of one variable on another while the relationship is mediated by a third factor. The model consists of multiple steps that use multiple linear regression for establishing relationships. The second tool for analysis is the combined use of correlation and regression analysis.

Correlation analysis helps in establishing the sign of relationships observed between different variables, regression analysis in SPSS helped evaluating the relationships between different variables.

Results and Discussion

Research Question 1: *Which transformational leadership behaviours relate to higher productive organizational energy and team performance?*

The research presents the correlation coefficients of all 21 leader`s behaviour in relation to POE and Team Performance as evaluated by followers, to answer the first research question (Table 1).

Table 1

The correlation coefficients of Leader`s behaviour with Productive Organizational Energy and Team Performance

No.	Leader's behaviour (LEB)	POE (followers)	Team Performance (followers)
1	I make others feel good to be around me	-.12	-.06
2	I express with a few simple words what we could and should do	-.03	.0,8
3	*I enable others to think about old problems in new ways*	.14	-.*27*
4	**I help others develop themselves**	**.35**	.07
5	**I tell others what to do if they want to be rewarded for their work.**	**.26**	-.05
6	I am satisfied when others meet agreed-upon standards	.07	.06
7	I am content to let others continue working in the same ways always.	-.09	.07
8	Others have complete faith in me	.07	.06
9	I provide appealing images about what we can do	.15	-.13
10	I provide others with new ways of looking at puzzling things.	-.13	-.09
11	I let others know how I think they are doing.	-.04	-.11
12	**I provide recognition/rewards when others reach their goals**	**.25**	-.04
13	*As long as things are working, I do not try to change anything.*	.05	-.*25*
14	Whatever others want to do is OK with me	-1.2	-.12
15	**Others are proud to be associated with me.**	**.29**	-.13
16	**I help others find meaning in their work.**	.09	**.21**
17	**I get others to rethink ideas that they had never questioned before**	.14	**.36**
18	*I give personal attention to others who seem rejected*	-.*24*	-.19
19	**I call attention to what others can get for what they accomplish**	**.22**	-.01
20	**I tell others the standards they have to know to carry out their work.**	-.04	**.21**
21	**I ask no more of others than what is absolutely essential.**	**.21**	.15

According to the data, the recommended leader's behaviour related to higher POE and Team Performance as perceived by followers are pointed with **bold.** There is a significant positive correlation between leadership behaviours and higher POE and team performance as perceived by followers: *LEB4 r=0.35; LEB5 r=0.26; LEB12 r=0.25; LEB15 r=0.25; LEB16 r=0.21; LEB17 r=0.36; LEB19 r=0.22; LEB20 r=0.21; LEB 21 r=0.21.*

In contrast, the not recommended leaders` behaviour related to lower POE and team performance are those who have significant negative correlation and are pointed in *italics* in Table 1. There is significant negative correlation between behaviours *LEB3, r= -0,27; LEB13, r=-0,25, LEB18, r=-0,24.*

Research Question 2: *How Productive Organizational Energy relates to Team Performance?*

There is a positive correlation between POE and team performance of followers (r=0.710, p<0.001). It means that higher organizational energy is significantly and positively related to team performance and can be expected higher performance if higher energy is presented. Based on the correlation results some leadership behaviours are related to team performance, but most of them are related to productive organization energy (Figure 3).

```
┌─────────────────────────────────┐      ┌─────────────────────────────────┐
│  Productive Organizational Energy│      │       Team Performance          │
└─────────────────────────────────┘      └─────────────────────────────────┘
   │  ┌──────────────────────────────┐      │  ┌──────────────────────────────┐
   ├──│ LEB 4 "I help other develop  │      ├──│ LEB 16 "I help others find    │
   │  │ themselves"                  │      │  │ meaning in their work"        │
   │  └──────────────────────────────┘      │  └──────────────────────────────┘
   │  ┌──────────────────────────────┐      │  ┌──────────────────────────────┐
   ├──│ LEB 5 "I tell others what to │      ├──│ LEB 17 "I get others to       │
   │  │ do if they want to be        │      │  │ rethink ideas that they had   │
   │  │ rewarded for their work"     │      │  │ never questioned before"      │
   │  └──────────────────────────────┘      │  └──────────────────────────────┘
   │  ┌──────────────────────────────┐      │  ┌──────────────────────────────┐
   ├──│ LEB 15 "Others are proud to  │      └──│ LEB 20 "I tell others the     │
   │  │ be associated with me"       │         │ standards they have to know   │
   │  └──────────────────────────────┘         │ to carry out their work"      │
   │  ┌──────────────────────────────┐         └──────────────────────────────┘
   ├──│ LEB 12 "I provide            │
   │  │ recognition/rewards when     │
   │  │ others reach their goals"    │
   │  └──────────────────────────────┘
   │  ┌──────────────────────────────┐
   ├──│ LEB 19 "I call attention to  │
   │  │ what others can get for what │
   │  │ they accomplish"             │
   │  └──────────────────────────────┘
   │  ┌──────────────────────────────┐
   └──│ LEB 21 "I ask no more of     │
      │ others than what is          │
      │ absolutely essential"        │
      └──────────────────────────────┘
```

Figure 3. Summary of leadership behaviours that have positive impact on Productive Organization Energy and Team Performance.

Research question 3: *Which leadership behaviours lead to sustainable productive team energy?*

The research was aimed to analyse the positive impact of different leadership behaviours on productive organization energy and team performance. The MLQ consisted of 7 leadership factors, with 3 different leadership behaviours. Summary of MLQ Leadership factors is presented in Table 2.

Table 2

Summary of The Multifactor Leadership Questionnaire Leadership factors

Nr.	Leadership factors	Leadership behaviours	POE followers	Team Performance followers
1.	F:1 Idealised influence	I make others feel good to be around me	-.12	-.06
8.		Others have complete faith in me	.07	.06
15.		**Others are proud to be associated with me.**	**.29**	-.13
2.	F2: Inspirational motivation	I express with a few simple words what we could and should do	-.03	.0,8
9.		I provide appealing images about what we can do	.15	-.13
16.		**I help others find meaning in their work.**	.09	**.21**
3.	F3: Intellectual stimulation	*I enable others to think about old problems in new ways*	.14	-.27
10.		I provide others with new ways of looking at puzzling things.	-.13	-.09
17.		**I get others to rethink ideas that they had never questioned before**	.14	**.36**
4.	F4: Individual consideration	**I help others develop themselves**	**.35**	.07
11.		I let others know how I think they are doing.	-.04	-.11
18.		*I give personal attention to others who seem rejected*	*-.24*	-.19
5.	**F5: Contingent reward**	**I tell others what to do if they want to be rewarded for their work.**	**.26**	-.05
12.		**I provide recognition/rewards when others reach their goals**	**.25**	-.04
19.		**I call attention to what others can get for what they accomplish**	**.22**	-.01

Nr.	Leadership factors	Leadership behaviours	POE followers	Team Performance followers
6.	F6: Management by exception	I am satisfied when others meet the agreed-upon standards	.07	.06
13.		*As long as things are working, I do not try to change anything.*	.05	*-.25*
20.		**I tell others the standards they have to know to carry out their work.**	-.04	**.21**
7.	F7: Laissez-faire leadership	I am content to let others continue working in the same way always.	-.09	.07
14.		Whatever others want to do is OK to me	-1.2	-.12
21.		**I ask no more of others than what is essential.**	**.21***	.15

Only one leadership factor has all positive POE correlations, it is "*Contingent reward*". The contingent reward system is motivation-based approach that is used to reward employees that meet their identified goals and provides positive reinforcement for a job well done (Whetten, Cameron, 2002).

Conclusions

The theoretical literature analysis and the empirical research performed in this study have allowed to draw the following conclusions.

"Model of Human Energy" in an organization is important for: (1) the ability to maintain personal human energy and to use it correctly for leadership at the workplace, (2) the capacity to increase relational energy as an essential tool for managing the pedagogical process, (3) the possibility to growth productive team energy and (4) the opportunity to rise productive organizational energy.

The study has demonstrated how important it is to manage relational human energy relationship between subordinates, organization colleagues and team members to the mutual benefit of both parties. Special attention should be paid to the aspect of communication between leaders and followers of adult education.

Transformational leadership is important for productive team energy growth, because the leader's behaviour and traits implement the transforming human energy in empowering the followers. The skills required for a transformational leader need to be identified and trained to perform them, incentives must be clarified and implemented to keep followers motivated and inspired.

The results of the empirical study demonstrate that the correlation between team performance and productive organization energy of followers is significant and strong. It means that higher organizational energy is significantly and positively related to team performance and expected higher performance if higher energy is present. According to the correlation results, the leadership factor as "Contingent reward" has a positive impact on productive organizational energy and team performance.

The results of the research can be used to assist and help organizations in identifying practices, processes and initiatives which can have a positive impact on organizational energy and team performance.

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Comparative Analysis of Educational Programs for Training Social Pedagogues on the Example of Universities in Kazakhstan, Lithuania and Germany

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Abstract. In the context of integration of national education systems into a single global educational space, the competency-based paradigm of education serves as the main for training competitive strategy specialists. The transition to competency-based educational standards of higher education involves the formation of students' professional competences for successful professional activity. The aim of the research is to study and analyse the experience of development of professional competences in the training of social pedagogues in Kazakhstan, Lithuania, and Germany. In this paper, the study and comparative analysis of the experience of forming professional competences in the training of social pedagogues in Kazakhstan, Lithuania and Germany are carried out. The research showed that during the period of study at the University in the specialty "Social pedagogy and self-cognition", it is necessary to introduce a competency-based approach aimed at the formation of professional competences for working in an inclusive education. As a result of the research, the nature and trends of training social pedagogues in three countries are identified, then general and special competences of social pedagogues are analysed; finally, the professional competences adopted by the world community are highlighted.

Keywords: comparative, descriptive analysis; inclusive education; professional competence; social pedagogy.

Introduction

In pedagogical science and practice, the problems of formation of students' competences are updated, which is reflected in the system of new requirements of the competence approach to the training of specialists, which are laid down in the State Mandatory Standard of Education (SMSE) of higher professional education of the Republic of Kazakhstan in accordance with the competency-based paradigm of education. The competency-based paradigm of education contributes to the formation of a competent specialist, defining his personal and professional development, knowledge, moral values and role in society, thereby meeting the requirements of modern society for future specialists (Spencer, Spencer, 1993).

Reviewing the recent literature, the problem of forming professional competencies of future social pedagogues still remains relevant. Social pedagogues are graduate professionals, who have usually undertaken vocational degrees of three to four years, or a longer master's degree, both supplemented by continuing professional education. Lower-level courses can lead to employment but not to qualification; in many countries, unqualified social pedagogues are in the minority in, for example, children's residential care (Moss, Petrie, 2019). In social pedagogy, theory and practice, thought and action, come together (Hämäläinen, 2003). In practice, social pedagogy is considered a dynamic, humanistic approach to education that takes account of, but goes beyond, subject learning (Kyriacou et al., 2009).

It is a fact that the specialty of "social pedagogue" has a great importance in modern society. It is necessary to pay attention to the training of highly qualified social pedagogues. Many articles are devoted to this issue. The degree of future pedagogues' professional orientation gradually increases from first to third year and decreases by fourth year. There is a positive correlation between a high level of orientation toward the pedagogical profession and the following personal characteristics of students: a sense of their own self-efficacy; belief in the world's benevolence; realization of responsibility for their own actions in life and their personally significant choices; other-oriented perfectionism; tolerance of uncertainty; positive perception of the past and hedonistic and fatalistic perception of the present; global self-attitude (self-respect, self-affection, and self-interest); high degree of self-organization (goal-orientedness, perseverance, and orientation toward the present) (Shashkov et al., 2020).

In Germany social pedagogy has emerged as an academic science in which theory and practice have developed in a dynamic and reflexive way. Due to this relationship, 'in which theoretical discourses and models for practice develop in mutual reference, without one simply being derived from the other' social pedagogy can be described as an action-orientated social science, concerned with practical or social issues while referring to theoretic knowledge in a given discipline (Cameron, Moss, 2011).

The aims and content of academic study programs in social pedagogy are connected with the understandings of social pedagogy's theoretical foundations, the most important schools of thought included, as well as with the vision of social pedagogical practice and the nature of professional expertise (Hämäläinen, 2019). L. Smekalova and K. Nemejc emphasized that social and civic competence is well developed by teaching these subjects – Social Pedagogy, Consultancy, Social Psychology, Pedagogy of Leisure Time and Basics of Special Pedagogy (Smekalova, Nemejc, 2016, 109). The research outcomes of Z. Anspoka and D. Kazaka (2019) enable us to think that one of the problems for more successful work, when implementing the set requirements for modern teaching and learning process, is insufficient communication among the different subject teachers. The study shows that teachers perceive their colleagues not as cooperation partners but rather than competitors. According to the education reform's purpose to improve education outcomes, 82 % of the surveyed respondents admit that not only the subject teachers' mutual collaboration, but also the teachers and support staff's (librarians, psychologists, social pedagogues, speech therapists, career consultants) cooperation has to be improved (Anspoka, Kazaka, 2019, 25).

T. Delcheva (2019) presented a study, which is a part of a broader study that aimed to analyse, and – if required – to modernize or optimize the organization of the practical training of Social Pedagogy students to ensure its coherence with the dynamic conditions for professional realization. The researcher's article focused on the final stage of the practical training of the students – the pre-graduate internship. The accent is the final product – a description of the pre-graduate internship; which is presented and defended at the state final certification examination.

Due to globalization, there has been a change in the social environment, economic security of family and social security of pupils. The result is the change of behaviour and socialization in school, leading to undesirable practices in primary schools, such as bullying, truancy, drugs, rebellion, violence, emotional abuse and so forth. Social pedagogues are experts in schools that can help in these areas and can help to harmonize the school environment (Durana, Chlebikova, 2017).

The aim of the research is to study and analyse the experience of the development of professional competences in the training of social pedagogues in Kazakhstan, Lithuania and Germany; to determine patterns and trends, common and particular competences of preparation of social pedagogues in the three countries; to designate the need for the inclusion of professional competences for work in inclusive education in the educational program, and State Mandatory Standard of Education of Republic of Kazakhstan for training of social pedagogues, as well as about the need to use the opportunities of major subjects in the formation of professional competences of social pedagogues on the example of universities in the Republic of Lithuania and Germany.

Methodology

In this paper, a comparative, descriptive analysis of the selected educational programs for training social pedagogues of 3 higher educational establishments: Al-Farabi Kazakh National University (Almaty, Republic of Kazakhstan), College of Utena (Utena, Lithuania) and Leuphana College at Leuphana University (Luneburg, Germany) was carried out in the 2019-2020 academic year; the structure and content, the possibilities of curricula of the specialty "Social pedagogy" in the formation of professional competences were described. Comparative and descriptive analyses were used (Loeb et al., 2017), research data collected during the analysis of literature review and normative data were presented: the State mandatory standard of education of the Republic of Kazakhstan; data from the website for the training of social pedagogues at Al-Farabi Kazakh National University; the curriculum of the Educational program "6B018-Social pedagogy and self-cognition" Al-Farabi KazNU (Obrazovatel'naya programma Podgotovka…, 2020); Vocational Education and Training Standard for a Social Pedagogue (Vocational Education and…, 2008); Educational program for training social pedagogues in Utena (Social pedagogues…, 2019).

Results and discussion

General information about the educational institutions that were selected for the comparative analysis of the training of social pedagogues is described in Table 1.

Table 1

General information (prepared by the authors)

N	country information	Republic of Kazakhstan	Lithuania	Germany
1.	Name of the educational institution	Al-Farabi Kazakh National University (Almaty, Republic of Kazakhstan)	Utenos kolegija, University of Applied Sciences (Lithuania).	Leuphana College at Leuphana University (Luneburg, Germany)
2.	Type of educational institution	university	college (at university)	college (at university)
	Total number of students	More than 25,000 students and undergraduates	2,000-2,999 students	9888 students
3.	Level of training	bachelor		
4.	Graduate degree	Bachelor of education according to the educational program "6B018-Social pedagogy and self-cognition"	Professional bachelor	Bachelor of Arts (B.A.)
5.	Language of study	Kazakh, Russian	Lithuanian, English, Russian	German, English
6.	Duration of the training program	4 years (8 terms)	Full-time education-3 years, part-time-4 years	Standard training is 3 years
7.	Number of credits	240 credits	180 credits	180 credits

Experience in training social pedagogues in the Republic of Lithuania.

After analysing the educational program in the specialty "Social pedagogy" at the Utena University of Applied Sciences Educational program for training social pedagogues in Utena (Social pedagogues…, 2019), it should be noted that this program involves the formation of future social pedagogues of the following **competences:** 1) Communicate in the correct Lithuanian language in all conditions of self-education. 2) Use one foreign language at least B2 in accordance with the Common European system of languages (CEFR). 3) Collect, process, analyse, summarize and interpret research results. 4) Determine the problem of education and training; formulate the aim, objectives and hypotheses of the study. 5) Create a safe, tolerant, open, encouraging group learning and collaborative environment. 6) Communicate, collaborate and motivate students, parents (foster parents), colleagues, and representatives of institutions that provide social and educational services and strive for common goals. 7) Evaluate the development of the student, recognizing the individuality of the individual. 8) Organize preventive work. 9) Organize and evaluate work with students and their groups.10) Assessment and organization of work with students' families.11) Coordination of interagency interaction and cooperation. 12) Take responsibility for the results of their own work, assess their relevance and consequences for human values. 13) Think about own pedagogical, andragogical, or other educational activities. 14) Use of various learning tools, digital technologies and software / hardware, increasing the diversity of learning activities. 15) Improving the professional and personal competences of a social pedagogue.

The above-mentioned competences correspond to the competences of the Vocational Education and Training Standard for a Social Pedagogue (Vocational Education and…, 2008): 1. Assessment of the student's needs in the environment and prevention; 2. Development and implementation of preventive and social projects and programs; 3. Analysis of the effectiveness of preventive work; 4. Assessment of the student's needs and social problems; 5. Solving problems related to the integration of socio-cultural differences; 6. Organization of activities of children at risk; 7.Assessment of the effectiveness of socio-pedagogical impact on the pupil; 8. Assessment of the child's family social environment; 9. Organization of social support for students' families; 10. Promotion of a positive lifestyle in families; 11. Coordination of social and pedagogical support in cooperation and communication with institutions; 12.

Communication and cooperation with students and other participants in the educational process; 13. Conducting applied research; 14. Assessment of personal professional activity.

The analysis of normative documents of Lithuania has shown that the training of future social pedagogues and the development of their competences have a profile orientation and provide for the training of social pedagogues to work in an inclusive education environment. This is facilitated by the study of the following subjects: "Education about child health", "Work of a social pedagogue", "Protection of children's rights".

Bachelor's degree in social pedagogy in College of Utena (Utena, Lithuania).

Training in College of Utena (Utena, Lithuania) is conducted in 3 languages: Lithuanian, English, Russian. Full-time education-3 years, part-time-4 years. *The aim of the program:* to train a specialist who can organize preventive work, work with groups of students and their families, teach communication and cooperation skills, and contribute to the personal and professional development of a social pedagogue (Social pedagogues…, 2019).

In this programme 30 credits per semester are provided, no more than 7 modules per semester (Vocational Education and…, 2008). It should be noted that in College of Utena (Utena, Lithuania) the training of major subjects begins in the first year. Training is conducted in modules: "Human and environmental knowledge"; "Children's Education"; "Child and family"; "Factors of risk socialization", and others.

Structure of training of social pedagogues at the Leuphana college at Leuphana University (Luneburg, Germany)

At Leuphana College in Leuphana University (Luneburg, Germany), standard training is 3 years. College students combine social pedagogy with other subjects of their choice: German, English, Protestant studies, Mathematics, Politics, or Physical education. The language of the curriculum is German. Along with studying social pedagogy and the chosen subject, the program includes professionalization. The article examines the institutional and broader conceptual framework of vocational education in Germany, examines the theory of development, training and socialization, as well as tools for measuring and evaluating performance. It is necessary to note the role of the subject "Introduction to the discipline: theory and problems of social pedagogy", studied in the 1st year of study. The Bachelor of social pedagogy at Leuphana College is an extensive degree in social science.

Along with the theories of social pedagogy, as well as legal, organizational and financial aspects of social pedagogy, empirical methods of social research are deeply studied (disciplines: "Legislation, organization and financing of social pedagogy", "Applied methods and procedures of social pedagogy", "International perspectives of social pedagogy"). The program links academic interaction with research in social pedagogy with fundamental aspects of teaching and psychology. Subject-based academic and didactic skills are developed that lay the foundation for both research and teaching careers in professional or higher education. The bachelor of social pedagogy also opens up a number of other possible professions. For example, a student can continue his master's degree in educational science at another university or start working in child and youth welfare services that qualify as social pedagogy (Bachelor…, 2019).

Structure of the training course for social pedagogues in Al-Farabi Kazakh National University.

The practice of training social pedagogues in Kazakhstan was started in 2010. Normative documents, educational programs and curricula were developed to provide professional training of future specialists for social and pedagogical work. They reflected the international experience of training pedagogues and also took into account the features of the Kazakh system of higher professional education (Gosudarstvennyi obshyeobyazat'elnyi standart…, 2010).

In Al-Farabi Kazakh National University training in the specialty "Social pedagogy and self-cognition" is carried out at the Department of Pedagogy and educational Management of the Faculty of Philosophy and Political Science. Duration of training in bachelor degree 4 years, master degree -2 years. Training languages -Kazakh, Russian. The goal is to train highly qualified specialists perfectly with professional competence in the field of social pedagogics and self-cognition, prepare teachers of "Self-cognition" for schools that focus on spiritual and moral development of students, followed by universal values in life, developed deep and positive thinking, and readiness to implement in practice, the role of meta-subject

"Self-cognition". When preparing bachelors, first of all, the main efforts of lecturers should be directed to the formation of professional competences that are developed in the study of a particular discipline. Future social pedagogues are expected to develop the following professional competences: ***special, communicative, informational, intellectual, social, personal, and profile***. Graduates of the specialty "Social pedagogy and self-cognition" can work in the educational system as a social pedagogue; as a specialist in the protection of children's rights and other social support agencies for the unemployed and low-income; as an animator in child development centres and other companies. Graduates are awarded the qualification "Teacher of self-cognition, social pedagogue at school" (Bakalavriat…, 2019). For analysis, we selected the following subjects of the educational program "6B018-Social pedagogy and self-cognition" (Obrazovatel'naya programma Podgotovka…, 2020):
- "Social pedagogy";
- "Inclusive education";
- "Information and communication technologies".

According to the Curriculum of the educational program "6B018-Social pedagogy and self-cognition" from 2019, the subject "Social pedagogy" is considered as a major subject, it belongs to the mandatory component; pre-requisite - "Pedagogy", post-requisite - "Technologies of social and pedagogical work" (Obrazovatel'naya programma Podgotovka…, 2020) (Table 2).

Table 2

Information according to the curriculum of the educational program "Social pedagogy and self-cognition" (Obrazovatel'naya programma Podgotovka…, 2020) (prepared by the authors)

Data of the subjects: "Social pedagogy", "Inclusive education" and "Information Communication Technology"						
Number of credits	Total number of hours	Lectures	Practical classes	IWST	IWS	Time of discipline training
5	150 h	15 h	30 h	7h	98 h	During the 4th semester

During studying the course "Social pedagogy" it is assumed to form competences that are indicated in the educational program as abilities (Table 3).

Table 3

Compliance of the required competences as a result of studying the discipline "Social pedagogy" with the competences according to State Mandatory Standard of Education of Republic of Kazakhstan (prepared by the authors)

N	Competences (abilities) formed during the study of the subject	Requirements	Competences as a result of studying the subject according to State Mandatory Standard of Education of Republic of Kazakhstan
1.	describe the subject of social pedagogy, its components, phenomena and patterns of social behaviour of individuals and various groups	Professional competency includes special; communication, informational; intellectual; social: personal; profile competencies	intellectual competency
2.	social interaction with the subjects of the educational process		special, communicative, intellectual, social, personal, profile competencies
3.	determine the type of social influence based on the described situation; - Express the point of view on the tasks to be solved		special; intellectual, personal, profile competencies
4.	develop positive communication skills; conflict resolution skills, group work organization		communicative, intellectual, social competencies
5.	determine the type of social influence		special, communicative, informational, intellectual, social, personal and profile competencies

The analysis showed that the results of training of the discipline "Social pedagogy" do not fully reflect the professional competences. Both in the State Mandatory Standard of education and in the educational program *are not provided the training of social pedagogues to work with people with special needs, disabilities,* or to work in an inclusive education environment.

The discipline "*Inclusive education*" contributes to the formation of social pedagogue's competence to work in an inclusive education environment. According to the Curriculum of the educational program "6B018-Social pedagogy and self-cognition", the discipline "Inclusive education" belongs to the University component, there are no prerequisites, post - requirements – "Social pedagogy" (Table 3).

The term "inclusive education" has gained grounds internationally since the United Nations Salamanca Statement (UNESCO, 1994), signed by 192 member countries, which argued for schools with an inclusive orientation as being "the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all". Inclusive education has grown to be much more than the mere acceptance of learners with disabilities into mainstream schools. It is accepted that there may be other barriers, such as age, gender, ethnicity, language, class or HIV status, that impact on learners' access to education. This broader understanding of inclusive education has a significant impact on the transformation of entire educational systems (Dreyer, 2017).

During studying the course "**Inclusive education**", it is assumed to form competences that are indicated in the educational program as abilities in Table 4.

The social pedagogue works in the conditions of informatization and computerization, so it is important to form his information competencies: skills to work with ICT, technological skills associated with the use of technology; computer skills and information management abilities. This is facilitated by studying the subjects of the "Instrumental module": "Information and communication technologies". According to UNESCO, "ICT is a scientific, technological, and engineering discipline and management technique used in the processing of information, its application and its connection with social, economic, and cultural issues" (Ratheeswari, 2018). The introduction and use of ICT in higher education has become a key issue in the development of the education system and they are commonly seen as the solution to the increasing demands on education systems. The integration of ICT into educational systems varies from the simple use of technology to assist instruction (e.g., Power Point presentations) to the delivery of whole courses or programs using ICT (e.g., Massive Open Online Courses (MOOC)) (Gasaymeh, 2018).

According to the Curriculum of the educational program "6B018-Social pedagogy and self-cognition", the discipline "Information and communication technologies" is a discipline of the "Instrumental module", - general education discipline, a mandatory component, the subject is studied in English (Table 2).

In accordance with the requirements of State Mandatory Standard of Education of Republic of Kazakhstan specialty is the effectiveness of the social work pedagogue depends on the integration of theory and practice, as practice is the deepening and development of theoretical knowledge, and the establishment of their connection with practical activities. The most important condition for the success of the training of a social pedagogue is an organization of different types of practices: professional (learning) practice; vocational teacher training; professional (socio-pedagogical) practice; professional (learning) practice; professional (pre-diploma) practice.

So, comparing the educational programs of preparation of social pedagogues in 3 higher educational institutions of Kazakhstan, Lithuania, Germany indicates that in higher educational establishments of Lithuania and Germany training of students majoring begins with the 1st course, when Kazakhstan strengthened the study of major subjects starts from the 3rd semester.

In our research, we focus on the document "Professional competences of social pedagogues. Conceptual framework. International Association of Social Pedagogues", adopted by the European Bureau of the International Association of Social Pedagogues. This is the first document that established a set of criteria for the required level of competence required for the practice of social pedagogy (The professional competences …, 2008).

Table 4

Compliance of the required competences as a result of studying the discipline "Inclusive education" with the competences according to State Mandatory Standard of Education of Republic of Kazakhstan 6.08.079-2010 (prepared by the authors)

N	Competences formed during the study of the discipline	Requirements	Competences as a result of studying the discipline according to State Mandatory Standard of Education of Republic of Kazakhstan
1.	list general, specific patterns and individual features of mental and psychophysiological development of children/people;	Professional competency includes special; commu-nication, informational; intellectual; social: personal; profile competencies	special, intellectual, profile competencies
2.	describe models of inclusive education, the regulatory and legal framework for teaching and raising children with disabilities, Special Educational Needs, children of the "risk" group		special, informational, intellectual, personal competencies
3.	collect and primary process information about the history of development and disease of children with different types of disabilities		special, communicative, informational, intellectual, social, profile competencies
4.	organize joint and individual activities of children with different types of impaired development		special, communicative, informational, intellectual, social, profile competencies
5.	apply strategies and methods of inclusive education, organize child support for subjects of educational integration		special, communicative, infor-mational, intellectual, social, personal, profile competencies
6.	control the stability of his emotional state in interaction with children who have SEN and their parents		intellectual, social competencies
7.	effectively interact with pedagogues of correctional educational institutions and other specialists		special, communicative, social, personal, profile competencies
8.	analyse and evaluate the educational process for children with SEN		intellectual competencies

It should be noted that the competences formulated in the SMSE do not provide for the formation of future social pedagogues' professional competences to work with individuals with disabilities and SEN.

Professional competences include the following components (The professional competences …, 2008) (Table 5).

Table 5

Professional competences according to International Association of Social Pedagogues

N	Professional competences	Components
1.	Personal competences and competences of interactions	dedication, motivation, attitudes, feelings, personal and professional communication
2.	Social and communicative competences	cooperation, constructive conflict resolution, communicative competences at theoretical, practical, and methodological levels
3.	Organizational competences	organization, management and development of social and pedagogical institutions
4.	System competences	system competences cover the entire range of competences
5.	Development and training competencies	continuous further education, assessment of his work independently and together with others, the analysis of his work
6.	Competences based on professional experience	work experience

N	Professional competences	Components
7.	Methodological competences	socio-pedagogical expertise and professionalism, theoretical and practical knowledge, methods and tools
8.	Behavioural competences in the profession	mastering the ethics and morals of the profession and influencing their development
9.	Culturological competence	knowledge, understanding and openness to different cultures and cultural values
10.	Creative competences	possession of forms of self-expression, creative skills. expanding creative horizons in the social and cultural environment

Conclusions

Thus, as a result of a comparative analysis of the experience of forming professional competences in the training of social pedagogues in the countries we studied (Germany, Lithuania, Kazakhstan), we identified national trends:

- orientation to international educational standards for training specialists – in Kazakhstan in accordance with the principles of the Bologna Declaration in Germany and Lithuania – in accordance with the provisions of the European Union.
- the structure and content of the formation of professional competences of social pedagogues are determined by national characteristics of training specialists in the social sphere.

The research revealed the features of educational programs for training social pedagogues in Germany, Lithuania and Kazakhstan.

Professional training of social pedagogues in Germany is aimed at acquiring professional competences that will allow graduates to be successful and make responsible decisions in various areas of social and pedagogical work. Educational programs ensure the unity of theoretical and practical training of social pedagogues and combine elements of both social work and social pedagogy.

Professional programs of higher education institutions of Lithuania in the specialty "Social pedagogy" are aimed at training a specialist who can organize preventive work, work with groups of students and their families, teach communication and cooperation skills, and contribute to the personal and professional development of a social pedagogue. Special attention is paid to the training of social pedagogues to provide children with conditions for socialization, early prevention and socio-pedagogical rehabilitation.

The Educational program in the specialty "Social pedagogy and self-cognition" implemented in the educational process of higher education institutions of Kazakhstan is aimed at developing the student's personality as an individual by choosing the content, forms and methods of training that correspond to its real capabilities, needs and interests. The final result of the implementation of this model is focused on the training of professionally competent specialists in the social sphere who have a set of developed competences. The State Mandatory Standard of Education formulates the requirements for the key, subject and special competences of a bachelor's degree in "Social pedagogy and self-cognition". However, it should be noted that the competences formulated in the SMSE do not provide for the formation of professional competences for future social pedagogues to work with people with disabilities and SEN. Each discipline of the educational program "6B018-Social pedagogy and self-cognition" has opportunities to train a social pedagogue to work in an inclusive education Nevertheless, we suggest these opportunities to be specified and disclosed both in the educational program and in the State Mandatory Standard of Education of the Republic of Kazakhstan for the training of social pedagogues.

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The Meaning of Constructivist Approach in Mediation and the Role of the Mediator

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Abstract: The process of overcoming a conflict in mediation using constructivist ideas is revealed in the study. A mediator's roles in the frame of the constructivist approach represent the topicality of the study. The mediator's role is analysed and the emphasis is on the constructivist frame. The mediator's pedagogical role is in the centre of the study. In the process of the study, the aim was to find out theoretical explanations of the meaning of the constructivist approach in mediation, how it occurs and what is the role of mediator in the mediation process based on dialogue? The methodology of the study comprises a theoretical assessment of the role of the mediator based on a constructivist approach with a purposeful emphasis on a dialogue between parties. The mediator facilitates a dialogical mediation process being also a pedagogue who helps the parties to learn how to keep a dialogue. Analysis of the mediator's role and the usage of D.A. Kolb's learning types in the stages of mediation are the main results of the study. The significance of the study implies a substantiation of various roles of the mediator, constructivist approach with the emphasis on the dialogue and implementation of D.A. Kolb's learning types in the stages of mediation.

Keywords: mediation, constructivism, a mediator's roles, dialogue, transformative learning.

Introduction

People relations in everyday life and work conditions depend on communication to a large extent and that is why also differences arise which may provoke hostile, antagonistic attitude against each other that, in their turn, lead to the conflict. N. Luhmann highlights the idea that to the degree of the complexity of the social system growth, the differences become increasingly to be the subject of communication (Luhmann, 1996) and L.A. Coser and R. Fisher explains that there is a distinction between the conflict and a hostile or antagonistic attitude. The social conflict – it always is a social interaction, whereas the attitude or feeling is only a precondition for activity (Coser, 1957; Fisher, 2000).

Conflicts can be resolved differently. When resolving conflicts in a constructive way, that is, to disclose unknown things, facts, involved parties' interests, needs, opinions and experience, additional knowledge is obtained. This knowledge enables to resolve the conflict to break the deadlock over communication. Thus, it can be assumed that the conflict situation has arisen because of insufficient knowledge. The solution was possible by gaining additional knowledge. The conflict resolution may be reached in different ways, in court or alternatively through negotiations, discussions, reconciliation (Lewicki, Weiss, Lewin, 1992) or conducting a mediation process with the third-party therapeutic role (Kelman, 2015).

The authors have examined the concept of mediation and the philosophy of dialogue, nature, components, barriers and benefits (Portere, Briede, 2019b), and further investigations highlight the idea that the functions of the mediation process are not only finding a constructive conflict solution and maintaining and improving relationship, but also constructive learning about the world and relations, acquisition and approbation of new knowledge. This learning is based on constructive paradigm and the role of importance of dialogue (discourse) outlined as the instrument of learning. Having regard that the dialogue (discourse) is an integral part of mediation, consequently, it is possible to reflect the mediation based on constructivism as an instrument of adult learning.

In the process of the study the aim was to find out theoretical explanations of the meaning of constructivist approach in mediation, how it occurs and what is the role of the mediator based on dialogue in the process of mediation.

Methodology

According to the aim the research question is how learning could be carried out using constructive approach and transformative learning theory, and what are the roles of the mediator based on dialogue in the process of mediation?

The objectives of the study were:
- to investigate the constructivist approach and transformative learning theory to substantiate learning and the mediator's roles in the process of mediation (Alderson-Day, Fernyhough, 2015; Bhattacharjee, 2015; Hermans, 2006; Mercer, 2020; Merriam, Bierema, 2013; Mezirow, 1997; Mezirow, 2003; Sulistyowati, 2019; Watzlawick, 1977);
- to substantiate the usage of D.A. Kolb's learning styles in the stages of mediation (Kolb, Kolb, 2013);
- to substantiate the mediator's roles based on dialogue in the process of mediation (Buber, 2003; Elliott, 2016; Habermas, 1999; Hermans, 2006; Hermans, Hermans-Konopka, 2010; Kaufman, 2019; Lewitter, Bourne, Attwood, 2019; Macmillan, 2012; Portere, Briede, 2019b; Portere, Morevs, 2020a, 2020b; Taylor, Cranton, 2012).

The principal method of the study was the theoretical analysis of constructivist approaches including adult transformative learning described by the American sociologist, professor J. Mezirow (Mezirow, 1997) and the American educational theorists D.A. Kolb and A.Y. Kolb (Kolb, Kolb, 2013) about the adult learning model and its four aspects, and how they are implemented in the process of constructive learning. The roles of the mediator in the process of mediation were examined in the frame of constructive and transformative learning.

Results and Discussion

The meaning of constructivist approach in the process of mediation

Constructivism (from Latin constructio–construction) – a scientific trend on the basis of which the notion lies about the activity of the subject of inquiry which uses experience, procedures of especial reflections (communications) creating (construing) images, concepts and judgments.

Constructivism is used in the theory of inquiry (epistemology) and philosophy of science, mathematics, sociology, psychology and pedagogy in the XX century. Substantiation how knowledge should be constructed to define some "truth" about the individual or collective learning and transformation is in the centre of constructive approach.

According to constructivism the individual's major difference lies in the fact that his being is not contemplative and even not simply active or functioning, but exactly constructive, creatively constantly creating himself. Radical constructivist P. Watzlawick wrote that "the belief that one's own view of reality is the only reality is the most dangerous of all delusions" (Watzlawick, 1977, 13).

Nowadays constructivism experiences new development is based on special sciences, including the science of the individual (Alderson-Day, Fernyhough, 2015). In such a way the cognitive, radical, social, critical, cultural and other trends of constructivism arise. For example, "Cognitive Constructivism is based on beliefs, previous knowledge, values and self - concept and deals with how an individual constructs his understanding of the world around him" (Sulistyowati, 2019, 94) and it happens through deep learning (Mercer, 2020).

The primary condition for human existence is to understand the meaning of our experience, as well as to act at cognitive level acquiring the mechanisms of "critical thinking" (Magno, 2010) to monitor the perception, analysis and transfer of information, namely, communication. Consequently K. Oganisjana and R. Ozols have worked out the co-development model of metacognitivity and thinking putting emphasis on eight mutually linked "pillars: senses, perception, emotions, imagination, language, action, experience, and knowledge which have an impact on each individual's action" and which are crucial in developing dialogue in mediation (Oganisjana, Ozols, 2018, 18-19).

J. Bhattacharjee analysing constructivist approach to learning stresses such "guiding principles" as "search for meaning, active construction of meaning, understanding wholes and parts, understanding of students' mental models, making the assessment part of the learning process" (Bhattacharjee, 2015, 66).

Nowadays constructivist approach postulates free expression of the individual's experience and motivated construction of knowledge, and it could be a positive turn in a mediation process because individuals' openness is fostered. That is why a mediator who uses the ideas of constructivist approach could be more effective in helping parties to solve problems. It can be done if conflicting sides are promoted to express, understand and reinterpret their experience thinking about their actions and decisions. The usage of transformative learning theory is a way where a particular stress is put on free expression of ideas and experiences, and development of dialogical relations.

The meaning of transformative learning in the process of mediation

Transformative learning – and "the approach" to learning based on "creating the conditions for and the skills of effective adult reasoning and the disposition for transformative learning — including critical reflection and dialectical discourse — is the essence of adult education and defines the role of the adult educator, both as a facilitator of reasoning in a learning situation and a cultural activist fostering the social, economic, and political conditions required for fuller, freer participation in critical reflection and discourse by all adults in a democratic society" (Mezirow, 2003, 62-63).

Besides, the "prospective transformation" process of the learners' personality has three measurements: psychological, values and behaviour. It corresponds to the changes of self-awareness, confidence systems and lifestyle. This process of change is rational and analytical. It occurs when people transform the values of their experience and knowledge on the basis of critical reflection. The conversation participants meaning scheme (beliefs, relations, emotional reactions) changes. The meaning schemes that make up meaning structures may change as an individual adds to or integrates ideas within an existing scheme and, in fact, this transformation of meaning schemes occurs routinely through learning.

J. Mezirow posits that when circumstances permit, transformative learners move toward a frame of reference that is more inclusive, discriminating, self-reflective, and integrative of experience (Mezirow, 1997).

The theory of transformative learning developed by J. Mezirow is described that through it "We transform our frames of reference through critical reflection on the assumptions upon which our interpretations, beliefs, and habits of mind or points of view are based" (Mezirow, 1997, 7).

The transformative learning has two basic kinds of learning: instrumental and communicative learning. Instrumental learning is focused on learning through task-oriented problem solving and determination of cause-and-effect relationships (Merriam, Bierema, 2013). Communicative learning involves how individuals communicate their feelings, needs and desires.

J. Mezirow distinguishes four principles of adult learning:
- elaborating of schemes in which the learners are directly engaged in the learning process;
- examining the true problems or situations;
- critical approach to contemplation about experience;
- interaction with other learners (Mezirow, 1997).

The socialized individual comes in touch with other individuals every day the interaction and communication occur. The communication is a complicated process because each individual involved in it which is specific, unique.

H.J.M. Hermans proposed to emphasize:
- the area of internal "I"; my roles, versions – social (wife, psychotherapist, citizen) or personality (vegetarian, dreamer, art house fan);
- the area of external "I"; the interiorized others imagined or real; from past, present or future; certain people and entire societies; for example: mother and father or child to be born; teacher, pupils, colleagues or authors of books or films; the internal and external areas together exactly constitute "I" as a mini society;

- the society – "real others", the people around, and all three areas are in the process of change communication (Hermans, 2006).

In modern society we have to learn to make our interpretations instead of acting in accordance with the goals, attitudes, judgments and feelings of others. The collaboration for such understanding is the main goal. Transformative learning itself develops the autonomous thinking on the basis of explanation, validation and reformulation of the nature of their experience.

Dialogue as a result of implementation of constructive and transformative learning in mediation

The dialogue is the main form of communication of the social subject, and the dialogue also becomes the main instrument in the process of conflict resolution in mediation. Dialogue has five features: mutuality, propinquity, empathy, risk, and commitment (Capizzo, 2018). M. Buber underlines three types of dialogue in which people communicate:
- genuine whether spoken or silent where each of the participants really has in mind the other or others in their present and particular being and turns to them with the intention of establishing a living mutual relation between himself and them;
- technical prompted by the need of objective understanding;
- monologue disguised as dialogue in which two men, meeting in space, speak each to himself in strangely tortuous and circuitous ways and yet imagine they have escaped the torment of being thrown back on their own resources (Buber, 2003).

Due to the own unique nature, dialogue helps to explain the complex processes through the context in which we are alive, challenge the reflection and express encountered thoughts. To succeed a good dialogue, a positive attitude and undivided attention among the participants of the dialogue are required (Soika, 2017). The dialogue "is the basis for mutual cooperation, conflict resolution, promoting reflection, and inspiring new, creative ideas and actions" (Soika, 2020, 451).

The conditionality is distinguished between internal and external when all merge in the process of dialogue. However, not any communication is meant as dialogue. H.J.M. Hermans and A. Hermans-Konopka propose to examine the dialogue in contrast to "the monologue" and include in it:
- listening to everybody's opinion;
- allocation of area to disclose each own experience or opinion;
- interest in identification of possible non-understanding and desire to correct it;
- readiness to learn from each other on the basis of mutual exchange (Hermans, Hermans-Konopka, 2010).

The mediator's roles based on dialogue in the process of mediation

The authors consider that during the mediation process the mediator plays not only the role of intermediary, but also the important role of the teacher (pedagogue) who shows and teaches the type of communication and structure for conflict resolution to the parties involved in the conflict. From this point of view the mediation process can be regarded as a learning process and, precisely, the adult further education process. At the moment when the conflicting parties have reached a deadlock as a result of insufficient knowledge, this is the right moment to learn something new useful.

O. Kaufman characterizes his work as a mediator as follows "Because I am working with two adults, as opposed to one, and they are human and not canines this is always a delicate, complex and nuanced balancing act. However, what we can learn from dog training is that the response we are trying to evoke is not generally a natural response and that our job as mediators may involve some behaviour modification and client retraining so that the process stays on the level of rational rather than instinctive/reactive" (Kaufman, 2019).

The teacher becomes a facilitator who gives a task to the participants of the conversation to construct knowledge about themselves, about other people and social norms. As a result, the participants play a significant role in the learning environment and process (Taylor, Cranton, 2012). The same idea can be applied to the mediation process where a mediator promotes clients to be active participants through a dialogue.

The mediator is a person who determines and conducts the mediation process, so that the parties involved in the conflict obtain the necessary information understanding to reach the conflict resolution which as fully as possible realizes their expectations and needs in the existing reality.

I. Kokle-Narbuta in her study has underlined the pedagogue paradigm based on constructivism used also by the mediator in mediation "the pedagogue is no longer an expert, but acts as a coordinator – pedagogue – creates a dialogue, encourages, contributes, assists – that radically contrasts with the traditional learning environment" (Kokle-Narbuta, 2018, 60).

In mediation various types of dialogues are used which enhance mutual understanding and collaboration, respect and tolerance, improvement of relationship culture, inquiry of the facts of situation and reaching agreement (as discourse) (Portere, Morevs, 2020b). Having regard that the mediation is a constructive process and the methods of dialogue (discourse) are used there, we can talk about constructivism of the mediation (Portere, Morevs, 2020a)

The aspects of principal constructive approaches are as follows:
- dialogue and its type – discourse, which is an instrument of reaching agreement by the conflicting parties;
- intervention of a constructive mediator conducting the discourse;
- assistance to the participants of the conflict is to overcome phonetic, semantic, logic and stylistic barriers, that is, to achieve a shared understanding of denotations;
- constructive mediation process which provides for creation or renewal of constructs for reaching agreement;
- testing of participants of mediation (questionnaire) and processing of results;
- the role of mediator as middleman in the process of conflict resolution and reaching agreement that may be comparable with the role of teachers in the learning process;
- constructive learning process of the conflicting parties and the mediators (Portere, Morevs, 2020a).

The mediator in the conflict is not only a mediator, a magistrate or a moderator, but also a teacher who, by his example and explanations, can teach the conflicting parties (Portere, Briede, 2019a), and his important skill to conduct the dialogue is taught to the conflicting parties. The components of dialogue are taken into consideration: partner genuineness, emphatic understanding, active listening, full presence, spiritual and mutual equality, eye contact, clear expression of information, interaction, listening and hearing, trusting the world and other people, connection with the surrounding world, responding to a dialogical situation, deep feeling of one's own "Me", high level of rational thinking, high level of reflection, autonomous individual behaviour, individual position and doubt of it, be able to change one's personality, be able to recognize own lack of knowledge or weakness, be able to ask for help from another person and receive I, equality, tolerance, fresh ideas (Portere, Briede, 2019b).

A mediator's role often is explained using more than one word, for example, mediation expert D. Silvera mentions that "mediators are generally lawyers, psychologists, educators or community leaders, or any mature adult with life experience – priding themselves on their impartiality and neutrality". Multiple roles are a basis for their features:
- skilfully facilitate a structured communication process;
- establish a polite atmosphere in difficult circumstances;
- demonstrate empathy and respect;
- empower the parties to express themselves;
- encourage the parties to listen to each other;
- aspire towards impartiality;
- leave all decision making to the parties;
- be aware of and manage own values;
- be prepared to tolerate ambiguity (Silvera, 2006).

F. Elliott mentions similar features emphasizing the mediator's managerial skills in the process. He or she should take control of the process and aid the parties to settlement. The Centre for Effective Dispute Resolution states that the mediator fulfils several important roles during the mediation and should:

- manage the process firmly but sensitively;
- facilitate the parties towards settlement by overcoming deadlock;
- gather information to identify common goals;
- be a reality tester, helping the parties to take a realistic view of the dispute;
- act as a problem solver, thinking creatively to help the parties construct an outcome that best meets their needs;
- soak up the feelings of parties and frustrations, re-channelling the parties' energy into positive approaches to the issues;
- act as a scribe who assists in the writing of the agreement;
- be a settlement supervisor, checking that the settlement agreement has worked and being available to help with further problems that may occur;
- prompt the parties towards settlement and keep the momentum towards settlement (Elliott, 2016).

While J. Habermas indicates the existence of discussions and argumentations in all cultures but at the same time it is a big problem to keep neutrality (Habermas, 1999). That is why the role of the meditator is crucial because one angle of it is to enhance stable flow of dialogue.

Each person in the conflict should be respected, as all other persons and should remember that others may have different and valuable perspectives based on their past experience (Lewitter, Bourne, Attwood, 2019)

The mediator's role as the adult pedagogue's role is interactive, based on dialogue, such as to:

- assist the parties to overcome miscommunication, misunderstanding and confusion by helping them clarify what is agreed and disputed, and identifying the underlying issues;
- develop awareness of the real needs of those who are involved by drawing out information and probing each party for their underlying interests;
- help the parties to generate and evaluate options to resolve the dispute;
- be a sounding board and reality check for parties to reflect on the reasonableness of their positions and demands and alternative approaches;
- facilitate communication and motivate the parties to find a way to work co-operatively towards finding a mutually acceptable solution;
- build on areas of agreement and assist parties to craft a satisfactory and effective settlement (Macmillan, 2012, 4).

Considering theoretical investigations of adult learning processes and styles, constructivism and constructivism in mediation, we can, firstly, to define the components of constructive adult learning in the conflict resolution in the mediation process conducted by the mediator:

- during the mediation process the parties learn to reach solution of their conflict; at the beginning the terms of the process and the facts of the situation should be agreed upon;
- the value of mediation is interests, maintained or renewed relations of the parties, which result in the conflict resolution;
- the materials of learning are the cognitive constructs of the parties and signs of conflict situation;
- learning takes occurs the basis of the existing knowledge, experience and the mediator's skills and knowledge, the multifaceted view of the situation and skills of dialogue;
- the mediator creates a dialogue with the parties and among the parties and helps to the parties to construe their own knowledge and change their constructs and find solutions of the conflict.

Considering the above-mentioned theoretical concepts and the authors' experience in mediation processes it is possible to mention the following roles of the mediator: makes the conflict multifaceted, enhances dialogue and understanding, brings closer the conflicting parties, helps the parties involved in the conflict to come closer to the reality, reduces the level of emotions, creates helping relationship, provides concepts of social science and science of conflictology, psychology, without assessment of the

parties; conducts the discourse in the area determined by the conflicting parties; serves as example of communication for the conflicting parties.

The mediator must be able to help and teach the parties to the conflict:
- take a critical look at the conflict situation, examining the causes and potential consequences of
- the situation;
- understand parties' needs and expressing itself clearly about them;
- enhance hearing and understanding the expressions of needs of a partner by accepting a companion as a unique personality with his/her own experience;
- negotiate constructively on the subject set by mediation, with a view to finding a solution that
- would bring satisfaction to all parties involved in the conflict;
- learn the skills of non-violent, constructive dialogue for future conflict situations.

Transformative learning is a way how to make a mediator's role more effective. The purpose of the transformative learning is to achieve the learner's perspective transformation which may be more often reached on the basis of disorienting dilemmas triggered by a life crisis or major life transition, and rarely on the basis of the accumulation of transformations in the learner's meaning schemes.

D.A. Kolb in his theory of learning styles includes four stages of learning which in their turn form the learning cycle: concrete learning, reflective observation, abstract conceptualization and active experimentation. The learning process is integrated, where each subsequent stage of learning supports and enhances each other (Kolb, Kolb, 2013). In Mediation process D.A. Kolb's (Kolb, Kolb, 2013) theory of learning style may be observed very explicitly, because the parties involved in the conflict initially show their experience (attitudes) about the conflict situation, then encounter the experience of the opposite party about the same conflict, thus gaining new experience – new knowledge. At the next stage the conflicting parties try abstractly to reach the possible conflict resolutions. And at the end they reach the agreement which has to be implemented in reality and to provide solution of the conflict and peace.

Developing the theory of the four learning styles, D.A. Kolb and A.Y. Kolb define nine learning styles: initiating, experiencing, imagining, acting, balancing, reflecting, deciding, thinking and analysing. The parties involved in mediation use all nine styles creating perfect space for Conversational Learning characterized as follows: Conversational Learning describes the dimensions of spaces that allow for good conversation. Good conversation is more likely to occur in spaces that integrate thinking and feeling, talking and listening, leadership and solidarity, recognition of individuality and relatedness and discursive and recursive processes. When the conversational space is dominated by one extreme of these dimensions, e.g., talking without listening, conversational learning is diminished (Kolb, Kolb, 2013).

The stages of mediation process can be applied to D.A. Kolb's learning styles (Table 1). The types of learning of adult conflict resolution in the mediation process may be reflected examining a structured mediation process by D.A. Kolbs's styles. They help to orientate in dialogue learning and the roles of the mediator.

Table 1

Usage of D.A. Kolb's learning styles in the stages of mediation (developed by the authors)

Stage of mediation process	Key elements of stage	Applied learning style according to D.A. Kolb
1st stage – introduction with the mediation process	Awareness of the lack of existing knowledge and skills and the benefits of the desired (possible) knowledge and skills	Getting to know the possibility to resolve the conflict constructively
2nd stage – clarification of positions. Inquiry of known and unknown	Concrete experience (subjective view on situation) verbalization (awareness)	Specific experience
3rd stage – awareness of the self, the other	Expansion of experience, expansion of the view on the situation with inclusion of the self, others, conditions, possibilities	Reflexive observation
4th stage – finding solutions	Consideration of various options	Abstract conceptualization
5th stage – formulating the best option	Linking, adjusting desires and conditions – the legal, social framework of agreement	Active experimentation

Conclusions

The mediator's roles are a constellation of knowledge, skills and attitudes about the social interaction of an individual and environment ensuring the mediator's ability to support the individual in conflict resolution and conduct a preventive action based on the method of dialogue.

Constructivist approach with the emphasis on dialogue and implementation of D.A. Kolb's learning styles in the stages of mediation contribute to this process so that parties can more successfully solve conflicts. Further usage of the learning styles should be investigated in the mediation process.

Mediation is a process where a mediator as a neutral person can implement a teacher's role and facilitate party's education how to meet their needs in a constructive way.

A mediator has to help and teach parties in the mediation situation looking critically at the conflict, examining the causes and potential.

Acknowledgement

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Development of Business-Related Competences in a Case Study-Based Professional English Course in Business Administration Studies

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Abstract: A professional English course in business administration studies at the university should lay emphasis on the specific demands and interests of students studying in this programme and requirements of English language knowledge imposed by the business domain. Development of business-related competences in the professional English course is essential for future entrepreneurs who will use English in multiple business contexts to run a successful and competitive business. The aim of the study was to develop and to approbate such business-related competences as business management and personal management in a professional English course in business administration studies. The author of the article emphasizes the idea that the development of business-related competences can be enhanced if the case study method is applied. The results of the study were obtained in a pedagogical experiment involving business administration students in case study modules within a professional English course. Participating in the professional English case study-based course the students developed business-related competences comprising business management and personal management and the article describes the process of these competences' practical acquisition.

Keywords: university education, professional English, business-related competences, case study.

Introduction

In addition to fostering foreign language skills in a professional English course at the university the educator should take into consideration specific characteristics of student future profession. Business administration students require a professional English course that could help them develop as mature individuals possessing job-specific competences to deal with various sophisticated mental tasks at the workplace, communicate in business environments in the foreign language, be able to run a profitable business and be capable of self-realisation.

The article emphasizes the importance of using a modern approach in the professional English language course in which knowledge is transferred to students not in a complete form but in the process of active participation in cognitive activities in the context of a real-world problem situation (Lateef, 2010; Bojare, Ignatjeva, 2014, Gawande, Al-Senaidi, 2015; Brattseva, Kovalev, 2015; Bridges, Chan, Hmelo-Silver, 2016). The author summarises benefits of the case study method's application in the professional English course in business administration studies and aims to describe the process of developing such vital business-related competences as business management and personal management.

The article suggests that the use of cases can be a very effective classroom technique in the professional business English classroom as it puts the student in the centre of the study process, it is an active learning method which requires a high level of involvement and interaction, intense cooperative discussion, collective analysis of a situation and collaborative problem solving from the students (Popescu, 2016; Davis, Yadav, 2014; Li, 2014; Beckisheva, Gasparyan, Kovalenko, 2015; Al-Mansour, Hussain, 2014; Lundeberg, 2008). The author believes that to understand different peculiar business situations and manage them effectively in the foreign language, case studies should be used widely in the professional English classroom.

A good case can bring reality into the classroom presenting a story that provokes a vivid discussion and stimulate students to solve the problem raised in the case, thus allowing learners to adapt themselves to every day working situations and develop their system of knowledge and an individual approach for dealing with problems connected to entrepreneurship (Thomas, 2003; Richards, 2006; Leenders, Mauffette-Launders, Erskine, 2010).

These days case study is becoming increasingly popular in professional English courses due to its transdisciplinary aspect. In the present study, the aim of this method is not merely to develop the future entrepreneur's skills and promote knowledge of the business domain but also to connect these skills and

knowledge with the foreign language acquisition. The graduates of business administration have to demonstrate the knowledge of the specific foreign language customized to the requirements of their future job. This goal can be achieved namely through the usage of the case study method in the professional English classroom as cases present the student with an opportunity to apply the foreign language material creatively based on their professional knowledge.

Specific context of business administration

The graduate of business administration studies is a specialist who is able to incorporate various functional areas in an enterprise, e.g., production, finance, economics, human resources, administration, accounting, sales, marketing and logistics in both private and state sectors. Business administration graduates can set up their own businesses or work for firms providing consultancy services.

The most common job opportunities for business administration graduates are in general management of companies and organisations, and administration of certain departments in companies and organisations. In general, students who complete the Bachelor Degree in Business Administration should be able to perform anyone of a wide range of functions at different levels in the field of organisational management and administration.

E. Koc (2017) within the EU project, titled Communicating Professional Competence has developed a competence framework for business administration for entrepreneurs, he suggests business administrators/entrepreneurs:

- to investigate and to evaluate business opportunities (formulating the idea, doing market research, determining necessary resources, assessing risks);
- to plan and to develop the business (creating business plan, listing objectives, setting up investment);
- to set up the business (acquiring staff, renting office, buying equipment, creating marketing plans);
- to manage the business (administering business processes, selling products, establishing realistic goals and objectives, managing staff, maintaining team motivation);
- to review and to improve the business (evaluating business performance, assessing customer satisfaction, optimizing product/services);
- to establish and to maintain a positive work environment, setting professional and effective relationships within the enterprise, resolving conflicts;
- to act in accordance with business ethics, relevant legislation, regulations, and codes of practice;
- to manage and to develop themselves (develop and maintain knowledge and skills necessary for the business, learn continuously, self-reflecting constantly).

There are several business administrations programmes in Latvia offered by such higher educational institutions as:

- University of Latvia (Business Administration, 2020b);
- Latvia University of Life Sciences and Technologies (Professional study programme…, 2020);
- Baltic International Academy (Entrepreneurship,2020);
- ISMA (Professional Bachelor's degree…, 2020);
- Turiba University (Business Administration, 2020a);
- RISEBA (Biznesa vadība…, 2020);
- RSU (Studiju programma…, 2020).

The common planned results of the aforementioned business administration programmes cover the following:

- orienting to the processes of the contemporary international economy and business and the ability to analyse them by using statistical, econometric and other methods of quantitative and qualitative analysis;
- ability to orient in global economic environment and to take decisions in the circumstances of global competition;

- understanding the basics of every legal aspect of entrepreneurship to participate efficiently in the activities of international trade, finance and other fields.

According to **P**rofessional Standards of Latvia (Noteikumi par Profesiju**…,** 2017) the basic professional tasks of business managers/administrators are:
- to identify or formulate basic business directions;
- to plan, manage and coordinate the company's work in general, select and train personnel, organize and manage the work of subordinate personnel in the company;
- to identify economic and technical development indicators, specific tasks and to consult subordinates;
- to organize and manage transactions, operational processes - concluding transactions with suppliers, customers, other institutions, associations, foundations, organizations;
- to represent the company in business deals with other companies;
- to control expenditure, to ensure planning of material supply and rational use of resources;
- to analyse and evaluate the company's performance, and report to the board of directors, management team and senior executives;
- to organize operational, accounting, statistical records;
- to conclude collective agreements and monitor their execution;
- to organize and manage the work of the board, the commission and the council;
- to prepare conclusions, evaluations and proposals;
- to make decisions about the company's operation and its management and fulfil duties minimizing possible business risks.

On the basis of the described above wide range of functions in the field of business administration and entrepreneurship, common planned results of business administration programmes in Latvia, and the basic professional tasks of business managers/administrators defined by Professional Standards (Noteikumi par Profesiju…, 2017), the author has come to the conclusion that business-related competences can be subdivided into two major subgroups, competences that are required to manage business, and ones that are required for personal self-management as an entrepreneur, in the present article these competences are called business management and personal management competences. The aim of the study is to develop and approbate business management competence and personal management competence in a professional English course in business administration studies.

Methodology

Benefits of case study

Various authors discuss the advantages of using cases in teaching professional English. Having analysed theoretical research (Yin, 2014; Strelchonok, Ludviga, 2013; Hsu, 2016; Basta, 2017), the author of the present paper has summarized its benefits, on that account the main advantages of the case study method are the following:
- development of a future entrepreneur's individuality, his/her unique style of behaviour in professional environment;
- development of analytical, logical and critical thinking;
- enhanced understanding of the entrepreneurial environment and its problems;
- gain of insight into complexity of 'real world' business situations;
- active involvement in the foreign language learning process, with more responsibility for own learning;
- integration of major concepts of the professional business English course, integrated knowledge from other subjects;
- enhanced understanding of the topics studied: the theory is related to practice and it leads to the in-depth understanding of the issue;
- examining various real business situations from different perspectives, confronting, analysing, and solving problems collaboratively;
- dealing with situations of uncertainty and ambiguity;

- development of decision-making and strategic planning skills;
- taking decisions with incomplete information;
- development of student autonomy;
- distinguishing between facts and opinions;
- development of a future professional's individuality, unique style of behaviour;
- development of foreign language skills: reading, speaking, listening and writing; learning general vocabulary, specific lexis and grammar of English;
- development of interactive skills, questioning, group problem solving skills, skills necessary for collaborative work and partnership;
- development of public speaking skills;
- development of verbal and non-verbal communication skills;
- development of creativity;
- increased student motivation and interest in the subject;
- enhanced confidence in foreign language use;
- development of presentation, negotiation and team-working skills;
- consideration of multiple perspectives;
- awareness of alternative solutions;
- applying knowledge to new and unique circumstances;
- development of learning skills: library skills, interpretation skills, information summary skills;
- development of self-evaluation, self-correction and reflection skills.

The author of the article reckons that the development of all mentioned above skills and features is highly beneficial for the students of business administration. In the case study method, students develop their own unique framework for understanding and addressing problems in the business sphere.

T. Sinkus (Sinkus, 2020, 144) conducted a research on students' opinions about the application of cases in Business English courses and her study showed that the majority of students viewed involvement in cases as an opportunity 'to experience and enjoy more creative and engaging ways of learning, which helped build confidence in speaking English and find new objectives in learning the foreign language. Most students appreciated the opportunity to approach business problems from various perspectives, develop foreign language interactive skills, apply what they learned in practice, reflect on participation in case studies, and increase responsibility for learning'.

Therefore, the case study is one of the most effective teaching methods to prepare potential entrepreneurs for the future career in modern business environment. It was concluded by the author that the case study method application in the professional English course can enhance the development of business-related competences comprising business management and personal management competence.

Business management competence

Business management competence is indispensable for the success of an entrepreneur since the task of setting up and maintaining a business can be more complicated if this competence is underdeveloped. As T. Sinkus states (Sinkus, 2019, 175), business management competence provides a business person with 'knowledge, conceptual abilities, skills and strategies of various integrated aspects of business domain that can be practically applied in current, unpredictable, ever-changing business environment to plan, set up, develop, manage and improve a business activity'.

Fostering business management competence at the university is not merely supplying learners with theoretical and practical knowledge of the business sphere, an educator should provide potential entrepreneurs with an opportunity to develop certain individual conceptual skills and abilities that can be practically applied in current interconnected and ever-changing entrepreneurial environment. These vital skills and abilities are requisites for competitiveness, innovation, productivity, decision taking, initiative, and communication.

The author of the present paper believes that to develop business management competence a business administration student should:
- acquire knowledge and skills of various integrated aspects of business administration in theory and practice;
- be able to set up, manage and improve a business activity;
- keep up to date with new developments, find out best practices, identify and obtain opportunities that are not obvious to others;
- possess strong critical, analytical, problem-solving and project management skills;
- possess strategic thinking, planning over a timescale recognizing external trends and opportunities;
- be able to participate in team working and lead the members of a team;
- be decisive and resolve issues as they arise, respond flexibly to deal with changing circumstances;
- be optimistic and understand that risk taking means trying something new, and possibly better; assess choices adequately, carefully weighing the possible outcomes;
- be persistent and take repeated actions to overcome the obstacles;
- build trust and long-term relationships with customers, set up an expectation of high level of customer service;
- possess networking skills, which can provide access to information, expertise, collaboration and sales;
- possess the ability to persuade partners and stakeholders to collaborate;
- possess a high level of communicative skills in native and foreign languages;
- possess computer and IT skills;
- be able to conduct research projects related to business.

Personal management competence

Apart from business management, business-related competence also comprises a personal management competence. A personal management competence of the entrepreneur is a set of knowledge, abilities, skills, character features, behaviours, and attitudes that must be mastered by an entrepreneur individually rather than being shared within a group or team. Developing of personal management competence is highly important in business administration studies since entrepreneurship offers the opportunity to work according to personal goals, interests, values, and beliefs, striving toward their development and realization (Sinkus, 2019, 176).

Personal management competence encompasses cognitive skills and strategies which are necessary to construct personal knowledge and judgments and play an active role in shaping entrepreneurial environment, accomplishing business activities and promoting business, taking initiative and taking ownership in a number of responsibilities. It enables an entrepreneur to manage and coordinate personal time, self-growth, self-confidence, self-awareness; reflect on personal experience, individual strengths and weaknesses and develop on those. If entrepreneurs lack personal management competence, they may give up even despite business prosperity.

The author of the article reckons that to facilitate personal management competence a prospective entrepreneur in business administration studies should develop:
- an ability to set the goals which have importance in business and are compatible with personal values;
- confidence, a sense of self-worth and personal identity;
- self-awareness and coping with stress and emotions;
- set of values, beliefs and principles to distinguish right from wrong;
- responsibility for personal development and promotion, being an active participant of the educational process;
- an ability to manage personal education, evaluating strengths and weaknesses, setting realistic goals, monitoring performance and progress;

- self-reflective awareness, be *able* to think carefully about how to make changes and improvements, invite feedback from others;
- strong organisational and time management skills, an ability to plan workload, build priorities and meet deadlines;
- creative thinking, generating and exploring ideas, trying different ways to deal with issues;
- flexibility when circumstances change, adapting to different contexts, trying different roles;
- confidence in cooperative work,
- an ability to resolve conflicts, empathy and respect to others;
- understanding of own and others' cultures and traditions, appreciation of the benefits of diversity.

To develop business-related competences comprising business management and personal management the author of the article has developed a professional English program and practically approved it involving seven groups of business administration students in a case study-based professional English course. In total, one hundred and seven students of three higher educational institutions: Latvia University of Life Sciences and Technologies, University of Latvia and Baltic International Academy took part in the experiment during four consecutive study years from 2016 to 2020.

The professional English course's syllabus was conceived of as three separate case study-based modules titled Negotiations, Meetings and Presentations. Participating in the lessons students:
- were assigned a case,
- studied it individually,
- discussed it in pairs and small groups,
- studied vocabulary and professional terminology necessary to deal with a case,
- were involved in various activities related to a case, e.g., discussions, role plays, simulations,
- were assessed,
- reflected on their work and the work of their peers,
- and presented their self-evaluation.

Next section presents a detailed description of the process of business-related competences' development in case study modules in the professional English course.

Results and Discussion

Business management competence's development in case study modules

Taking part in the case study modules the students learned theoretical and practical aspects of the business sphere and they were provided with environment for business administration training. The case studies allowed to put future entrepreneurs into credible business situations and see how they respond. It helped the teacher prepare students for real everyday business situations and encouraged them to consider different ways of responding to events in business.

The case study modules involved the students in practicing business presentations, meetings and negotiations in English. The topics covered within the case study modules were all related to the theoretical and practical aspects of the business sphere, e.g.: types of business organizations, company structure, contracts, money matters, employment, business etiquette, advertising, business letters, customer service, telephoning, etc. The students developed speaking, reading, listening and writing skills and the use of context-specific vocabulary and idiomatic language. The students' personal experiences and opinions created the basis of all discussions in small groups and whole class activities.

The students discussed the importance of building relationships in negotiations, learned useful phrases for a range of relationship-building techniques; practiced relationship-building in negotiation. They learned professional vocabulary, business terms and strategies for negotiations as well as meetings and presentations, they practiced useful phrases, e.g., for interrupting or clarifying, gave definitions of terms, presented and commented graphs and charts, analysed the cases and shared their opinions, knowledge and experience.

Business management competence's development process in case study modules is summarized in (Table 1) below. The case study modules also provided an opportunity to develop business writing skills.

For instance, one group of students was asked to take the minutes of the meeting called to solve the problem or to write an agenda of the meeting. When the discussion at the meeting finished and the final decision was taken, all students were requested to use the information in a written form. It was a letter, a memorandum, a list of points, a mind map, an action plan, a report, an e-mail or a note – any kind of business writing which best suited the case matter. To do that they needed instruction from the teacher on the layout, style and appropriate tone.

Table 1

Business management competence's development in case study modules

Module's title	Business management competence's indicators	Activities in case study modules promoting business management competence
• Meetings • Nego- tiations • Presen- tations	• acquisition of knowledge and skills of various integrated aspects of business administration in theory and practice; • developing spoken and written communication skills; • recognizing different business ethics concepts, such as stakeholders, social responsibility, sustainability; • employability/employing people;	learning useful phrases, vocabulary, skills, techniques and tactics, business etiquette tips and applying the knowledge in the following communicative business English situations within the case study modules: • practicing socializing, relationship-building; • conducting a job interview; • writing business documents: letters, e-mails, CV, letter of application, notice, agenda, minutes of a meeting; • bargaining; • persuading potential clients and partners and negotiating; • holding meetings; • giving presentations;
• Nego- tiations	• learning from others; • participating in/leading team work; • setting up, managing and improving a business activity;	• discussion and sharing of opinions, experience and knowledge on the following topics: • what it means to be an owner of a business and discuss the importance of entrepreneurship to individuals and society; • dealing with complaints at work; • the importance of building relationships with customers and partners; • reasons for business negotiating; • skills necessary in the negotiating process; • how to prepare for negotiations; • principles of negotiation process; • elements involved in every business; • the challenges of growing business and how to meet them;
• Meetings	• building trust and long-term relationships with customers, setting up an expectation of high level of customer service;	• involvement in relationship-building techniques: group/whole class work: matching techniques with explanations and then checking with the class; • eliciting examples of these situations from students' own experience; • discussing what can go wrong with each technique (e.g., if they are used too much as cynical techniques, rather than genuine attempts to be nice); • exploring target customers of various companies, exploring competitors' customers;
• Presen- tations	• conducting research related to business; • keeping up to date with new developments; • finding out best practice identifying opportunities that are not obvious to others; • contextualizing current events or major international trends; • possess networking skills, which can provide access to	• research on stories of business success; • preparing and giving a presentation about a company including information about its activities, products or services, its size, location of main offices or plants, subsidiaries and its strengths in the market; • writing a narrative about an entrepreneur's life and achievements;

Module's title	Business management competence's indicators	Activities in case study modules promoting business management competence
	information, expertise, collaboration and sales;	
• Meetings	• participating in/leading team work; project management skills; • persuading partners to collaborate; • being decisive and resolving issues as they arise, responding flexibly to deal with changing circumstances;	• practicing holding a meeting keeping to the structure: 1) opening meeting: small talk, welcome; 2) following agenda: taking the minutes, watching the time, regaining focus, voting; 3) closing meeting: wrapping up, reminders, thank yous/congratulations, follow-up.
• Presen-tations	• possessing computer and IT skills.	• talking about the internet, using conversational cards to interview a partner about buying/selling on the internet; • discussion about the most useful sites for business; • usage of computer skills, multimedia to prepare a presentation.

Personal management competence's development in case study modules

Various case-based activities presented the learners with an opportunity to participate in spontaneous and less structured foreign language use. Communicating with peers they could control the topic, chose themselves when to participate, drew on their prior knowledge and made their personal decisions. It lead the students to acquire what they need and want to use in real life professional business setting.

Within the case study process the students were given an opportunity to gain experience in swapping roles with the teacher to manage their personal education, take charge of their learning and become more independent. The learners changed their passive attitude to learning to a more active, leading role and became self-directed.

The students developed their personal management competence by being involved in all aspects of the learning process. The case-based tasks were administered and controlled by the students themselves, they prepared at home and selected the sources necessary for the work on a case, researched the relevant information, set up their goals and objectives to meet these goals, initiated discussions in class, assigned tasks for their peers, shared responsibilities, etc.

Delivering presentations in front of the whole class was an essential and meaningful task for the developing of personal management competence. It required a lot of preparation and effort from the students. They chose a topic themselves, set up goals, created a plan (usually a list of bullet points) that helped them structure their speech, selected visual materials, considered the issues that would be interesting and appropriate for the audience, etc.

Performance for the audience helped the students develop their self-confidence, overcome stress, the students learned how to deal with emotions, manage their time and considered their non-verbal communication.

Involving the students in self-assessment process resulted in increased self-awareness and enhanced motivation. When they were asked to evaluate their own progress, they felt more ownership of the learning process and were better able to identify specific learning goals for themselves, became aware of the ways they learn best. The learners took part in self-assessment questionnaire identified their weaknesses and strengths, monitored their progress and set up new goals for learning.

The teacher used a reflection activity at the end of each module, where the students wrote short descriptions and opinions about their work. There are questions that the teacher used as prompts in self-assessment: What did you do in the module that helped you the most to learn English? What was not particularly effective? What did you do to help yourself understand something when you were not clear? What difficulties do you have?

The students also summarized their learning after each class. They were provided with several prompts: What are two things you learned today? What is the most interesting thing you learned today? What do you know now that you did not know before today? What would you like to do next? Personal management competence's development process is summarized in (Table 2).

Table 2

Personal management competence's development in case study modules

Module's title	Personal management competence's indicators	Activities in case study modules developing personal management competence
• Negotiations	• an ability to set goals which have importance in business and are compatible with personal values; • confidence, a sense of self-worth and personal identity; • creative thinking, trying different ways to deal with issues;	• negotiating a pay rise with the employer, preparing to present the problem to the management in a way to persuade them to pay more, mentioning own strengths and achievements, setting goals and objectives to be reached in the negotiation process; • evaluating and coming up with various alternatives to the main goals and objectives;
• Presentations • Negotiations • Meetings	• self-awareness and coping with stress and emotions;	• giving presentations for the whole class; • taking on the responsibility of leading the meeting; • negotiations with the boss;
• Meetings	• strong organisational skills;	• organizing the meetings; • trying the leading role of the chairperson of the meetings: keeping the discussion focused, using expressions to regain the focus of the meeting, keeping the meeting centred on the items as they appear on the agenda, closing and wrapping out the meeting;
• Presentations • Meetings	• time management, an ability to plan workloads and meet deadlines;	• staying within the time limits of the meetings, following the agenda, using expressions to keep the meeting flowing at appropriate pace; • keeping to the time limit (5-7 min) in giving a presentation; • coping with the large amount of workload in the course, setting priorities and submitting assignments on time;
• Negotiations	• developing a set of values, beliefs and principles to distinguish right from wrong;	• discussing the business term collaborative negotiation and contrasting it to competitive collaboration; • discussing such dishonest practices in negotiations as lying, manipulation, intimidation and bribery; discussing the consequences of competitive collaboration and dishonest practices;
• Presentations • Negotiations • Meetings	• an ability to manage personal education, evaluating strengths and weaknesses, setting realistic goals, monitoring performance and progress;	• after each case study module, the students are actively involved in assessing their own progress, strengths and weaknesses, they are reflecting on case study performance, self-correcting; • getting feedback from the teacher and peers; • discussing what should be improved and set new learning goals;
• Negotiations	• self-reflective awareness, *to be able* to think carefully about how to make changes and improvements, invite feedback from others;	• negotiating a pay rise with the employer, company owner, preparing to present the problem to the management in a way to persuade them to pay more, mentioning own strengths and achievements;
• Presentations • Negotiations • Meetings	• flexibility when circumstances change, adapting to different contexts;	• running out of time due to an unexpected problem or circumstance (e.g., an important figure is missing in the handouts – offering a brief explanation of the figure, etc.) and being forced to adjourn the meeting; • dealing with tricky questions during meetings, negotiations and presentations.

The students enjoyed taking part in case study modules because they were not told what to say and they were the only decision-makers in the cases. They were managers and the teacher was an observer, mediator and facilitator.

Finally of the professional English course students of three higher educational institutions, in total 7 groups including 107 students studying during four consecutive years from 2016 to 2020, were asked to evaluate their business management competence and personal management competences' promotion in the course. There were 64 respondents in Latvia University of Life Sciences and Technologies, 26 students from University of Latvia and 17 students studying in Baltic International Academy. The results of student reflections are summarized in Table 3 below.

Table 3

Student Self-evaluation of business management and personal management competences' promotion in the course

Higher Educational institutions	Proportion of students indicating business management competence's promotion	Proportion of students indicating personal management competence's promotion
Latvia University of Life Sciences and Technologies	78.13 %	67.19 %
University of Latvia	69.23 %	57.69 %
Baltic International Academy	88.24 %	52.94 %

In reflections, in which the business administration students were asked to self-evaluate their competences after the professional English course, 78.13 % of Latvia University of Life Sciences and Technologies students (50 respondents) indicated promotion of business management competence, and 67.19 % of students (43 respondents) showed an increase in personal management competence. Furthermore, 69.23 % of students from University of Latvia (18 respondents) admitted business management competence's promotion, and 57.69 % of students (15 respondents) indicated personal management competence's enhancement. Finally, 88.24 % of students from Baltic International Academy (15 respondents) indicated business management competence's promotion, and 52.94 % (9 respondents) pointed out that their personal management competence has increased.

Conclusions

To sum up, the author of the article has developed and practically approved a course program which encouraged intense, active and collaborative learning of professional English. The program acquisition provided the students with foreign language knowledge, skills, abilities and competences in support of their future working life and its complex demands.

To manage and promote a sustainable business, students of business administration should develop such vital business-related competences as business management and personal management. The benefits of developing these competences in business administration studies in the professional English course cannot be underestimated.

Business management competence provides students with knowledge and skills of various integrated aspects of business administration in theory and practice and enables an entrepreneur to set up, manage and improve a business activity being decisive and resolving issues as they arise, responding flexibly to deal with changing circumstances, keeping up to date with new developments and finding out best practices leading a team and persuading others to collaborate.

Personal management competence enables an entrepreneur to set realistic goals which have importance in business and are compatible with personal values, enhances self-reflective awareness and confidence, time management, organisational skills, a sense of self-worth and personal identity, provides with an ability to manage personal education and promotion, evaluating strengths and weaknesses, monitoring performance and progress, being ready for constant changes in business environment.

In the present study, the development of business management and personal management competences was incorporated into the professional English course using case study modules, which provided the author with numerous opportunities to develop these competences. Due to the usage of case study, the

students avoided superficial learning, applied theory in practice, developed deeper understanding and gained experience in future professions.

The students participated actively in cases which were based on various business situations, they approached problems from various perspectives as critical decision makers collaborating to achieve a common goal. Student engagement in critically thoughtful, meaningful, purposeful and relevant experiences transformed the way they learn from a mere accumulation of information to its active usage in profession-related problem solving.

The results of student reflections allow to conclude that such business-related competences as business management and personal management can be developed in the case study-based professional English course in Business Administration studies.

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Identification of Transferable Competencies and their Impact on the Paradigm Change in Higher Education in the 21st Century

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Abstract: The article presents the results of a qualitative research of an Erasmus+ KA201 project "CATCH 21st Skills – Changing the Approach to Teaching in Higher Education". The main method used in the research was a semi-structured interview led with six human resources (HR) managers of six Czech private companies. The aim of the qualitative research was to find answers to the question: Which transferable competencies are the most important for the graduate's successfulness in the labour market? After completing the interviews, the research team was able to link the concrete 21st century skills with four competence areas (sub-themes), to identify the two most important clusters of competencies (communication and collaboration) which are the most important for the employers. Secondly, the research team members found out what changes in educational paradigm would bring benefits for actual demands of job market. The conclusion of the paper offers ways and tools for development competencies among university students and it brings the description of the thesis for transforming the educational paradigm.

Keywords: transferable competencies, qualitative research, HR manager, university graduate, change in the educational paradigm.

Introduction

The importance of 21st century skills is not a new concept. The concept is often associated with concrete needs of employers, as competencies have become the global currency of the 21st century. "The term transferable competencies are not defined unambiguously in the specialized discourse. Transferable competencies are generic capabilities which allow people to succeed in a wide range of different tasks and jobs" (Enterprise in Higher…, 2019, 5). M. Yorke specifies that "the basic idea is that skills learned in one context could fairly readily be transferred to another" (Yorke, 2006, 12). A. Ylonen points out that "transferable skills are important for individuals to enhance their employability, for employers to find qualified and able employees and for the economy that needs highly skilled workforce for economic growth and competitiveness" (Ylonen, 2012, 804). "To become sustainable and competent for functioning in the continuously changing labour market a student has to develop meta-skills and transferable competencies" (Kuijpers, Meijers, 2009).

Setting a diversified goal of education with aims in honing in on students' needs and reflecting a better, more relevant education is something that has evolved throughout history. In the 1980s, a series of reports advocated for educational reform. A "National Prepared: Teachers for 21st Century" (A Nation Prepared…, 1986) was among the first released. Then "Turning Points: Preparing American Youth for the 21st Century" (Turning Points…, 1989) outlined eight principles that valued the needs of youth and aimed to address what is necessary for students to be successful in the coming century.

There are a lot of research studies focused on transferable competences, for example, M. Allen (1993) deals with a conceptual model of transferable personal skills or Czech female scientist J. Vasutova (2001) focuses on the qualification requirements for new roles of teachers. A plenty of surveys were undertaken to analyse transferable competencies, for example – a retrospective survey on degree of saturation of selected transferable competencies of graduates by L. Smekalova and K. Nemejc (2016), theoretical research on knowledge management by J. Davidova and I. Kokina (2018) and research based on the competency–based approach by E. Bogatskaia, S. Savela and L. Yarovaya (2020). The project CATCH 21 research team comes with a new insight to this problematic – in the qualitative research, the members of the team tried to find out which competencies do employers prefer and how they should be developed in higher education?

The aim of the qualitative research was to find answers to the question: Which transferable competencies are the most important for the graduate's successfulness in the labour market?

Methodology

The process of qualitative research within the project "CATCH 21st Century Skills" started in December 2019. The main aim of the interviews was to find out what concrete transferable competencies of graduates are the most important for the employer and what training would bring benefits for the actual demands of job market. The research team consisted of four staff (two academics and two researchers) of the Institute of Education and Communication (hereinafter named IEC) of the Czech University of Life Sciences Prague (hereinafter named CZU). A pilot interview was undertaken with a member of HR department of the CZU on 10th December 2019. Only one question was evaluated as unclear – it was item No. 7. The broader text with precise explanation to this question was made after this pilot testing. Two staff from the IEC selected and contacted six HR managers from different Czech or international companies in Prague and set up dates of appointments with them. The interviews were led in January 2020.

The research sample consisted of six managers from six organisations. All organisations are private, five out of them operate in the labour market and one is acting in education, training and youth sector (=private university), four are international companies with corporate management and two of Czech majority in ownership interest. Four companies are leading companies in their sector at the Czech market. Five out of them are situated in capital city of Prague, one out of them is operating in the third biggest city in the Czech Republic – Ostrava. Three of the companies in the Czech research sample are medium sized, three belong to large-sized enterprises. The majority of interviewed people were females and their age were ranked from 28 to 45 years. The length of experience in the HR position in the current company differs, two managers have intermediate working experience and the rest have short experience at the position as an HR manager. More data are presented in Table 1.

Table 1

Statistical data of the research sample

Interviewee's Data	Manager 1	Manager 2	Manager 3	Manager 4	Manager 5	Manager 6
Sector	Banking, finance	ICT	Logistic	Marketing	Insurance	Education
Operating time	14 years	12 years	3 years	4 years	3 years	2 years
Position in the firm	Head of Clients' Service	HR Manager	Recruitment Specialist	HR Manager	HR Director	HR Manager
Number of employees	9700	180	2 000	40	800	150
Gender	Male	Female	Female	Female	Female	Female
Age	42	40	35	28	45	44
Graduate Area	HR Management	Economics and Manag.	Counselling in Education	HR Management	Psycho-social care	Education of History
Job Experience	23 years	20 years	17 years	5 years	19 years	18 years

Data collection process

The basement of the interviews was a questionnaire developed by researchers and academic staff from six European universities within the project CATCH 21st Century Skills. This project team divided the 21st century skills into 7 clusters (these clusters are listed later in this article in Table 3). The questionnaire consisted of 19 items. Items 1–7 were short open-ended questions for finding some personal data such a size and sector of company, name of position, length of working experience at the HR position in the company and so on. Further items were open-ended questions, especially extended responses to concrete 21st Century Skills. In the form, there was only one closed scaling question – for giving a value from the scale 1–10 to areas (clusters) of different skills within the item no 17. Data were collected through semi-structured interviews.

There were selected HR managers of the enterprises which employed a larger number of CZU graduates. The researchers also paid attention to selecting HR managers from different industrial sectors. The interviews were organised at the workplaces of questioned HR managers, the average time of each interview took 1,5 hours. Before opening the interview, the questioned HR manager was given a sheet with all seven skill clusters, each cluster was explained in detail and concrete skills were assigned to

each cluster for clear interpretation. During the interview, three people were present– one HR manager (interviewed person), one interviewer (IEC academic staff) and one recorder (IEC researcher). The recorder took notes during the interview and coded them in the sheet of MS Office Word. Finally, the word document with answers was sent to the questioned HR manager, who had a chance to correct any unclear answers and gave authorization to record.

The data obtained from six interviews were coded into an excel sheet by the IEC researcher. The data analysis process ran from 4th to 16th March 2020. For this purpose, content analysis method was used to enable an objective and systematic analysis of oral or written data. There were two IEC staff responsible for this task, who found out that all answers were valid – they represented actual situations in the field, and they were evaluated as reliable, objective and applicable. One IEC academic staff completed written reports of findings from the analysis, she inducted and deducted conclusions from them. This process took ten days (from 17th to 27th March 2020).

Results and discussion

After completing semi-structured interviews with six HR managers, the CATCH 21 project research team was able to define four sub-themes linked to transversal competencies. Moreover, several concrete categories of skills were merged to each sub-theme. Table 2 shows the results of the content analysis clustered into competencies as the main theme, which included the sub-themes: knowledge, skills, personal traits, and vocational identity and its categories

Table 2

Analysis of results related to semi-structured interviews with HR managers

Themes	Subthemes	Categories (obtained from managers)	
Compe-tencies	Knowledge	Knowledge-based related to content area General knowledge	Knowledge of a specific position Computer literacy
	Skills	Communication and negotiation skills Building and maintaining relationship skills Czech language English language Other foreign language skills Collaboration skills	Leadership skills Customer orientation skills Problem-solving skills Learning with technology skills Self-management skills Creativity and agility skills Intercultural skills Analytical and critical thinking
	Personality Traits	Confident / Flexible Adaptive to change Responsible / Autonomous Fair-minded / Integrated Entrepreneur	Assertive / Polite Stress resistant Empathetic / Sociable Disciplined / Mature Proactive
	Vocational Identity	Motivation (eagerness) Quality management (right at the first time) Goal Orientation Vocational self-development	Adaptation to corporate culture Versatility Complexity Growth mind-set

Knowledge

"Knowledge is considered by many professionals to be a prerequisite for work success. However, more than a field of education or a university degree in an expected major, the managers consider as the most important the knowledge associated with a particular position that cannot be obtained by classical institutional education. They also emphasize continuing vocational training related to a job position (Duru et al., 2020)".

The importance of the knowledge related to a particular position can be summarized by a statement of interviewed HR managers of the ICT company: "*In our company we have created a competency model (a package of competencies), which are important across all positions. General ones across positions are, for example, ICT, language and communication skills. For each position, we have a value assigned*

to each competency on a scale of 1–6, which defines what each person should do in a particular position… It is necessary to define all competencies, the selection process is defined in a better way, but the assigned value from the scale at the job interview is then usually shifted higher during the work activity due to training and the length of practice to a particular position."

Another HR manager in the field of online marketing explained that: "One thing is the seniority of the people we need – we seek for candidates with sufficient experience in similar projects and knowledge of online marketing in a comprehensive perspective. There are not many candidates with a long experience in online marketing because the field is new in the Czech Republic."

Beside specific knowledge related to a particular position, some experts also point out the importance of general overview knowledge and general computer literacy. HR manager of IT company mentioned the attitude of the millennials to general knowledge: "*Although we are currently recruiting a lot of skilful people, I must say that people born before 2000 are more skilful and have a better "goal orientation". The millennials think they would achieve many goals with no effort, they lack active approach and autonomy, academic staff make them feel elitist for the future in IT, but they have no general overview.*"

Skills

All managers in the research sample consider "Communication" and "Collaboration" (especially interpersonal skills) necessary for almost all professional positions to better work within interdisciplinary teams and to solve various and versatile work demands. This is also related to a good command of the Czech and English language and other foreign language skills. The manager of customer service in the biggest Czech bank emphasized the importance of communication skills: *"For the position of specialists of the Call Centre, we seek for candidates with excellent communication in Czech and English language, especially negotiation and active listening skills and empathy are crucial. In this world, there are many university' graduated candidates, who are able to produce excellent monologues (presentation) but they are really low in a dialogue. They lack interaction skills."*

One manager answered to question what they are missing the most when hiring candidates: *"I would say communication and cooperation skills are the most crucial. However, of course, it depends on what position we organise the recruitment for. People are used to act individually, especially the millennials. They do not want to bear the consequences of their decisions, taking responsibility for their own decision is problematic for them."*

Another questioned manager shares this opinion: *"When dealing with junior staff it is necessary to train them how to operate in an environment of freedom and responsibility – they need to be trained in time management, self-management and self-development, so the self-direction cluster is the most important for us. Newly hired employees usually learn it during work. It is related to the growth mind-set, if the staff enjoys the job, s/he can be successful and work well.*

Another one explained: *"I cannot tell that there would be one concrete characteristic or competence which we would miss among almost all candidates. Maybe I miss, especially among staff under 35 years old, stress resistant persons for both positions (specialist and supervisors) most often, and I also miss the art of dealing with people in a polite way and empathy among young supervisors. Therefore again, we are going back to the communication and collaboration skills."*

Manager shared similar views in a marketing company, she briefly summarized the lack of skills with the statement: *"It is not easy to find candidates with skills of independence, proactivity and taking responsibility for own work (not expecting someone to lead me).*

Another HR manager explained how the package of transferable competencies are essential nowadays to be successful at work: "*Current life is bringing new demands on people and employees, everything is faster, there is too much stress around us. Nowadays there is an IT and knowledge society, information sharing is the most important for all of us. The young staff prefers to work from home and the work-free-time balance is very important for them.*

Another interviewed Czech HR manager listed examples of self-direction skills: *"Skills that allow a person to be successful at this time, the ability to learn new things, critical thinking, to learn to recognize what is right and objective."*

Overall "Ability to learn" is considered more important than actual knowledge for most of the managers when hiring candidates for the majority of positions. "*Alpha and omega for us is the ability to learn, we do not need passive employees. Suitable method to identify such characteristics among candidates is a behavioural interview, especially the question whether he/she did school projects works very well.*"

Finally, the managers have to be able to work with people to lead and motivate them in an appropriate way: "*For the position of supervisor of the Call Centre, we organise assessment centres to select appropriate candidates. We really need people who are able to lead a team, people disposed with natural authority but also empathy, managers who are able to delegate activities and duties to their team members and who dispose with a know-how how to motivate people and inspire others.*"

Personality Traits and Vocational Identity

The HR managers consider personal traits of graduates to be essential in business life. Behaviour, acting, feeling and thought patterns are equally important as skills. Some personality traits have become crucial, but it differs in association with their company environment. The working environment of a goal-oriented corporate company is different from the work atmosphere in an ICT or a marketing firm. All managers in the Czech research sample used a behavioural interviews to find out personal characteristics of the graduates. This proves answer of the HR manager of logistic corporate company: "*Depending on the position, the recruiting process includes either a personal interview or attending AC especially in terms of manager position. During the job interview, we use the STAR (situation-task-action-result) method, e.g., question: Can you describe the situation in which you had to decide quickly?*"

The same manager also explained that her company top management works much more with "an attitude" than "competency clusters": "*We have four pillars - work-speed, passion and can-do-attitude, right at the first time in our company vision. We are still looking for a customer-focused team player because we are a corporate company and our manager has to communicate with a large number of clients.*"

Personality traits and vocational identity may differ company by company; however, managers usually expect the following critical and self-direction characteristics summarized by one of the interviewed managers: "*We need people who are very adaptable, flexible, versatile (the company is growing very fast, the nature of the projects, their size and clients are always changing), our staff have to dispose with internal focus of control, self-management, own engine... Our managers have to be able to solve problems quickly, to share know-how help and give advice. Individualists will not last for a long time in our company. A lot of business-oriented people have to think not only about the job, but also about the impact of work on the clients.*"

The results of descriptive analysis

One of the questionnaire items was a closed scaling question, in which the participants rated from 1 to 10 the importance of seven chosen competencies. Table 5 shows the HR managers' ratings of 21st century skills. The interviewed managers consider the two skills of newly hired managerial staff as the most important – "Collaboration" and "Communication".

Table 3

Managers' ratings of 21st century skills in terms of their importance for recruitment

List of 21st Century Skills	Manager 1	Manager 2	Manager 3	Manager 4	Manager 5	Manager 6	Mean	Standard deviation	Order of importance
Critical Thinking	9	10	9	9	8	8	**8.83**	0.687	3
Collaboration	10	10	10	10	10	10	**10.00**	0.000	1
Communication	10	10	9	8	10	10	**9.50**	0.764	2
Creativity & Innovation	9	5	5	10	7	8	**7.33**	1.886	6
Self-Direction	8	9	7	10	9	9	**8.67**	0.943	4
Making Global and Local Connections	9	8	8	5	8	4	**7.00**	1.826	7
Using Technology as a Tool for Learning	7	9	10	9	7	5	**7.83**	1.675	5

The "Collaboration" achieved the highest mean score (10 out of 10) in the research. All Czech questioned HR managers from different sectors viewed that collaboration is completely crucial when recruiting an employee because of heterogeneous work-teams, the employees have to be able to work together on a common task. HR managers use behavioural or competency-based interviews to diagnose such competencies in candidates' CV, but also conduct interviews with their ex-work superiors who are listed in the references in the CV. For the critical and leading positions, they also apply assessment centres and psychological tests.

"Collaboration" means for corporate companies an absolute crucial skill because of the necessity to work with different types of people across the company to know who to ask for advice or consultation, it summarises one interviewed manager. *"All the results are presented as results of the whole team, and on the other hand all the team members are responsible for a failure."*

Even in consulting company, the HR manager confirmed collaboration as the key competence because none project is done by one person. *"We must engage different positions of different specializations, because there is a demand for a lot of knowledge that one person does not have and thus, we need to work together"*.

Another questioned HR manager confirmed this by this statement: *"The organization structure is flat. All team members communicate and cooperate with each other. As in any business, it may happen that interests are different, and collaboration is essential to us"*. Another manager explained: *"Collaboration is the most important skill, the Czech Republic is too small country, there are not so many opportunities, the Czechs are full of rivalry, they are afraid of sharing own portfolio on know-how. However, keeping own know-how of some employees is a really big thread for the company."*

"Communication" skills are really connected with collaboration competencies and represent other essential skills that questioned Czech HR managers rated with 9,5 out of 10. All managers consider this skill very important. Interpersonal skills such as communication and collaboration are necessary for good functioning of teams, departments and all company. According to one manager *"working with people always need skills such as empathy, interactivity, good listening skills and negotiation skills"*. "Communication" is usually one of the categories of competence model and it is important for sharing information and ideas. One manager stated the importance of communication: *"Being able to express ideas quickly, to perceive others accurately and give feedback is essential for us. Each manager undergoes communication training and then trains his/her team members. There are face-to-face evaluation meetings where the supervisor discovers the expectations and problems of the subordinates. The team leader evaluates together with the subordinate what s/he has done wrong, he/she makes communication analysis."*

Thus, "Communication" is important for all roles and positions for achieving agreements within a team, for preventing conflict, for being able to enforce concrete idea and present a project goals and results. According to one manager, communication is especially important for those *"that are in contact with clients, those supervisors have to dispose with perfect presentation skills, ability to explain the idea and strategy and ability to communicate continuously when the client knows nothing. Communication is a significant tool for building relationships with a client or a partner institution."*

One manager also expressed that personal communication is more important than written one with the following statement: *"It is nice that we do not handle everything by e-mails, but in personal contact. We have been growing a lot, so we need to communicate well."* One manager stated: *"I do not like to categorize the 21st skills into separate categories, I think that they are linked to each other, they overlap together, strong blending is, for example, between communication and collaboration. In the knowledge society, the ability of effective information exchange is much more important."*

"Critical Thinking" and "Self-Direction" are considered as other important skills as well related to nowadays demands to make quick and high-quality decisions and orientate in the amount of information, effectively manage own work, time, stress, motivation and, last but not least, self-education. The respondents clearly showed different views on the following skills: "Using Technology as a Tool for Learning", "Creativity and Innovation" and "Making Global and Local Connections". Those skills are required for some of the positions and/or in some businesses, however other managers pay less attention to those abilities while recruiting.

After all, the most positive finding of the research is that the HR managers perceive candidates quite well prepared with general knowledge and some skills. However, Czech HR managers feel the biggest lack of self-direction skills to better handle freedom, autonomy and responsibility.

Two interviewed HR managers recommended that universities should be more closely connected with practice in private companies from the beginning of their studies. One of the HR managers stated: "*I recommend that students should take longer internships in companies than acquiring soft skills in concretes subjects at the secondary school or university. We recommend choosing more practically based topics of bachelor or master theses. The problem is that companies do not want to share and spend time with a student and train him/her during practice. It works at colleges that are found by a particular company for their need to attract many specialists in the field, such as Unicorn College or Skoda Car Company.*"

Nevertheless, two other managers expressed that they can teach new employees to most of the knowledge related to the positions and expertise, but they are missing mostly transferable competencies. One of them mentioned: "*What a candidate does not get in the family, it is so hard to catch up later*". According to the other manager they are able to teach new candidates all knowledge if they feel motivated and are willing to learn. However, the most important is great fit into company culture. This opinion represents saying of the manager of the Czech biggest bank: "*The role of university which produces graduates – our employees is essential. Offering some extra courses can bring benefits to their soft skills but I think the school environment is more important than the methodology. If the school offers a creative, a cooperative and pleasant environment, the students are happy at school and they are more open minded to be innovative, creative and so on. If the academic staff encourage them to work in team, they share information and views, so later they will be great employees, they will not hide information, they will share their own tips, ideas, experience and guidelines with other staff, they will be team players. The university environment is alpha and omega of success and popularity of staff!*"

Recommendation

Regarding the transformation of educational paradigm, all questioned HR managers share the opinion that there is not necessary to implement new curriculum to achieve the better preparedness of university students for the job market. All of them recommended using didactic methods in appropriate lessons to train students' soft skills more often than in previous academic years. During the seminars, workshops or trainings at higher education institutions students take part in practical exercises with the help of a variety teaching methods to develop their competencies. As a good example can be problem solving methods such as heuristic interview or six thinking huts by E. de Bono (1985), role-play methods by J.L. Moreno (1942), synectics (creative method) or cooperative learning or project education.

T. Sinkus speaks about a variety of methods used in teaching English language at the Latvia University of Life Sciences and Technologies, which help students to strengthen their collaboration skills and critical and creative thinking: "To achieve better results in collaborative problem solving students should develop social skills, flexibility and empathy, an ability to compromise, work respectfully with others to make decisions considering the needs of the whole group and considering the views of all group members, an ability to accept different roles, and share responsibility for the created common product" (Sinkus, 2020, 144). "The teacher formed small groups of 4-5 people to avoid student non-participation. By assessing students both individually and as a group the teacher ensured individual accountability of the group members. Moreover, the students had to evaluate their own participation as well as that of their peers. Assigning meaningful roles such as a manager, monitor or leader for each case-based task gave students ownership of the case study process and allowed the teacher to assess students based on accomplishing of these roles" (Sinkus, 2020, 146).

Finally, the interviewed HR managers concluded that the better collaboration between universities and private business companies will be a way of strengthening the transferable competencies of students during their study. They emphasised great advantage if students would link their diploma thesis research with a process and situation at some existing company.

There is also important to add that "the continuous process of development of knowledge, intellectual abilities, competencies and practical skills, for example, through informal individual activities

(retraining courses) or informally in the form of self-education from everyday activities (activities at work, leisure time, and so on) cannot be neglected (Nemejc, Smekalova, Kriz, 2019, 103)."

Conclusions

After conducting six semi-structured interviews, the research team was able to divide soft skills into four sub-themes of the competencies – "Knowledge", "Skills", "Personality Traits" and "Vocational Identity". By implementation of the qualitative research at selected HR offices in private companies in the Czech Republic it was possible to map that "Collaboration" and "Communication" are completely crucial competencies in nowadays job market. Without them, none of the companies can perform well. The active listening skills, negotiation, capability of dialogue and empathy were mentioned as examples of communication skills most often. Collaboration competencies such as information sharing, ability to guide others, self-drive, politeness are the characteristics which HR managers lack when dealing with supervisors born after millennia. They also mentioned that time management and stress management skills, ability to learn new things, multicultural skills (because of globalization), critical thinking skills (especially being able to identify wrong opinions in the team of fake news in mass media), team-work skills, flexibility and IT skills are really crucial to be successful managers in the turbulent time of our society."

Universities can strengthen transferable competencies through implementation of needed methods into the curriculum or directly into the educational process. Implementation of the curriculum requires analysis of the study plan in relation to the study programme. According to the field of study programme, specific subjects can be applied, for example: Learning Strategies, Activation Methods, Communication and Presentation Skills, Personal Branding, Project Management or cross-curricular activities such as foreign excursions, adaptation course and outdoor training. Another curricular reinforcement is to update the syllabuses of related subjects by including specific actual topics, e.g., time management or stress management. Implementation directly into the educational process means that teachers will use a battery of activation methods that strengthen independent, critical or creative thinking of the students, gamification, if they create specific worksheets for the seminars, or if they offer actual topics for diploma thesis. Academic staff are also advised to use of a variety of forms of e-learning, e.g., flipped classroom, m-learning with micro-learning applications in existing subjects according to the field of interest.

As a reaction to these recommendations six European universities, which are the partners of the above-mentioned Erasmus+ project, are working on implementing a new one-semester course titled "21st Century Skills". This course will help the university students to strengthen all transferable competencies included in the seven clusters (Table 3) and skills within the four mentioned sub-themes of competencies (Table 1). The curriculum of this new course and its verification during the spring semester 2020/21 can be a suitable topic for an article for the next REEP conference.

Finally, the HR managers and the members of the research team concluded that they see a large chance for strengthening soft skills among university students thanks to actual priority topics such as sustainability, development of transferable competencies and innovations sharing in new calls for educational EU projects within the new programme horizon 2021–2027.

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Self-reflection of University Teachers at the Czech University of Life Sciences Prague

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Abstract: The aim of the paper is to evaluate teachers´ competences and their self-reflection in the teaching process. The topicality of the research presented in the paper is given by the fact that teachers at university level must prove excellent competences regardless external factors which affect the teaching process any time. Competence is the key qualified and professional job performance in any sector. The paper focuses on the competences of university teachers which they acquire and develop throughout their career. Attention is given to professionally and personality cultivating competences, part of which is also self-reflection. Self-reflection refers to a person's ability of introspection and willingness to learn more about own abilities and skills. This will lead to a better ability to identify changes that may be required. The methodology consists in a research based on a questionnaire survey and statistical evaluation of gathered information. The paper gives an outline of the evaluation process at the Czech University of Life Sciences Prague (CZU), during which opinions of students and teachers about instruction were analysed, together with the fulfilment of selected university competences. The main body of the paper is dedicated to the statistical processing of selected data from the evaluation survey conducted by using the SPSS programme. The results indicate that there are significant deviations of teachers´ self-evaluation from the students´ opinion. The Institute of Education and Communication is going to offer courses in advanced competence development using techniques of self-reflection. This has a potential to enhance effectiveness of the teaching process at university level.

Keywords: education, competences, self-reflection, evaluation survey at CZU.

Introduction

In line with the 2016–2020 Strategic Plan of the European Association for Quality Assurance in Higher Education (Standards and Guidelines…, 2020), the E4 group (the European Association for Quality Assurance in Higher Education, the *European University Association*, the European Association of Institutions in Higher Education and the European Students' Union) published a statement on the use of standards and guidelines for quality assurance in the European Education Area (ESG) in the evolving higher-education environment (The ESG in…, 2020). The E4 group highlights that appropriate and flexible use and interpretation of ESG is essential to be able to respond to the evolving higher education environment and support innovation and diversity of higher education and assure its quality.

The key term in the field of education and research activity is competence. Competence refers to an excellent skill or ability. Competence encompasses a complex of knowledge, skills, attitudes and experiences which are target categories for educators under the evolving conditions of the higher education environment. Competence is not limited to cognitive elements (involving the use of theory, concepts or tacit knowledge); it also encompasses functional aspects (including technical skills) as well as interpersonal attributes (e.g., social or organisational skills) and ethical values (Terminology of European…, 2014, 48).

Competences should form a base for a professional standard, which should stimulate key competences for entry into the profession, i.e., competences that are indispensable for a qualified standard performance. A professional standard will meet its purpose provided it is rigorously linked to teacher evaluation and included in the professionalization system for teachers. This should be supported also by universities. This is concluded also by research T. Leibur, K. Saks, I.A. Chounta (2020), or J. Djermanov, N. Grbović and N. Tančić (2020).

A professional standard forms a normative base of the complex of professional competences. Competences are created during a person's career path through both experience and education. On the other hand, a professional standard stipulates basic criteria for quality assessment. Formulation of

a professional standard depends on a strict specification and definition of the individual groups of competences. It is possible and practical to define them using action verbs that describe what the educator has mastered, what they are able to do, can do and know what knowledge they have. In our paper, we use the following classification of competences in seven categories:

- discipline-specific and subject-specific competences;
- didactic and psycho-didactic competences;
- general pedagogical competences;
- diagnostic and intervention competences;
- social, psychosocial and communicative competences;
- managerial and normative competences;
- professionally and personality cultivating competences (Vašutová, 2004, 54).

The concept of teachers' competences at all levels of the educational system and across countries is one of the most common topics in today's educational theory and practice. The process of self-reflection belongs among important questions that have not been sufficiently discussed and studied so far.

Self-reflection comprises mainly professionally and personality cultivating competences. One of the possible ways to define it would be to say it is the ability of self-assessment and assessment of various subjects, and the ability to behave and act based on objective evaluation and assessment.

The notion of self-reflection is fundamental for the development of the quality of education, and educators at any level should be aware of this fact. Educators should make a conscious effort to develop an open, possibly objective and humble relationship to oneself. In case of university teachers, a qualified and well-meaning opinion of students about their work could be a good tool in this process. This is also one of the aims of the process of evaluation.

Self-reflection represents a major component in the professional identity of each profession, in particular so-called helping professions including university teachers. It can be described by the following phrases: I am – I can – I do. The educator's personality (I am) is reflected in their educational activities (I do) in all respects and is part of all their competences (I can) for which they are responsible. It is responsibility that initiates self-reflective behaviour (Smékalová, 2004, 54). In this way, self-reflection is an umbrella under which all educator's competences can be put as it becomes a tool of professional development. Educators should be knowledgeable concerning self-reflective techniques, mental hygiene rules, and be aware of the level of their professional competences. In regard to skills, educators should be able to implement the knowledge into practice and focus on a regular use of introspection and retrospection and their analysis. Motives and attitudes incorporate the understanding of the significance of self-reflection for personal social development in one's job and searching for tools to be used in this development. In other words, there are two aspects of self-reflection competences that are subject to self-reflective activities, always in relation to the educator's personality and experience. This means that self-reflection competences are linked first to the educational environment and its context (i.e., the specific position the educator has in an educational situation) and second to the educational processes (i.e., specific competences of the educator that are indispensable in the educational process).

This is the reason we put special emphasis on the basic condition of self-reflection, which is experience or learning from experience. Recently, the concept of reflective practice has often been mentioned in the context of higher education (Kahn et al., 2008, 161). In case of academic development its advantage is that it can enhance the ability of academicians to act as mentors and develop others (Bell, 2001). Reflective practice thus provides university teachers with the opportunity to perceive the educational reality through supervision (which they provide to their students) and to retrospectively analyse own educational needs. Professional development can be seen as a diverse process in which experience and self-reflection play a significant role for further professional activity (Lice-Zikmane, Grinberga, 2020, 312).

One of the possible ways to perform self-reflection can be shown using three types of self-reflective activities created by J.K. Jay and K.L. Johnson (2002, 77) – i.e., descriptive, comparative and critical reflection. Descriptive reflection involves determining specific aspects that will be in the centre of the educator's reflective attention. During comparative reflection, educators consider the matter from different perspectives and strive to find its meaning. This results in a complex understanding of the teaching context. Critical reflection means the educator assesses different possibilities and alternatives and integrates newly

acquired information with what they already know, which then forms the basis for a formulation of an alternative teaching method. The quality of the teaching process, i.e., the level and application of acquired professional competences, can be perceived using an evaluation questionnaire, see the research data below.

For 14 years now, the Institute of Education and Communication (IEC) has carried out an evaluation research survey in which opinions of students and teachers on the course and conditions of instruction at the CZU are analysed. Authors agree with the opinion of J. Davidova, I. Kokina (2020, 50) that a good university must be aware of its students' expectations to be able to prepare strategic development plans and to create a reasonable and humane system of management of education. The research published by N. Lopez (2019) also examines the role of students as evaluators, among other things, and it also highlights the need to train students in certain skills, including evaluation and reflection. Teachers should show students that they care, they should be creative and help students develop critical thinking. V. Safronova, E. Klyukina (2020) and T. Sinkus (2020) have come to the same conclusions.

The aim of the paper is to evaluate teachers´ competences and their self-reflection in the teaching process selecting appropriate data from the evaluation research survey for the 2018/2019 academic year and using selected statistical tools and methods to evaluate the proposed hypotheses, comment on the results and give suggestions on how to improve the educational process at CZU.

Methodology

A questionnaire survey was used as the main method of data collection. The following types of questionnaires were prepared for the survey:
- a questionnaire for academic workers;
- a questionnaire for students.

The questionnaires included questions on lectures, practical´s and part-time studies and were distributed in Czech and English versions. Only questionnaires concerning lectures were used for the purpose of this paper to ensure data comparability.

A random selection was carried out to evaluate instruction at CZU in the winter and summer semesters of the 2018/2019 academic year. A list of randomly selected teachers was presented to the responsible academic officials at the faculties and the institute for comments. A total of 90 teachers and 1729 students participated in the research survey. Of the total number of questionnaires, 1336 questionnaires concerned the evaluation of lectures; the others concerned practical´s and part-time studies. A total of 40 teachers who give lectures processed the questionnaire for teachers.

A six-level classification scale was chosen to evaluate the submitted items. Level 1 corresponded to the lowest level of evaluation (the lowest satisfaction of the respondent), while level 6 described the highest level of evaluation (the highest satisfaction). In addition, the questionnaires for academicians also included a "no evaluation" option for all items. This option was not included in the statistical calculations. All questionnaires included a section where students and teachers could freely comment on both the evaluated subject and the work of the teacher, the activities of students or the conditions for instruction.

To find out how developed the professionally and personality cultivating competence, which, among other things, underlines the ability of self-reflection based on self-assessment and assessment by different subjects, is in teachers, "pair items" in the students' and teachers' questionnaires were used. Five questions were selected that concerned the following areas:
- question 1: Comprehensibility of teacher's lectures;
- question 2: Teacher's ability to incite interest and motivate students;
- question 3: Teacher's willingness to allow students to express their opinion;
- question 4: Teacher's ability to create a positive and friendly atmosphere;
- question 5: Teacher's ability to connect instruction and practice.

The teacher´s sample was re-coded as "P", the student´s sample was re-coded as "S". In case of teachers' responses, the scale also included the scale value "no evaluation", which was re-coded as -1 for statistical processing so that the programme would treat it as Missing Value and would not assess it. Students were not given this option.

If the value of the difference between the opinion of the student (S) and of the teacher (P) when compared is positive, this means that the students assess the phenomenon more favourably than the teachers, and vice versa. From the educational point of view, if the answers have a deviation of more than −0.50, then this can be seen as significant to risky teacher optimism; if answers have a deviation of +0.50 and higher, then this can be seen as a certain caution or even too much pessimism in the way teachers evaluate themselves.

A two-sample (unpaired) t-test for two samples was used in the statistical processing; this test was performed after an F-test for detecting the agreement of variances in two samples was conducted.

Results and Discussion

The following hypothesis was designed:
- H1 – Teachers assess themselves more positively than they are assessed by students in their answers that concern their lectures. (Teachers believe that the instruction has all attributes as it should, that they use all their competences to a sufficient extent. The reason could be a sufficient level of teacher optimism or uncritical overevaluation of oneself.)

Two-sample (unpaired) t-test

A two-sample (unpaired) t-test was conducted after an F-test for detecting the agreement of variances in two samples was performed. Initial conditions for variances:
- H_0: $\sigma_1 = \sigma_2$ (the two samples have similar variance (equal));
- H_1: $\sigma_1 \neq \sigma_2$ (variances in the two samples differ);
- selected level of significance: $\alpha = 0.05$.

Initial conditions for H1
- H_0: $\mu_1 = \mu_2$ (there is no difference between opinions of teachers and students, teachers did not evaluate themselves better than they were evaluated by students, i.e., the expected values are equal));
- H_1: $\mu_1 \neq \mu_2$ (there is a difference between opinions of teachers and students in the two samples, the expected values are not equal) – a two-sided alternative;
- selected level of significance: $\alpha = 0.05$.

Table 1 shows:
- It is immediately clear that in four questions out of five teachers evaluate themselves better than students evaluate them. This statement must be verified by statistical testing.

Table 1

Comparison of teachers and students' answers

Questions		Item	CZU
Question 1	P	My lectures are comprehensible	5.00
	S	Teacher's lectures are comprehensible	4.84
		Difference in question 1	0.16
Question 2	P	My lectures are inspirational and motivating	4.69
	S	Teacher has the ability to interest and motivate	4.39
		Difference in question 2	0.3
Question 3	P	I create enough space for discussion and for students to express opinions	4.92
	S	Teacher encourages students to express opinions	4.99
		Difference in question 3	-0.07
Question 4	P	I manage to create a positive and friendly atmosphere of cooperation with students	4.89
	S	Teacher is able to create a positive and friendly atmosphere	4.72
		Difference in question 4	0.1
Question 5	P	In this course, I connect instruction and practice	4.85
	S	Connection between instruction and practice	3.79
		Difference in question 5	1.06

Table 2 shows:
- means show us that for questions 1, 2 and 4, a difference exists between teachers' and students' opinions, for question 3 the difference is insignificant and for question 5 the difference is more pronounced in favour of teachers, who evaluate themselves much better;
- standard deviation (Std. Deviation) according to individual questions:
  - in question 1 (Comprehensibility of lectures) 0.484,
  - in question 2 (Interesting lectures and ability to motivate) 0.726,
  - in question 3 (Ability to actively create enough space for discussion) the lowest – 0.042,
  - in question 4 (Ability to create a positive and friendly atmosphere) 0.413
  - in question 5 (Connection between instruction and practice) 0.154.

Table 2

Table of t-test results – overall characteristics of answers to all 5 questions

Questions		N	Mean	Std. Deviation	Std. Error Mean
Question 1	P	37	5.00	0.707	0.116
	S	1311	4.84	1.191	0.033
Question 2	P	36	4.69	0.668	0.111
	S	1328	4.39	1.394	0.038
Question 3	P	39	4.92	1.178	0.189
	S	1329	4.99	1.136	0.031
Question 4	P	38	4.89	0.924	0.150
	S	1329	4.72	1.337	0.037
Question 5	P	40	4.85	1.272	0.201
	S	1328	3.79	1.426	0.039

Further calculations will show whether the differences are statistically significant.

Table 3

Table of results of a two-sample t-test, F-test and a two-sample t-test

Questions	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Question 1									
Equal variances assumed	14.807	0.000	0.798	1346	0.425	0.157	0.197	-0.229	0.543
Equal variances not assumed			1.301	41.993	.200	0.157	0.121	-0.087	0.401
Question 2									
Equal variances assumed	21.639	0.000	1.293	1362	0.196	0.301	0.233	-0.156	0.759
Equal variances not assumed			2.558	43.724	0.014	0.301	0.118	0.064	0.539
Question 3									
Equal variances assumed	.838	0.360	-0.384	1366	0.701	-0.071	0.185	-0.433	0.292
Equal variances not assumed			-0.371	40.100	0.713	-0.071	0.191	-0.457	0.316
Question 4									
Equal variances assumed	8.399	0.004	0.789	1365	0.430	0.172	0.218	-0.256	0.601
Equal variances not assumed			1.117	41.561	0.270	0.172	0.154	-0.139	0.484
Question 5									
Equal variances assumed	2.460	0.117	4.640	1366	0.000	1.059	0.228	0.611	1.506
Equal variances not assumed			5.167	42.006	0.000	1.059	0.205	0.645	1.472

Table 3 shows:
- for questions 1, 2 and 4, the F-test confirmed sample variance between teachers and students. We reject H_0 that the two samples have the same variance, and we use the data from line 2, where SPSS processed values in a two-sample t-test with different variances.
- for questions 3 and 5, we do not reject the null hypothesis H_0 assuming equal variances using the F-test and continue to work with the first line in the Table.

For individual questions we can say that:
- for question 1, the calculated Significance value is $0.200 > 0.05$, no statistically significant difference exists between teachers' and students' opinions, we do not reject H_0 – students and teachers reply in agreement;
- for question 2, the calculated Significance value is $0.014 < 0.05$, a statistically significant difference exists between teachers' and students' opinions, we reject H_0 and accept alternative hypothesis H_1 – teachers evaluate themselves better;
- for question 3, the calculated Significance value is $0.701 > 0.05$, no statistically significant difference exists between teachers' and students' opinions, we do not reject H_0 – students' and teachers' answers are the same;
- for question 4, the calculated Significance value is $0.270 > 0.05$, no statistically significant difference exists between teachers' and students' opinions, we do not reject H_0 – students and teachers reply in agreement;
- for question 5, the calculated Significance value is $0.000 < 0.05$, a statistically significant difference exists between teachers' and students' opinions, we reject H_0 and accept alternative hypothesis H_1 – teachers evaluate themselves differently than how they are evaluated by students (better).

Conclusions

When we evaluated differences in four out of five questions teachers evaluated themselves better than how they were evaluated by students. After having verified hypothesis H1 we can say that the hypothesis was not confirmed by the t-test in three out of five questions. For questions 1 (Comprehensibility of lectures), 3 (Ability to actively create enough space for discussion) and 4 (Ability to create a positive and friendly atmosphere), a statistically significant difference at a significance level of $\alpha = 0.05$ was not confirmed and we can say that the answers of teachers and students do not differ. For questions 2 (Interesting lectures and ability to motivate) and 5 (Connection between instruction and practice) the answers of teachers and students are statistically significantly different at a significance level of $\alpha = 0.05$, teachers evaluate themselves better.

Every teacher should make sure on a regular basis that their lectures and practicals are comprehensible, and they should develop their professionally and personality cultivating competences. At the same time, a continuous evaluation of teachers' work should be carried out by students. Regular evaluation of instruction helps maintain the quality of university education. Teachers whose self-evaluation differs significantly from that of their student´s should frequently and regularly use self-reflective techniques so that their self-evaluation matches objective reality.

Students who have participated in the questionnaire survey should be ensured that their opinions are taken seriously by the university and that they are an important initiator of change.

Universities together with the Ministry of Education, Youth and Sports should help and support teachers to understand the requirements set in professional standards.

The development of university teachers' competences must reflect current educational trends, legislative initiatives and legislative regulations. The pressing nature of this issue is enhanced by the growing competition and also by the growing possibilities for educational institutions in the EU to cooperate. The interest in instruction and curriculum, the educational process on the part of both teachers and students will strengthen the teachers' professional identity and will bring them higher occupational prestige. Opinions of students and teachers, their comparison and detected connections between the causes of the established state will facilitate the search for a path leading to a higher efficiency of the educational process (not only) at universities.

Based on the surveys among students and teachers concerning their opinions on the educational process that have been carried out so far, IEC plans to continue to offer evaluation of instruction at CZU, as well as provide courses in competences development to interested teachers.

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Development of Teachers' Digital Competence: Problems and Solutions in Latvia

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Abstract: The data obtained from the Latvian National research programme "Life with COVID-19: Evaluation of the coming coronavirus crisis in Latvia and recommendations for social resilience in the future (CoLife)" show that the successful implementation of remote learning requires the improvement of teachers' digital competence. The professional development courses organized before the COVID-19 pandemic (their content, form) do not meet the needs of the real situation. It is necessary to look for new forms so that the content of professional development courses meets the needs of current general education teachers, including not only general skills characterizing digital competence, but also specific ones related to the level of education (age of learners) and field of study. The aim of the research: to identify the needs of general education teachers for the development of digital competence and to prepare proposals for the implementers of professional competence development courses. Research methods: online survey of 559 teachers, survey of 6 experts, quantitative data processing in SPSS program, content analysis of qualitative data. The research concluded that teachers' professional competence development courses should be practice-oriented, as close as possible to the technical capabilities of an educational institution, as well as considering the current needs of teachers, the field of subjects taught and the level of education at which they work.

Keywords: digital competence, Pedagogical Digital Competence, teachers' needs, professional development.

Introduction

In 2020, a technological revolution occurred in Latvia's education: if the positive and negative impact of technology on pupils' development was discussed previously, then due to the Covid-19 pandemic, all educational institutions switched to remote learning (RL) within a week. In Latvia, as in other countries, such a rapid transformation is associated with various obstacles and challenges. It is not just the Internet speed and availability of technology. The readiness of a teacher to implement the remote learning process is important. Research (Crawford et al., 2020) on higher education state that many teachers initially focused on content transfer online rather than online pedagogy. The same happened in general education. Teachers at all levels of education need to use information and communication technologies to implement meaningful self-directed learning. Digital competence became an integral part of general education's teaching and learning processes, and the professional development of teachers, which is considered "structured professional learning that results in changes to teacher knowledge and practice, and improvements in student learning outcomes" (Darling-Hammond, Hyler, Gardner, 2017, 2), became more relevant than ever. At all levels (individual, educational institutions, local governments and state), the main emphasis was placed on the improvement of teachers' digital competence, meaning technical skills in the use of various learning platforms and digital tools. However, this is not enough. Teachers' digital competence must be seen from a didactic pedagogical perspective in the context of education. The use of diverse ICT-based learning strategies for curriculum development and learning requires new knowledge from teachers about technologies, methods and learning processes (Cabero-Almenara et al., 2020). Issues on Technological Pedagogical Content Knowledge (TPACK model) become relevant, when technological knowledge, pedagogical knowledge and content knowledge are synergized (Mishra, Koehler, 2006; Hew et al., 2019). The term "Pedagogical Digital Competence" is also used in the literature, which is defined as "the ability to consistently apply the attitudes, knowledge and skills required to plan and conduct, and to evaluate and revise on an ongoing basis, ICT-supported teaching, based on theory, current research and proven experience with a view to supporting students' learning in the best possible way" (From, 2017, 48). We see that digital competence is only one, but an extremely important element of pedagogical digital competence, and qualitative implementation of RL is not possible without the improvement of this competence.

The aim of the research: to identify the needs of general education teachers for the development of digital competence and to prepare proposals for the implementers of professional competence development courses.

Methodology

A questionnaire was developed to identify the needs of general education teachers. Respondents were asked to rate 27 statements that characterize their digital competence in organizing RL. Each statement had to be assessed in 2 aspects: existence of the mentioned skill (to what extent the skill is present, where 1 – the skill does not exist; 2 – poorly developed; 3 – average development; 4 – the skill at a high level) and necessity (how often the skill is needed to provide RL, where 1 – definitely not needed, 2 – rather no than yes, 3 – rather yes than no, 4 – definitely needed). The statements were grouped and formed the following criteria: *Information Processing Skills*, *Communication*, *Curriculum Development*, *Security* and *Problem-Solving Skills*. The questionnaire also included open-ended questions on recommendations at the level of national policy, school management, each class and teachers.

The survey was conducted online from August 25 to September 15, 2020; respondents answered questions anonymously. Using Raosoft calculation, it was determined that the set of respondents exceeds the minimum recommended size. In turn, the Cronbach's alpha coefficient ($\alpha =.955$) indicates good internal coherence of the questionnaire and stability of measurements over time.

The teachers (559) from all regions of Latvia participated in the survey: Riga – 17 %, Kurzeme – 11.4 %, Vidzeme – 32.2 %, Zemgale – 6.3 %, Latgale – 30.1 %. Respondents are of different ages: 3.8 % of respondents under 25 years of age, 13.8 % of respondents between 26 and 35 years of age, 21.8 % of respondents from 36 to 45 years of age, 36 % of respondents from 46 to 55 years of age, but 24.6 % of respondents are older than 55 years. 14.7 % of respondents work in pre-school education level, 3.5 % of respondents work in primary education stage I (Forms 1-6), 24.2 % of respondents work in primary education stage II (Forms 7-9) and 26.7 % of respondents work in secondary school. 64.8 % of respondents have their main job in schools located in regional cities, 18.2 % of respondents work in rural schools, the rest - in Riga.

As the online survey occurred in a short period of time, which coincided with the beginning of the school year and the introduction of the competency approach in general education, we assume that the most active teachers and those who are "in good relations" with the Internet took part in the survey. Therefore, there is a possibility that the results of the survey of all Latvian teachers could show lower results. Research highlights trends; in addition to online surveying, it is necessary to use other data acquisition tools for a more detailed understanding of the situation.

Results and Discussion

The analysis of the results compared the aspects of digital competence from the perspective of existence and necessity. Figure 1 shows that in terms of *Information Processing Skills*, respondents believe that their skills are at a higher level than necessary for the implementation of RL.
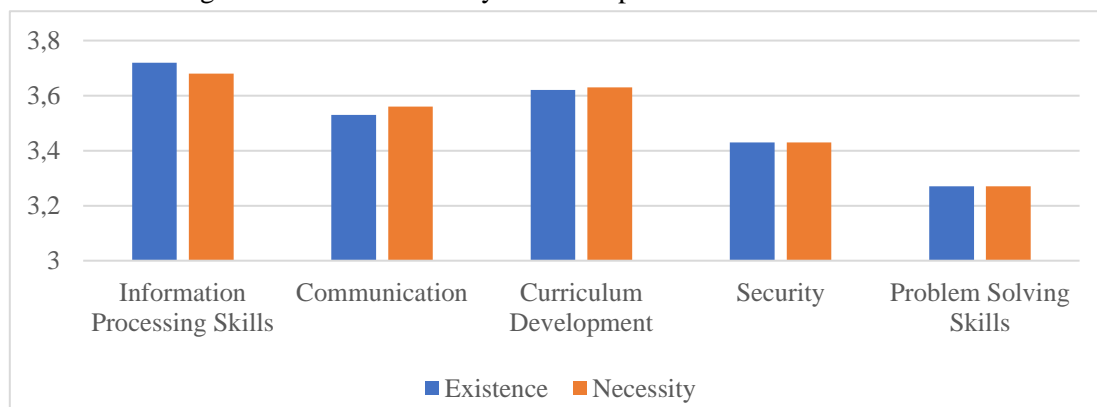

Figure 1. Comparison of existence and necessity of digital competence.

However, in terms of *Security* and *Problem-Solving Skills*, respondents consider that the existing competence meets the required level, although it must be acknowledged that respondents misunderstand

the importance of security and problem-solving issues, because a detailed analysis of the survey's results shows that the self-assessment of several safety-related skills is the lowest (the average assessment is in the range from *Rather yes than no* to *Rather no than yes*). Responding to the open-ended questions, respondents express the opinion that the support of a qualified IT specialist is important in these questions. In terms of *Communication* and *Curriculum Development*, respondents believe that more skills are needed than they currently have.

The results showed statistically significant differences depending on the age of respondents, region, location of the educational institution (Riga, other city, countryside) and the level of education at which respondents work (Table 1).

Table 1

Statistically significant differences in the assessments of digital competence criteria

Criterion	Statistically significant differences (p) depending on							
	age of respondents		region		location		level of education at which respondents work	
	E	N	E	N	E	N	E	N
Information Processing Skills	0.000	0.000	-	-	-	-	-	-
Communication	0.000	0.000	-	-	-	-	-	-
Curriculum Development	0.000	0.000	0.005	-	0.004	-	0.004	-
Security	0.000	0.000	0.034	-	0.022	-	0.003	-
Problem-Solving Skills	0.000	0.000	-	-	-	-	-	-

N=559
E – assessment of the existing competence
N – assessment of the necessary competence

Depending on the age of respondents, statistically significant differences (p=.000) were found in the evaluations of all criteria: in all cases, the younger respondents have a higher self-assessment, and the self-assessment decreases with age.

Depending on the location of an educational institution, statistically significant differences (p=.027) were found in the assessment of the criterion *Communication*: the highest self-assessment was received from employees of educational institutions in Riga (Mean 3.72), Kurzeme region (Mean 3.58) and Kurzeme cities (Mean 3.60), but the lowest - from employees of educational institutions in Latgale cities (Mean 3.44) and Latgale region (Mean 3.42).

Statistically significant differences were found depending on the region where a school is located:
- in the assessment of the criterion *Communication* (p=.005) the highest assessment was received from employees of educational institutions in Kurzeme region (Mean 3.80) and Riga (Mean 3.81), but the lowest – in Zemgale (Mean 3.66) and Latgale (Mean 3.69);
- in the assessment of the criterion *Curriculum Development* (p=.334) the highest assessment was received from educational institutions' workers in Riga (Mean 3.76) and Kurzeme region (Mean 3.64), but the lowest – in Latgale (Mean 3.54) and Vidzeme (Mean 3.61).

Depending on the location of an educational institution, statistically significant differences were found:
- in the assessment of the criterion *Communication* (p=.004) the highest assessment was received from employees of Riga educational institutions (Mean 3.72), followed by employees of rural educational institutions (Mean 3.52) and employees of educational institutions of regional cities (Mean 3.49);
- in the assessment of the criterion *Curriculum Development* (p=.222) the highest assessment was received from employees of Riga educational institutions (Mean 3.76), followed by employees of rural educational institutions (Mean 3.63) and employees of educational institutions of regional cities (Mean 3.59).

As the level of education at which respondents work is an important factor in research, the self-assessments of various aspects of digital competence depending on the level of education were

examined in more detail (Figure 2). As a result, it can be concluded that teachers working at a higher level of education have a higher self-assessment of digital competence than teachers working with learners at a lower level of education daily.
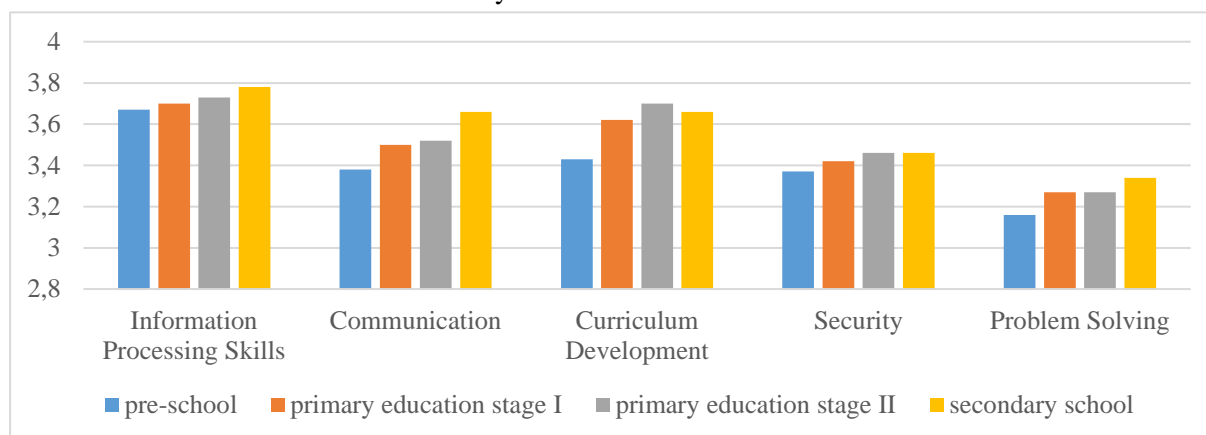

Figure 2. Self-assessment of digital competence aspects depending on the level of education in which respondents work.

Depending on the level of education at which respondents work, statistically significant differences were found in the assessment of the criteria *Communication* (p=.004) and *Curriculum Development* (p=.018): there is a tendency for the assessment to increase if a respondent works at a higher level of education. It should be recognized that the low level of digital competence of pre-school teachers has also been found in other researches (Creer, 2018; Romero-Tena et al., 2020), which indicate that relatively little use of ICT in pre-school education is explained not so much by the lack of technology, but by the insufficient digital competence of teachers to use ICT in professional career, as well as by insufficient methodological competence to integrate ICT in the process of teaching and learning.

Regardless of the age of learners with whom a teacher works, the question is important - how to organize teachers' digital competence development courses to make the remote learning process more successful, as 57.8 % of respondents indicated in the survey that RL was of lower quality. How to change it? In the open-ended questions, respondents see opportunities at several levels:

- **at the individual level**, understood as a change of personal thinking and attitude, openness to cooperation, development of various skills (digital, time management, self-organization, communication and mutual trust), responsibility and self-reflection;
- **at the level of the educational institution**, when a clear operational strategy is developed, the digital tools to be used are defined, providing security and support measures, precise criteria for learning the content in RL are developed, communication and cooperation is ensured and further education is supported;
- **at the municipal level**, support is provided in the development and implementation of strategies, plans and internal regulatory documents, in the availability of highly qualified IT, social and psychological support, in the development of professional competence in accordance with specific needs in places;
- **at the national level**, a common platform for open access digital and interactive learning resources is set up, guidelines are being developed to define the mandate and responsibilities of the parties involved and various types of support (financial, social, psychological, methodological, educational) are provided.

Teachers emphasized the individual level, where the attitude towards remote learning, which became an everyday part of education due to the Covid-19 pandemic, is important. Attitude is a significant factor for the quality use of technology in the educational process, as it indicates the acceptance of technology and the intention to use it meaningfully for the implementation of a quality teaching process (Blume, 2020; Seufert, Guggemos, Sailer, 2021; Scherer, Teo, 2019).

The results of research show that the aspect of teachers' professional development is included at all levels, where the improvement of digital competence comes to the fore. Many respondents emphasize

that pre-Covid-19 digital competence development courses have often been inconsistent with the situation teachers encountered during RL. Teachers' vision of the aspects of course organization is shown in Figure 3.

HOW TO BETTER ORGANIZE THE DEVELOPMENT OF TEACHERS' DIGITAL COMPETENCE?

- On-site training, taking into account the technical capabilities of an educational institution and the needs of teachers
- The content of professional development courses corresponds to the current level of digital skills and professional needs of teachers (the age of learners)
- The acquisition of the content of individual digital competence development courses should be organized together for all involved parties (parents of younger pupils, pupils, teachers)
- Compliance of implementers of digital competence development courses

Figure 3. Development of digital competence according to the needs of teachers.

The first two proposals of teachers for successful course organization resonate with findings in the literature (Darling-Hammond, Hyler, Gardner, 2017; Hwang, Hong, Hao, 2018; Kong, Lai, Sun, 2020; Sentence, Csizmadia, 2017), when emphasizing several factors that increase the quality of teachers' development courses: 1) development is focused on practical classes and occurs over a longer period of time, when there are breaks to apply the acquired skills in practice. Campaigning or individual workshops do not produce the desired results; 2) teachers' further education is linked to the school context, so it is important to organize courses in groups, whose participants are in a similar situation on a daily basis and can discuss common problems they face in practice, seek solutions together and support each other in teaching and learning; 3) it is not enough to acquire specific technologies; the development of digital competence should be related to the acquisition of the field's content and didactics.

In relation to the compliance of providers of digital competence development courses, it is important to what extent the course organizers and managers understand the needs of teachers for the successful implementation of RL. If teachers feel understood, they will better accept the new reality and support and more successfully integrate the knowledge gained in the courses into their daily work (Sokal, Babb, Trudel, 2020).

The traditional triangle of interaction between learner – educator – learning content (regardless of the level of education) has not been abolished by anyone; therefore, it is important to place an emphasis not only on the aspect of acquiring technical digital skills, but also on how to organize the learning process in a more qualitative way (with more appropriate methods) according to the age of learners. Professional development courses need to develop not just digital competence, but pedagogical digital competence that refers to the use of pedagogical digital technologies to achieve goals related to the development of pupils' knowledge and understanding (List, Brante, Klee, 2020; Chien, Wu, 2020), when 3 aspects are important: 1) knowledge related to the various available technologies, their characteristics and interest in them; 2) the main theories and concepts of the specific field of study (for example, natural sciences, mathematics, language), the nature of knowledge and the means of research in the field; 3) knowledge of learning theories, i.e. learning processes and readiness to support and manage the learning situation and learning process. This means changing the requirements for course implementers: they need not only technological knowledge, but also an understanding of RL didactics and the peculiarities of pupils' age. Researches on the development of teachers' digital competence (Dillenbourg, 2013; Seufert, Guggemos, Sonderegger, 2020; Seufert, Guggemos, Sailer, 2021) show that the use of technology in education does not mean reducing the number of teachers but expanding their activities, and there is a risk that today's investment in certain digital skills will become obsolete in a few years' time. Therefore, continuous research is needed on the relevance and effectiveness of the use of different remote learning strategies.

Course implementers must be flexible and keep pace with the latest research to offer teachers to improve their competence in the use of technology to implement a meaningful learning process. Professional development at work could be implemented by mentors - qualified practicing teachers with a positive experience in remote learning and a positive attitude towards technology. The experience of mentors educating and supporting their colleagues has been recognized in research (Seufert, Guggemos, Sailer, 2021; Tseng, Kuo, 2014; Yurtseven Avci, O'Dwyer, Lawson, 2020). Financial and organizational support is needed for its faster implementation in Latvia's educational institutions.

Conclusions

For successful implementation of RL, Latvia's teachers need to improve their pedagogical digital competence. Course implementers should rely on the TPACK model, where technological knowledge, pedagogical knowledge and knowledge of content are acquired in synergy.

Teachers' professional competence development courses should be practice-oriented, as close as possible to the technical possibilities of their educational institutions, as well as considering the current needs of teachers, the field of subjects taught and the level of education at which they work.

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Education for sustainable development

Ecological Attitudes and Their Components about Organic and Conventionally Grown Food: The Case of the Gauja National Park

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Abstract: The 2nd year students of sociology in Faculty of Social Sciences in University of Latvia conducted a study "Attitudes of the residents of the Gauja National Park region towards organic and conventional agriculture" during the spring of 2020, under the supervision of lecturers Renārs Felcis and Jurijs Ņikišins, where ecological attitude index has been made on organic and conventional farming (including 4 statements regarding statements of state action). The aim of the article is to describe the index of ecological attitudes and to identify the latent themes of ecological attitudes about organic and conventional farming to reveal in more detailed hidden similarities of 10 statements about aspects of organic and conventional farming. A type of factor analysis (principal component analysis (further – PCA)) was performed in addition to the descriptive analysis to achieve the aim. In the final analysis, 3 components were proposed, the first of which reflects the ecological habits of purchase, the second – the ecological habits of growing and the third – the individual variables on the importance of the expiration of products. The applicability of the statement scale in future research is suggested for discussion and conclusions.

Keywords: ecological attitudes, organic and conventional food, education for sustainable lifestyle.

Introduction

The article is a continuation of the research "Attitudes of the residents of the Gauja National Park region towards organic and conventional agriculture" conducted by the 2nd year students of sociology in Faculty of Social Sciences in University of Latvia. Research was conducted by students Jānis Žaltkovskis, Lauma Rozentāle, Sandra Tajarova, Diāna Lavska and Monika Varakušina under the supervision of lecturers Renārs Felcis and Jurijs Ņikišins. Research reports will be available publicly.

Previous research demonstrates that the environment and care for the environment, biodiversity and natural resources are highly valued in the consciousness of Latvian society (Felcis, Felcis, 2019, 101). The study examines the attitude of the residents of the Gauja National Park (hereinafter GNP) region towards conventional and organic agriculture, because GNP is a natural value of Latvia, where it is important to preserve the existing biological value.

Capitalist-type production prevents the necessary elements of the soil from returning and regenerating into the soil. Natural conditions are disturbed and the soil is unable to regenerate. In modern agriculture, as in urban industry, productivity and mobility increase, but this is at the expense of waste disposal and labour and soil degradation (Marx, 1976; Foster, 1999; Moore, 2000). K. Marx, drawing attention to several destructive aspects of 19th century agriculture, noted that "(1) capitalism has created an 'irreparable rift' in the 'metabolic interaction' between human beings and the earth, the everlasting nature- imposed conditions of production; (2) this demanded the 'systematic restoration' of that necessary metabolic relation as 'a regulative law of social production'; (3) nevertheless the growth under capitalism of large – scale agriculture and long-distance trade intensifies and extends the metabolic rift" (Marx, 1976, 636-9; 1981, 948-50, 959; Foster, 2010, 108; Foster, York, Clark, 2010, 241). Linking theoretical perspectives with current studies and research done regarding ecological attitudes, there are research regarding ecological approaches on distance education (Katane, Kristovska, Katans, 2014; Iriste, Katane, 2020) that might reflect the importance of ecological knowledge in education for sustainable future. Ecological literacy is necessary for the sustainable future as well. Ecological literacy interpreted as the ability to use ecological understanding, thinking and habits for living in, enjoying, and/or studying the environment (Yıldırım, Hablemitoğlu, 2013).

In line with previous studies regarding consumption of organic or conventional food, study has been used with aim to reveal consumers' point of view of organic products and the factors which are effective in their selection process (Bahşi, Akça, 2019) as well as consumer attitude towards organic food products (Salleh et al., 2010) and knowledge of organic food (Meixner et al., 2014). Numerous studies that compare various

aspects of organic and conventionally produced foods have been written already 15 years ago. Previous studies indicated that consumers are not consistent in their interpretation of what is organic and while consumers typically understand broad issues about organic foods, many tend not to understand the complexities and niceties of organic farming practices and organic food quality attributes (Yiridoe, Bonti-Ankomah, Martin, 2005). Research has revealed that organic consumers share beliefs about positive health effects, environmentally friendly production and better taste of organic food. (Zagata, 2012).

The aims of this article are (1) to describe the index of ecological attitudes and (2) to identify the latent themes of ecological attitudes about organic and conventional farming to reveal more detailed hidden similarities of 10 statements about aspects of organic and conventional farming.

Methodology for ecological attitude research and index

To analyse the attitude of the GNP population towards organic and conventional agriculture, a group of student researchers, based on the theory of metabolic rift and risk society, analysed the attitude of the inhabitants of the Gauja National Park region towards organic and conventional agriculture and developed an ecological attitude index. The study used a mixed research design, where the quantitative survey was conducted electronically during the emergency of COVID-19 using the Internet panel of the market research company RAIT GROUP. Field work occurred from 8 to 14 May 2020. A total of 206 valid responses were received after data cleaning. Several methodological tasks or steps were formulated to reach the aim of this article. First descriptive analysis of various statements regarding organic and conventional farming. Second, to analyse the respondents' general attitude towards agriculture, an ecological attitude index was created. Third and most importantly, a type of factor analysis (principal component analysis or PCA in abbreviation) was performed in addition to the descriptive analysis to achieve the aim.

The questions used for the index were more about organic and conventional farming, but it was decided to call this index the ecological attitude index, because it also included answers from statements about the respondent's actions, opinions and knowledge in policy making. The index included all 14 statements, including 10 statements about organic and conventional farming in the four-point Likert scale from disagree completely to agree completely and 4 statements as proposals in the Likert scale from not supporting at all till supporting completely. Statements are as follows:
1. Organic farming is more environmentally friendly than conventional farming
2. Farmers can control weeds, pests and plant diseases without the use of synthetic fertilizers
3. Organic products are healthier than products grown in conventional agriculture
4. I avoid buying genetically modified food products
5. It is important to me that the food I bought is made in Latvia
6. When I buy food, I am concerned about the synthetic fertilizers used by farmers
7. Animal welfare conditions are important to me when I am buying products of animal origin
8. Synthetic fertilizers cause water pollution
9. Conventional agriculture reduces biodiversity (extinction of animal and plant species)
10. It doesn't usually matter to me that foods have a longer expiration term
11. The state should give more support to organic farms
12. A "polluter pays" principle should be introduced
13. The state should ban the use of synthetic fertilizers
14. The state should improve animal welfare conditions on farms.

The possible index value is from one to four. Respondents with a higher index value are more positive about organic farming, follow a greener lifestyle and are generally more supportive of ecological lifestyles and rules. Respondents with a lower index value – the opposite way.

The index was created for all respondents, however, respondents with more than 7 "hard to say" responses were not included in the analysis of the index. The value of the index is the sum of the values of all statements (excluding "hard to say" answers) divided by the number of valid statements (number of statements in which the respondent did not mark the answer option "hard to say"). A new variable ("dummy") was also created, in which respondents with at least 7 valid statements were assigned a value of one and the others a value of zero. This variable was created to exclude respondents with less than 7 statements from the index analysis.

Ecological attitudes and their components

The components of ecological attitudes are understood as the hidden similarities in 10 statements (out of 14) about aspects of organic and conventional farming. To identify this, a type of factor analysis – principal component analysis (PCA) is used as a method to identify groups or clusters of variables. Its main applications are: (1) Reduction of many variables (10 variables) to a simpler explanation; (2) Measure the indirect (so-called latent) features in this case for 10 statements about organic and conventional farming; (3) The methods used do not differ much from the correlation analysis, in this case, in the correlations of all variables with all, the dimensions in which similar answers is formed are sought.

The analysis and interpretation of latent categories is the main empirical technique of this article to achieve the goal – to reveal hidden similar features, which would allow to create a more nuanced or different scale of statements in the future. Moreover, with this method, we can reduce the data of the variables that make up the ecological attitude index, without losing anything significant from the initial information as much as possible. Sufficient number of respondents, namely, 206 respondents have been reached (according to the theory 10 – 15 respondents for each variable) is enough to be able to apply principal component analysis. PCA in comparison with factor analysis does not require some theoretical ground. PCA is rather based on exploratory analysis.

Results and discussion
Empirical results for ecological attitudes and ecological attitudes index

The data obtained using the ecological attitude index will be presented below. At first, some theses on the attitudes towards organic and conventional farming will be formulated. Most of GNP population in sample agree with claims about water pollution from synthetic fertilizers, often agree that organic farming is more environmentally friendly than conventional farming, and believe that organic products are healthier than products grown in conventional farming. More than half (> 59 %) of the population living in the GNP area also agrees with other statements (Figure 1).
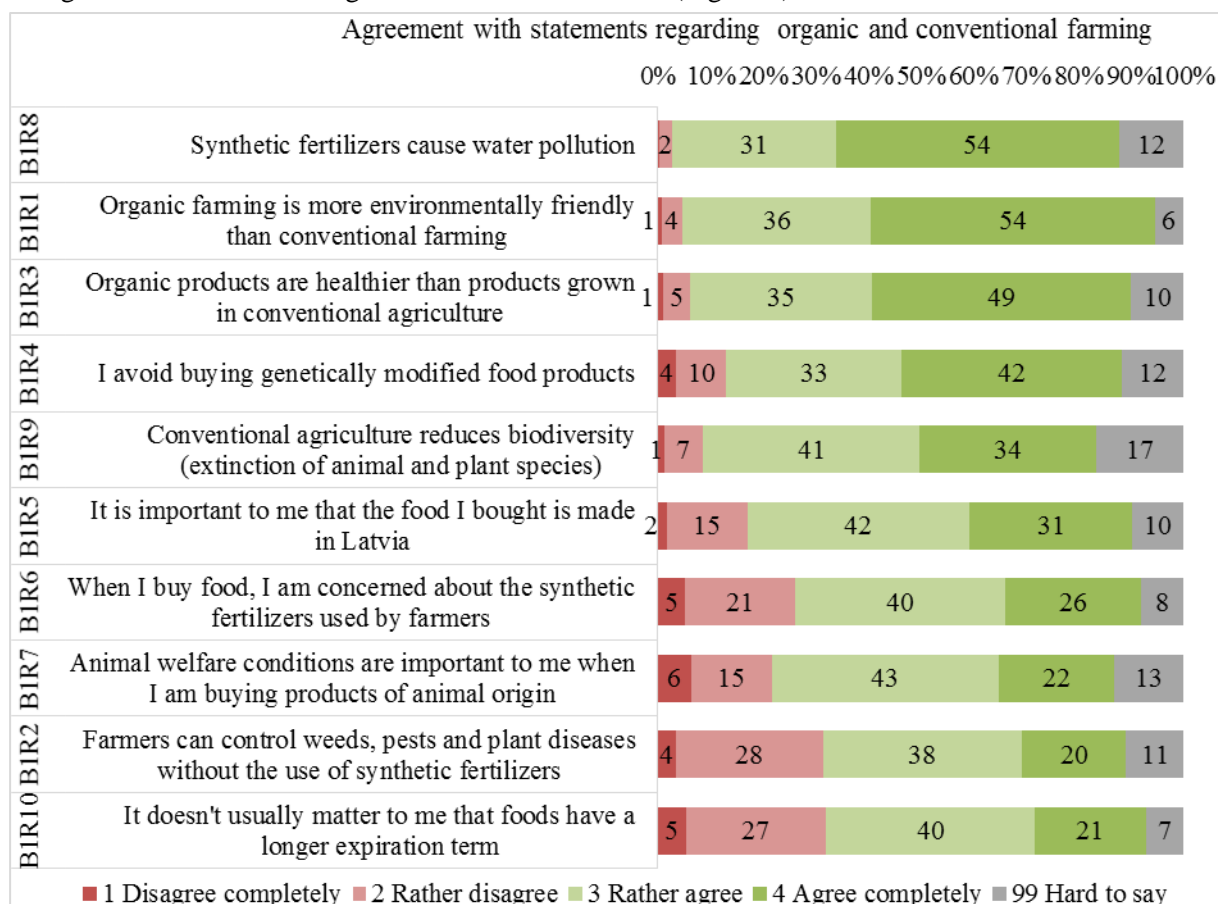

Figure 1. Agreement with statements regarding organic and conventional farming.

Most often for respondents in the range from 1 (completely non-ecological attitude) to 4 (completely ecological attitude) the value of the index is 3 (modal value), which means that respondents have a rather ecological attitude. The midpoint or median indicates the most typical index value of 3.1. A standard deviation of 0.4 indicates that approximately 2/3 of the respondents gave an estimate in the range of 2.7 to 3.6. Measure of skewness (coefficient -0.290) indicates a negative asymmetry. Compared to the normal distribution, the empirical distribution curve is shifted to the right. A kurtosis coefficient of 0.065 indicates that the standard deviation around the arithmetic mean is 3.2 narrower than the normal distribution and the empirical distribution curve is steeper than in the normal distribution (Figure 2).

It can be concluded that the respondents' ecological attitude index is relatively similar (less dispersion than normal distribution) and that respondents are more ecological than non-ecological (arithmetic mean 3.2 and the empirical distribution curve is slightly shifted to the right) orientated in overall regarding various statements of organic and conventional farming, Figure 2 for details.

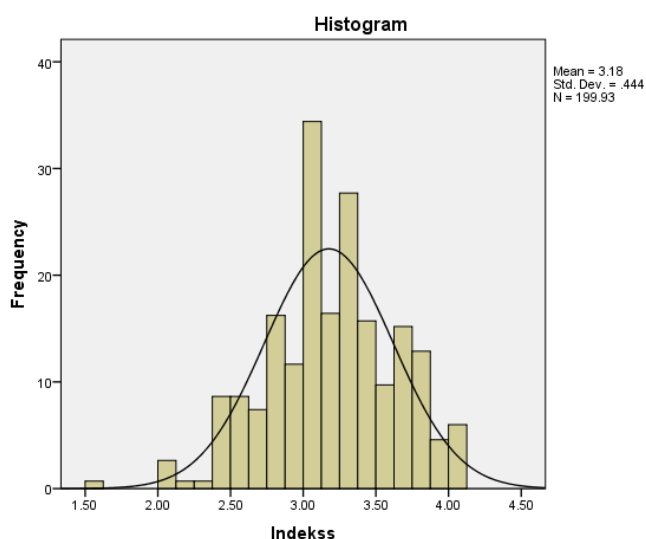| N	Valid	200
Mean		3.1761
Median		3.1440
Mode		3.00
Standard deviation		.44361
Skewness		-.290
Kurtosis		.065
Range		2.43
Lower value		1.57
Highest value		4.00

Figure 2. Descriptive statistics for ecological attitude index and histogram of value distribution of ecological attitude index.

Results of ecological attitudes components and Discussion

Principal component analysis was performed on 10 items out of 14 items by orthogonal rotation (varimax rotation method). Kaiser-Meyer-Olkin measure verified the sample's adequacy for the analysis as excellent (KMO = 0.79) and KMO values for individual items were > .5, which is above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity $x ^ 2 = 386.449$, $p < .001$ indicated that the correlations between items were sufficiently large for the PCA. An initial analysis was run to obtain eigenvalues for each of the data components. Three components according to Kaiser's criteria were greater than 1 and combination explained 65 % of the variance.

Three components were offered in the final analysis. Table 1 shows the factor indicators after rotation.

For the sake of explanation PCA reveals and suggests that we can talk about ecological habits of purchase and the ecological habits of growing.

The set of items formed around the same component shows that the first component reflects the ecological habits of purchase, and it includes 5 items and they explain 29 % of all possible variances, while the second component - ecological habits of growing, it also includes 5 variables and they explain 24 % of all possible variances (the statement of weed control without synthetic fertilizers is ideologically included in both the first and second components, but it is difficult to explain), but third component - the importance of the expiration of products as one variable forms separate components and it explains 12 % of all possible variances, suggesting that this statement is probably redundant on this scale of 10 statements, because it has little to do with other statements.

Table 1

Summary of explanatory factor analysis or analysis of key components on organic and conventional farming issues (N=206)

Components	Rotated factor load		
	1. Ecological habits of purchase	2. Ecological habits of growing	3. The importance of the expiration of products
It is important to me that the food I bought is made in Latvia	0.831		
Animal welfare conditions are important to me when I am buying products of animal origin	0.803		
When I buy food, I am concerned about the synthetic fertilizers used by farmers	0.746		
I avoid buying genetically modified food products	0.703		
Farmers can control weeds, pests and plant diseases without the use of synthetic fertilizers	0.474	0.440	
Synthetic fertilizers cause water pollution		0.799	
Conventional agriculture reduces biodiversity (extinction of animal and plant species)		0.763	
Organic products are healthier than products grown in conventional agriculture		0.696	
Organic farming is more environmentally friendly than conventional farming		0.593	
It does not usually matter to me that foods have a longer expiration term			0.881
Eigenvalue	4.06	1.28	1.16
% of variance after rotation	28.9	24.3	11.7

Although this study reveals consumers' preferences and attitudes, for the discussion other studies demonstrate that there is also a gap between consumers' generally positive attitude toward organic food and their relatively low level of actual purchases (Pearson, Henryks, Jones, 2011) and recent year studies rather focus on determinants for organic food purchases (Janssen, 2018; Bryła, 2016; Van Doorn, Verhoef, 2015), or consumption in general (Bravo et al., 2013).

Conclusions

Most of GNP population in the sample agree with claims about water pollution from synthetic fertilizers, often agree that organic farming is more environmentally friendly than conventional farming, and believe that organic products are healthier than products grown in conventional farming. More than half (> 59 %) of the population living in the GNP area also agrees with other statements. The ecological attitude index among the inhabitants of the Gauja National Park territory shows that the inhabitants are more ecologically than non-ecologically oriented. It implies some remarks for ecological approach in education. Namely, we can talk about rather high ecological literacy within rural population, which can be maintained by ecological approach in education for multifaceted personality development.

The midpoint or median indicates that ecological attitude index overall value is 3,1. Most often for respondents in the range from 1 (completely non-ecological attitude) to 4 (completely ecological attitude) the value of the index is 3 (modal value), which means that respondents have a rather ecological attitude. Thus it can be concluded that the ecological attitude index is relatively evenly distributed (less dispersion than normal distribution) and that respondents are more ecological than non-ecological (arithmetic mean 3.2) oriented in overall regarding various statements of organic and conventional farming.

In this article a type of factor analysis (PCA) signifies that conceptually three components reflect various attitudes of organic and conventionally grown food. The first of which reflects the ecological habits of purchase, the second – the ecological habits of growing and the third - the individual variables on the importance of the expiration of products. The principal component analysis can help methodologically

as well for further research. Thus, methodological conclusions are important for further studies. Statements can be formulated around purchasing elements of organic food and/or around the dimension of growing organic food.

Thus, both methodologically and conceptually, we can separate the statements and, accordingly, the elucidation of attitudes about the ecological habits of purchase and the ecological habits of growing, and apply the tools in the research of the population of other regions of Latvia. Conceptually it is important to use ecological attitude scale about organic and conventionally grown food for educational reasons to measure readiness towards ecologically sound habits and attitudes for sustainable future of our current and further generations.

Finally, it can be said that the aims of this article have been reached. Principal component analysis helped to identify two important dimensions of ecological attitudes about organic and conventionally grown food. These dimensions are ecological habits of purchase and the ecological habits of growing.

Acknowledgement

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Pre-Service Teacher Trainees' Textile Literacy

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Abstract: In an era of consumerism, unsustainable clothing consumption is becoming an essential problem. Problems are related to extensive use of raw materials, energy, water, and labour. There are also bottlenecks with used chemicals in production and labour exploitation issues. Home economics subjects deal with concerns related to textile topics and try to raise awareness of sustainable consumption of textile products. Particularly important is to educate people to have the right knowledge and skills to behave sustainably. The aim of the study was to find out the extent of pre-service teacher trainee's knowledge on textile topics and to research their behaviour in consumer process. In the pilot study, 69 home economics students participated. The research survey was designed to measure the teacher trainee's textile literacy. The results indicate problems in the field of theoretical knowledge as well as in terms of sustainable behaviour in the entire chain from purchase to disposal of textiles.

Keywords: in trainee teacher, sustainability, textile, university education.

Introduction

Along with the increasing demand for textile products, the negative effects on the environment are also growing (Allwood et al., 2006). According to environmental issues, the textile industry is also facing allegations of poor working conditions, low pay, women, and children work; the most common problem of workers in textile industry is burnout (Mukherjee, 2015). Textile production is a complex process in which critical points exist from the production of textile fibres to the disposal of textile products. It is estimated that 8-10 % of the world greenhouse gas emissions and 20 % of industrial wastewater are due to the textile industry (The UN Alliance…, 2020). When buying a textile product, colour is the main decision factor for most consumers (Kant, 2012). However, synthetic dyes are a significant environmental problem; more than 8,000 chemicals are used for dyeing, many of them are toxic and can endanger human health (Nimkar, 2018). The problem of textile wastewater is not only the fact that in the dyeing process 20 % of the dyes used remain in the effluent (Chequer et al., 2013) but also the fact that the effluent has a high temperature and pH value (Kant, 2012).

In addition to high water consumption and the use of toxic chemicals, the main environmental issues facing the textile industry also include the issue of greenhouse gas emissions and textile waste (Allwood et al., 2006). P.S. Norum (2013) stated that 49.5 % of all discarded household items are textiles. Growing amounts of textile waste are also due to the fast fashion phenomenon which is often labelled as "disposable fashion". Fast fashion is characterized by giving consumers access to trendy, low-cost clothing with a short sales cycle (Morgan, Birtwistle, 2009) which particularly suits young people who don't have a lot of money and want to follow fashion trends. Therefore, young people tend to buy a larger number of cheap, low-quality clothes that they will only wear for a short time and throw away quickly (Koklič, Dmitrović, Gorše…, 2019). This can be a problem, because buying habits are often maintained into adulthood (Magie, 2008).

In response to the harmful effects of fast fashion, the idea of slow fashion emerged. Slow fashion follows the philosophy from cradle to cradle - creating products that at the end of their life become ingredients or raw materials for other products (Fajt, 2014); it aims to slow down the production of clothing by improving the manufacturing process and to encourage awareness, promotion of responsibility and sustainability in the textile industry (Pookulangara, Shepard, 2013). Slow fashion includes consumer education to buy less but aim to buy better quality clothing. While there is no more value in having instantly new items, less ecological unfriendly materials can be used in the manufacturing process, production can be slower, work is more friendly for workers and waste problems reduced (Jung, Jin, 2014).

Today, many researchers are trying to improve textile production. M. Roy, P. Sen and P. Pal (2020) focused on identifying the critical environmentally conscious manufacturing indicators and proposed

technical solutions to reduction of waste, carbon dioxide emissions, nitrogen oxides, energy consumption and to ensure better occupational health. M. Rahman working together with colleagues emphasized the importance of the application of biotechnology in the field of textiles as an environmentally sustainable alternative (Rahman, Billach, Hack-Polay, 2020).

Very interesting niche, based on new technology transfer from research institutions (medicine, engineering) to textile industry, is micro-segment of smart textiles. *"Smart textiles find applications and have outstanding outlooks almost in every sphere of human activities"* (Mečņika et al., 2014, 150).

So-called organic clothing emerging on the market today is made with the help of eco technologies, using natural dyes and recyclable materials, without the use of pesticides and insecticides (Eryuruk, 2012). It reduces the ecological footprint and increases the participation of the textile industry in sustainability (Fu, Kim, 2019).

The consumer has so many choices on the market today. In the purchasing decision, they also decide for or against sustainability by their choice. Labels on textile products help the consumer when buying textiles. A study by Environmental Research Associates found that approximately 10 percent of adults' search for environmental information on labels and that the susceptibility to search for environmental information varies with gender and age (COPE Council on…, 1996).

Various research (Oskamp et al., 1991; Butler, Francis, 1997; Connell, 2010) showed that consumers are concerned about the environment, but their views are not necessarily reflected in sustainable consumption. The J.D. Hines' and M.E Swinker' (1996) survey showed that consumers in principle would be willing to pay 10 % more for a sustainable product. However, when, for research purposes, the survey participants were exposed to price increases of sustainable products, half of the participants indicated that they would prefer to buy a cheaper product – regardless of the environmental impact.

In addition to choosing and buying clothes, consumers' attitudes towards clothing also include the use and maintenance of clothing. How well consumers understand and follow the maintenance instructions on the garment label determines their lifetime (McLaren et al., 2015).

Given the role that textile management plays in the context of sustainability, it makes sense to start developing textile literacy in primary schools. To my knowledge, there is no clear definition of textile literacy in the literature for the purpose of the present research, textile literacy was considered as all knowledge, attitudes and behaviour of an individual in authentic life situations related to textile content. The textile literate person thus has the appropriate textile knowledge, positive attitudes towards the implementation of knowledge/good practices in daily routine and realizes their knowledge and intentions in everyday life through sustainable behaviour - in three main areas: planning/purchasing, textile maintenance/care, and textile disposal/recycling. In education, the teacher's knowledge and attitudes on the subject are essential for effective knowledge transfer.

The main research question was: What are the critical points in terms of pre-service trainee teacher textile literacy in the area of knowledge and behaviour?

Methodology

In the study, what was carried out in the Faculty of Education, 69 home economics teacher trainees were participated (86.2 % of all home economics teacher trainee students) aged from 18 to 25 (M= 21,23; SD =1.840), where 94.1 % were female and 5.9 % male. The research survey was designed to measure the teacher trainee's textile literacy. The question was closed (with one exception); for measurement of purchasing behaviour and attitudes the Likert scale was used. Descriptive statistics was carried out with statistical program SPSS 20.

Results and Discussion

Teacher trainees' theoretical knowledge

Research has shown that many substances used in the textile industry are dangerous to health; they impact on reproduction, carcinogenicity, mutagenicity, endocrine disruptors (Nimkar, 2018). These chemicals can be released during wear and washing (Žurga, Tavčer, 2013) but the impact on users has

not yet been sufficiently studied (Poljanšek et al., 2018). However, it is important that the consumer behaves self-protectively, knows the possible risks and acts prudently.

When asked whether chemical substances could be present in textile products, 79.4 % respondents answered yes. The respondent stated that textiles may contain azo-days (38.2 %), pesticides (25 %), formaldehyde (25 %), nanoparticles (23.5 %), PFC (22.1 %) and phthalates (13.2 %). Respondents were also asked to write 3 chemicals they think have a negative impact on health. On this question only 39.7 % of trainees answered. The most often mentioned were dyes (70.3 %), followed by pesticides (33.3 %), formaldehyde (23.5 %), nanoparticles (18.5 %), chlorine (14.8 %) and phthalates (11.1 %). 91.2 % of respondents know that dyes can cause allergies. 64.2 % of respondents know the recommendation that the product should be washed before wearing.

The trainees were also asked on the information that must be provided on the textile labels, knowledge of maintenance symbols and labels to ensure consumer health was checked. The legislation stipulates that the raw material composition is mandatory, and that the raw material composition must be indicated in the local language (Označevanje tekstila…, 2020). Only one respondent correctly answered that the raw material composition on textile label is mandatory by law, 44.1 % knows that raw material composition must be in the native language. Maintenance labels for textile products help consumers to take appropriate care of the products. Most of the respondents correctly named the labels for ironing (100 %) and washing (97 %), slightly more than half of the respondents correctly named the label for whiter (58.8 %) and less than one quarter of the respondents correctly named the label for drying (23.5 %) and professional care (17.6 %). 66.2 % respondents correctly identified the labels to ensure consumer health. 79.1 % of the respondents knew that textile waste is one of the fastest growing waste groups. The results revealed that participants have poor knowledge on chemical substances that could be present in textile products. Better is the knowledge on labelling and textile maintenance.

Teacher trainees' consumer behaviour

The results revealed that most of our participants in the survey (61.8 %) take a shopping bag with them when they go out to buy textile products, but they are not sufficiently aware of information on the textile products – less than half read the information on the pendant (41.2 %) and less than a quarter of trainees pay attention to quality signs. When buying textile most of them (83.8 %) do not even think about how they will dispose of the garment when they stop using it. (Table 1).

Table 1

Teacher trainees' consumer behaviour – attention to information on the pendant quality marks and disposal

Statement	I do not agree %	I do not know %	I agree %	M	SD
I take a shopping bag with me when I go out to buy a textile product.	16.1	22.1	61.8	3.81	1.352
When buying textile products, I read the information on the pendant.	25	33.8	41.2	3.22	1.077
When buying, I pay attention to symbols that guarantee the quality and health of consumers.	48.5	29.4	22.1	2.62	1.051
When buying a textile product, I think about how I will take care of disposing it when I stop using it.	83.8	8.8	7.4	1.84	0.924

The results also showed (Table 2) that the trainees most agreed with the statement that price is most important when buying (48.6 %). Slightly less trainee teachers (48.5 %) agreed that they will buy the product they like although they already have enough clothes. Almost half of surveyed trainees (47.1 %) also stated that they prefer to buy clothing that is cheaper than more expensive clothes. Almost 40.0% of surveyed trainees stated that more cheaper clothes allow them more fashion combinations. The results also showed that 41.2 % of trainees agreed that they will buy textile products even though they may be less environmentally friendly than what they would like. Research showed that 42.6 % of trainees do

not know if there are sufficient organic products on the market. Results also suggest that participants are not aware of the impact that fashion has on them.

Table 2

Teacher trainees' consumer behaviour - price, fashion and sustainability

Statement	I do not agree %	I do not know %	I agree %	M	SD
The most important factor when buying a textile product is the price.	19.1	32.4	48.6	3.37	1.021
I prefer to buy clothing that is cheaper rather than buying slightly more expensive clothing.	19.1	33.8	47.1	3.35	1.019
If I like the product, I will buy it although I already have enough clothes.	30.9	20.6	48.5	3.21	1.216
More cheaper clothes allow me more fashion combinations, so I prefer to buy cheaper clothes.	25	35.3	39.7	3.16	1.060
If I like a textile product, I will buy it even though it may be less environmentally friendly.	29.4	29.4	41.2	3.15	1.149
The most important factor when buying a textile product is fashion.	35.3	36.8	27.9	2.81	1.110
There are sufficient affordable organic textiles on the market.	33.8	42.6	23.5	2.87	1.006

The results revealed that 47.1 % of trainee teachers agreed that they are wise consumers, 44.1 % was undecided.

Teacher trainees' maintenance and care

The results showed that 31.4 % trainees agreed that they wear clothes mainly made of artificial fibres, 41.8 % of the participants do not know. Most (89.7 %) respondents stated that they always washed the new textile products before wearing it, but only 33.9 % of trainee teachers stated that they wear all clothes they buy.

Teacher trainees' habits of textile disposal and recycling

According to E. Fajt (2014) the main problems of fast fashion apart from cheap labour, poor working conditions, excessive energy consumption, release of heavy metals and chemicals that are dangerous to nature and humans are growing amount of textile waste. The participants were asked what they do with old textile products. Most respondents answered that they would give them away (76.5 %) or take them to a collection centre (73.5 %). Minority would burn them (1.5 %), throw them in a mixed waste bin (2.9 %), sell them (8.8 %), recycle 2.9 %) or use them for cleaning (1.5 %). Less than half (42.6 %) of the trainees agreed that buying textiles at used clothing stores is a good solution for reducing textile waste. 69.1 % of participants would recycle old textiles if they could (Table 3).

Table 3

Attention to recycling and buying used textiles

Statement	I do not agree %	I do not know %	I agree %	M	SD
I would recycle old textile products if I could.	13.3	17.6	69.1	3.88	1.216
Buying textiles at second-hand clothing stores is a good solution for reducing textile waste.	23.5	33.8	42.6	4.16	0.857

Despite the small sample, the results suggest critical points in textile literacy. More should be done not only in the field of dissemination of theoretical knowledge but also in the field of consumer awareness, giving concrete ideas for maintenance and care of textiles and also in the field of giving concrete ideas of recycling and overcoming prejudices about used clothes.

Conclusions

The results of the present research on pre-service teacher trainees' textile literacy suggest that:

- participants' theoretical knowledge on the topic of textiles is not optimal,
- fashion impacts participants when making purchasing decisions (buying more cheaper clothes to have more fashion combinations),
- during the buying process, trainees are not sufficiently aware of the labels attached to clothing,
- when buying a textile product, they do not think of how to dispose of the clothes,
- only 33.9 % of the trainees wear all clothes they have,
- participants are willing to recycle old textiles, but they do not have enough knowledge to do it.

Research has shown weaknesses in teacher trainees' textile literacy (both in knowledge and behaviour). Results suggest that more different teaching strategies should be used in the education process to promote and educate on the importance of textile topics in line to follow sustainable behaviour in everyday life. A good starting point could be the combination of practical work with modern information and communication technology. Future teachers should, through study, get a variety of ideas and teaching tools to competently teach textile topics in the context of sustainability.

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Didactic Approaches to the Application of Cross-Curricular Topics in Secondary Vocational Education

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Abstract: Modern society is often referred to as a society of knowledge and information. In this context, activating methods are experiencing a renaissance. Such methods offer students the opportunity to progress to perceive more accurately and comprehensively, recognize and experience stimuli, develop their perception and thinking, effectively solve problems, communicate and act objectively and successfully. It can be an active teaching and learning that is the way that can contribute to such a goal in the era of systematic cognition and differentiation of information, raising living standards, changing lifestyles, and globalizing the world. The question is how to bridge this epoch in the sense of preparing students for their active roles as inhabitants of the planet, accepting a responsible way of life in line with sustainable development. It is especially important for environmental education to understand the context and learn interdisciplinary, comprehensively, to be able to distinguish values, to take interest in and get to know one's surroundings, to discover, to take the initiative and to be sensitive and receptive as well. Therefore, it is necessary to think about the didactic methods that teachers use in their lessons and focus on activating methods and forms of teaching, leading to the fulfilment of such sub-objectives. In this context, the aim of the paper is to introduce and analyse new activating didactic approaches to the implementation of the cross-curricular topic "Man and the environment" as designed by graduate students of the Institute of Education and Communication at the Czech University of Life Sciences Prague between the academic years 2019 and 2020. Didactic approaches (such as project-based learning, field learning with the support of worksheets, and the use of nature educational trails) applicable in practice were designed for selected localities, focusing on increasing the interest and awareness of secondary and secondary vocational school students about their surrounding natural environment.

Keywords: environmental education, secondary vocational education, cross-curricular topics, didactic approaches, awareness.

Introduction

Active teaching and learning are based on learning, discovery, critical thinking, mutual cooperation and application of what has been learned. We live in a time that has spanned the era of systematic cognition and differentiation of a wealth of information from many disciplines, which has contributed to raising living standards, changing lifestyles and production patterns, but also to globalizing the world and related environmental and social issues. The decision needed is how to bridge this epoch, how to prepare students for their active roles as inhabitants of the planet (Nováková, Němejc, Dytrtová, 2018). It can be active teaching and learning that is the way that can contribute to such a goal. It is especially important for environmental education to understand the context and learn interdisciplinary, comprehensively, to be able to distinguish values, to take interest in and get to know one's surroundings, to discover, to take the initiative and to be sensitive and receptive as well. Therefore, it is necessary to think about the didactic methods that teachers use in their lessons and focus on activating methods and forms of teaching, leading to the fulfilment of such sub-objectives (Ehrlich, 2011). As a result of innovative processes taking place in modern society is developing a new system of educational values. New paradigms resulted in a review of approaches to the development of vocational education strategies, focusing on personal approaches to teaching and education (Zhanguzhinova, Magauova, Nauryzbaeva, 2016). The assigned topic of graduate thesis: "On the way to school" for students of the study programme of vocational education, implemented by the Institute of Education and Communication at the Czech University of Life Sciences Prague was an incentive to find new activating didactic approaches for future teachers, as they need to be constantly found and innovated, as confirmed, for example, by P. Sjoblom and L.A. Wolff (2017), M. Cyrankowska, J. Kostecka, A. Mazur-Paczka (2019), and D. Vasilevska and A. Geske (2020).

The demand for active teaching as one of the ways to bridge the crisis of a "static" learning culture is not new, as was stated, for example, at the UNESCO meeting in 1997 (Scoullos, 1998). Many universities that prepare teachers have been dealing with this issue for a long time. In the application of active teaching and learning to environmental education, the situation at schools and in the preparation of teachers in the Czech Republic was described and commented on in several of outputs published abroad over the past twenty years (Dytrtova, 2003; Dytrtova, 2005; Dytrtova, 2006; Dytrtova, 2007; Dytrtova, Nemejc, 2018). Methods and forms that support active learning include problem-based teaching, student projects, discussions, fieldwork, observation (especially phenological observations), educational trails, and student conferences.

An ethical attitude towards nature and the environment and critical thinking are a prerequisite for environmental awareness and active responsible behaviour. Most people have a need for contact with nature; this need is often associated with aesthetic experience or active activity in nature. Admiration for nature in adults and knowledge of nature and its products in children often means – what I know, I do not destroy. However, the relationship and behaviour of individuals to nature can be very different. In the field of environmental psychology and ecopsychology, some authors address the question whether or not a person sensitive and receptive to nature also protects it (Mackay, Schmitt, 2019) and tries to characterize the typology of man's relationship to nature. The presented characteristics take into account various attributes – e.g., the need for contact with nature, the degree of adaptation to change, the strength of an anthropocentric attitude to nature compared to the biocentric attitude - man is the master in nature and controls it (passive observer – active protector).

It is typical for these days that people's relationships and behaviour towards nature and the environment are contradictory – even those who love nature do not always behave responsibly towards it. Classification according to the typology of man's relationship to nature is therefore problematic and thus we will not follow it, nor due to their low effectiveness, we will use typologies by other authors already published.

Teacher is a bearer of eco-literacy and co-creates an attitude towards nature and the environment in their students. The basis of the appropriate attitude, relationship and behaviour is the perception of the environment, nature and cognition itself, getting acquainted with the environment "where I live, where I go to school". Based on this, an assessment of the quality of the environment is created, combined with critical thinking and action in favour of the sustainability of the appropriate level of quality of the environment and life in it. This is therefore our long-term goal – the goal of environmental education and the effort to prepare teachers to fulfil this goal. It is necessary to realize that this is only a part of the process, because the role of the student is the only an episode within his / her path of life, when values and environmental insights can change.

Regarding the above-mentioned, the aim of the article is to introduce and analyse new activating didactic approaches to the implementation of the cross-curricular topic "Man and the environment" as designed by graduate students of the Institute of Education and Communication at the Czech University of Life Sciences Prague between the academic years 2018-2019 and 2019-2020.

Methodology

The design of future teachers of vocational subjects for new approaches to the application of the cross-curricular topic "Man and the environment" is based on the topics of graduate thesis. In this respect, didactic approaches with the emphasis on the perception of surroundings and natural environment (natural and historical values, awareness increasing, natural monuments, trees, life near the river, bird nests, and many other specific areas) of students of secondary and secondary vocational schools have been found.

In other words, "On the Way to School: The Awareness of Students of Secondary Vocational Schools about their Surrounding Natural Environment" is a topic and at the same time a chance to get acquainted with the surroundings of the school, discover the unknown, critically judge, and actively participate. The authors of the graduate thesis made their proposals for didactic procedures and innovations based on their own ideas, experience and creativity. In this regard, the authors of the submitted graduate theses initially studied and analysed the literature dealing with the issue to extend their knowledge. On a practical level, they were acquainted in detail and assessed the surrounding natural environment of the selected localities. Didactic approaches with emphasis on their appropriate application in practice and the resulting desired

impacts were presented. The above-mentioned was professionally led by the supervisors, who continuously discussed the solutions and didactic approaches with the authors, encouraged them and supervised the empirical process of elaboration of theses.

The graduate theses were written and defended by the authors in the academic years 2018-2019 and 2019-2020. Selected results of the four graduate theses are provided in the following chapter.

Results and Discussion

The chapter presents selected didactic approaches and their examples, as designed by students of teacher training programmes at the Institute of Education and Communication of the Czech University of Life Sciences Prague.

The didactic approach by S. Svacek (2019): Project-based learning

The didactic procedure designed by S. Svacek (2019) focuses on the application of the cross-curricular topic "Man and the environment" through *project-based learning* for students in the first to fourth years of secondary education. The author is aware of that environmental education provides information to the public, from the youngest to older generations. It helps to create a positive relationship with the surrounding natural environment. The intention of the author's didactic approach is the verification of students' attitudes and raising their awareness about their surrounding natural environment. Here, the activities are focused on a specific secondary school and its surroundings.

Such an approach was designed within a graduate thesis. The author focused in details on the analysis of the region near a selected secondary vocational school of the Czech Republic. The proposed activity should stimulate and increase the interest in the surrounding natural environment of the students during the processing of their project. Its use is possible both outside nearby the school and in group teaching and independent work of students at school. The advantage of such an approach is the possible application regardless of the specific secondary vocational school or region. As a part of the project, students, in groups, map the terrain in the given localities, take a photo documentation, discuss, focus mainly on evidence of environmental damage around their school (such as waste management, black dumps, noise sources, watercourse cleanliness, state of greenery, neglected areas…). Students then suggest ways to improve, use or remedy these localities based on their findings. The output of the project is a comprehensive material of localities and phenomena that need to be solved from the students' point of view.

Furthermore, another output of activities is a "student ecological audit" of the area of interest, where students rate areas such as, e.g., waste management, transport, energy, air pollution, water management, and others, and find suitable solutions and recommendations for the management of the town.

The didactic approach by J. Hyklova (2019) and V. Sedivy (2020): Field learning with the support of worksheets

Young people spend most of their time in the virtual world on the computer and do not know life and the world around them. The authors of this didactic approach assume that the right to a healthy environment is already enshrined in the Charter of Fundamental Rights and Freedoms. One of the ways to improve the current – not very positive state of the environment is, in addition to restrictions, environmental education and training. As a result, this didactic approach was designed with the aim to increase students' awareness of their surrounding natural environment on their everyday way to school. For these purposes, on the basis of theoretical background and legislation, activation means were designed to motivate students to increase their interest in their environment. In the first phase, preparation for field teaching and learning in the natural environment of a selected region of the Czech Republic was proposed for teachers and students of secondary schools. In the second phase, practical sheets were created that can be used for teaching not only at secondary vocational schools. On the way to school, students should be active, observing the surroundings, completing tasks, recording the results of their observations, discussing them with classmates and the teacher at school.

The approach is designed for students of secondary and secondary vocational schools and is based on the cross-curricular topic "Man and the environment". The main goal is to form a relationship with the environment based on newly acquired knowledge and skills, which is key to the environmentally sustainable behaviour of human society. The example of implementation of field learning is described in Table 1.

Table 1

The example of implementation of field learning with the support of worksheets

Time/range	Activities
8:00	Meeting in front of the school and departure to the locality
8:16–9:12	Travel by bus
9:12–9:30	Move to activity 1
9:30–9:50	Activity 1 Memorial trees of the Czech Republic - St. Wenceslas Oak
9:50–9:55	Move to activity 2
9:55–10:55	Activity 2 Landscape evaluation
10:55–11:05	Break - snack time
11:05–11:15	Move to activity 3
11:15–11:45	Activity 3 Orchard - biotope or community space?
11:45–12:00	Move to activity 4
12:00–12:20	Break - lunch
12:20–13:40	Activity 4 NATURA House
13:40–13:50	Transfer to bus stop
13:50–14:48	Return by bus
15:00	Arrival to school, evaluation of activities, closure of the field learning

The set of worksheets designed by J. Hyklova (2019) contains the following topics:
- 1 Introduction – HUMANS AND THE ENVIRONMENT
  - general terminology, basics of ecology and environment
- 2 On the way to school – THE WAY IS A GOAL
  - orientation on the map, ecological transport, ecological footprint
- 3 On the way to school – CULTURAL LANDSCAPE
  - definition and meaning of cultural landscape, location of the city
- 4 On the way to school – WATER
  - water cycle, soil retention, importance of water elements in the landscape
- 5 On the way to school – BIRDS
  - knowledge of urban bird species, synanthropy
- 6 On the way to school – TREES
  - exploring deciduous and coniferous trees, the function of greenery in the town

To illustrate, we present a selection of worksheet # 2 items focusing on "On the way to school - THE WAY IS A GOAL":
- On the attached map, mark the route along which you usually get to school.
- What is the distance between your home and school?
- How much time do you spend on the way every day? Do you use the time spent on the road for other activities?
- There are other variants of routes to get from your home to school. If so, mark them on the map and write, how often you use them.
- On the map, mark at least three places (points) that are important to you on the way to school. Justify why you marked them.
- Do you walk to school or do you use one of the means of transport?
- Assign, to the types of means of transport, their ecological footprint.

The didactic approach by M. Orvanova (2019): Nature Educational Trail

In addition, another author of the didactic approach believes in the importance of human ties with the environment. She accentuates the meaningfulness of walks with children to the nature from their early age, so that they know it well and like it, so that they build pro-ecological value orientations.

Thus, in accordance with the cross-curricular topic "Man and the environment", the author proposed an activity for secondary and secondary vocational school students, which would serve teachers in line with the concept of the topic to increase students' awareness of their surrounding natural environment.

The activity itself is a design of a nature educational trail in the selected area of the Czech Republic. The area was analysed, including fauna, flora, environmental aspects of this locality, and difficulty of the route in terms of time allocation for teaching. The lesson arranged as a walk of the teacher and the students on the created educational trail is supported by the relevant worksheets for recording and describing the observed natural products, to record the results of their observations, to better remember the information and possibly to repeat it. The example of a worksheet is in Figure 1. Learning outcomes would take the form of their presentation and discussion within the Project Day.

Figure 1. Demonstration of a worksheet focusing on increasing students' awareness of deciduous trees and their importance.

Conclusions

The authors are convinced that environmental awareness is the basis for a positive and committed relationship with the environment and nature. The topic "On the way to school", through the diversity of didactic approaches is an example of how to lead students to get to know their surroundings, how to critically evaluate it and find solutions to improve its quality and sustainability. From the didactic point of view, the form of field teaching and the method of project teaching and both independent and group work of students proved to be effective. Controlled observation and providing students with worksheets prepared by the teacher, which guide students' observations and independent activities and guide them to a more permanent memorization of observed natural products and phenomena, has also proved to be successful and significant.

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Collaboration between Pre-School Institution and Family

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Abstract: Collaboration in all educational institutions including pre-school establishments is a topical issue especially within the framework of competence-based learning approaches. The aim of the study was to find out what is the collaboration between pre-school and parents in relation to the acquisition of pre-school curriculum which in Latvia is defined as compulsory for children in the age of 5 to 6 (7) years. A quantitative approach was used in the research and two surveys were conducted in April 2020. Both parents and pre-school teachers who work with 5 to 6 (7) year old children were asked to participate in the on-line survey, which was developed in the platform *VisiDati.lv*. Analysis of collaboration between parents and preschool was based on the framework of six types of school-family-community involvement created by J.L. Epstein. The research analysis revealed that pre-school teachers and parents have different understandings of the child's need for parental support so that parents can get involved and promote the acquisition of compulsory pre-school curriculum. Teachers and parents have clear communication channels to fully exchange the necessary information, however, to form collaboration, teachers have difficulties in developing individual curricula in some cases. The research results are useful to understand what hinders cooperation and how to improve it.

Keywords: socialization, pre-school education, collaboration, family.

Introduction

Building collaboration and defining values in schools is a topical issue for educational institutions today, which has become relevant with the introduction of competency-based learning approaches. The need of cooperation is focused on the pre-school, primary and further education stages (Reynolds et al., 2017), where the pre-school guidelines indicate the cooperation process as one of the principles to implement the curriculum - the child, teachers, parents or the child's legal representatives and development cooperation, involving parents or the child's legal representatives to support the child's learning and providing regular feedback on the child's performance and achievements (Noteikumi par valsts..., 2018). The topicality of the research is defined by the unclear process of activities, how the cooperation between school, family and a child can be methodically developed and practically implemented.

As A.G. Degangi with co-authors in their research state, collaboration between educators and families can illuminate different views on parenting practices, daily life, family structure and roles, disability and its causes, early intervention, helpful relationships and communication with others, all of whom are influenced by culture, values and beliefs (Degangi et al., 1994). Despite various problems and conflict situations, the teacher must do everything possible to develop cooperation with parents, because they are essential in the child's learning process (Barile, 2020). N. Barile refers to her own approaches in working with parents which includes activity, kindness, explaining goals and outcomes to parents, developing an action plan, solving problems, starting with a positive comment, taking the lead in the conversation, maintaining communication on both children achievements and solving problems (Barile, 2020). S. Koviene in her research has discovered that parents in pre-school institutions mostly expect support from specialists such as the psychologist, social pedagogue, and nutritionist (Koviene, 2017). Albanian researcher A. Ecirli focuses on the significance of interaction between a family and pre-school institution (Ecirli, 2012). Both family and pre-school are the first significant socialization agents, therefore A. Ecirli believes that the family develops certain characteristics of a child which cannot be changed by the educational institution unless its cooperation with a family and parents in particular is based on common values. He also points out that the goals of the pre-school education include helping the child to develop physical, mental, emotional and social abilities by stimulating a healthy environment so necessary for the development of a child's personality. Pre-school develops children basic knowledge, skills and attitudes necessary for further schooling. This function of pre-school education is important, especially for children from lower socio-economic backgrounds. From this perspective, pre-school contributes also to the education of parents that improves their knowledge in how to

help children in the learning process at home. Parents are involved in assessing children's performance (Lin et al., 2021). To achieve effective collaboration, teachers must take into account the differences in the cultural background of each family, experience, and behaviour patterns (Ecirli, 2012).

Although the family is the child's primary socialization institute, today parents have high demands towards educational institutions to ensure children's socialization. One of the most important roles of pre-school education is to create a learning environment in which children can become a part of a social group. With the promotion of independence and the support of teachers, children develop their self-confidence, learn to interact with other peers, learn what compassion and respect are. Pre-school education plays an important role in social education, which emphasizes the importance of social and emotional learning, promotes the development of skills and is the basis for the process of self-awareness (Deans et al., 2017).

Cooperation is the result of shared values and norms, as well as compliant behaviour (Diekmann, Lindenberg, 2001). In relation to cooperation between parents and pre-school teachers, the focus should be on developing a common understanding of values and not on cooperation based solely on instructions, recommendations, or guidelines (Robbins, 2005; Vanaga, Balode, 2016). Parents may have differing opinions on teaching methods and approaches, and this may be a serious challenge for teachers as there are situations when child activities need to be coordinated with the parents' permission (Taurina, 2015). Parents must be a partner in the school, because parents also act as a child's teacher. It is even the case with teachers who are parents' partners while the children are in their care. While children are in school, teachers are involved in shaping children's thinking, attitudes and behaviours by collaborating with parents. Without parental support and cooperation, teachers' efforts and influence are limited (Yaşaroğlu, 2016; Reynolds et al., 2017). The pre-school guidelines define forms of cooperation between the institution and the family (Klauža et al., 2009), which are:
- individual (written, telephone or electronic communication, answers to questions, parents' invitation to school, individual consultations, home visit, discussions with parents);
- group (group parents' meeting, parents committee or council, group consultations);
- frontal (general meeting of parents; family evenings; school holidays; hiking, excursions; sporting events; joint attendance at cultural events; pedagogical education activities.

J. Badjanova and Dz. Ilisko refers to the need for a balanced and sustainable system of general education (Badjanova, Ilisko, 2014). In Latvia, since 90s of the 20th centuries, increasingly attention is paid to the child as an individual. Increased attention is paid to the child's interests, needs and well-being in society, which are related to the child's adaptation in the pre-school educational institution and later to the child's transition from pre-school to school (Āboltiņa, Černova, 2017). The aim of the study is to find out what is the collaboration between pre-school and parents in relation to the acquisition of pre-school curriculum which in Latvia is defined as compulsory for children in the age of 5 to 6 (7) years.

Methodology

A quantitative approach was used in the research and two surveys were conducted in April 2020. To reach the aim, the following research questions were defined:
1. What is the role of pre-school education institutions and a family in the process of children's socialization?
2. What are the expectations of the pre-school educational institutions and parents regarding the collaboration process?
3. What is the daily co-operation between pre-school and the family?

To answer these questions, both parents and pre-school teachers who work with 5 to 6(7) years old children were asked to participate in the on-line survey, which was developed in the platform *VisiDati.lv* and organized according to the methodological and ethical principles of the Internet survey (Roberts, Allen, 2015; Toepoel, 2016). Parents (n=185) of children aged 5 to 7 years acquiring compulsory pre-school education and teachers (n=130) who provide compulsory education were involved in the survey. Convenience sampling was applied in the study to reach more respondents from different regions of Latvia. The sample, however, is not representative, therefore the research results are indicative. Information about the survey was disseminated via social media platforms (such as *Facebook*, *draugiem.lv)* and via e-mailing to pre-schools. Separate questionnaires were designed for each target group

comprising both the same and specifically formulated questions for the teachers and parents. Closed and open-ended questions were included in the survey. Only few men participated in the parents' survey and all respondents from the teacher group were women. The respondents were informed about the aim of the research, they were provided with contact information in case they had queries regarding the survey. According to the research ethics (Toepoel, 2016), participation in the survey was completely voluntary and anonymous. The results of the research were analysed only in an aggregated way and responses of both sample groups were compared where appropriate.

Analysis of collaboration between parents and preschool was based on the framework of six types of school-family-community involvement (Figure 1) created by J.L. Epstein (Epstein, 2010; Sanders, Epstein, 1998).

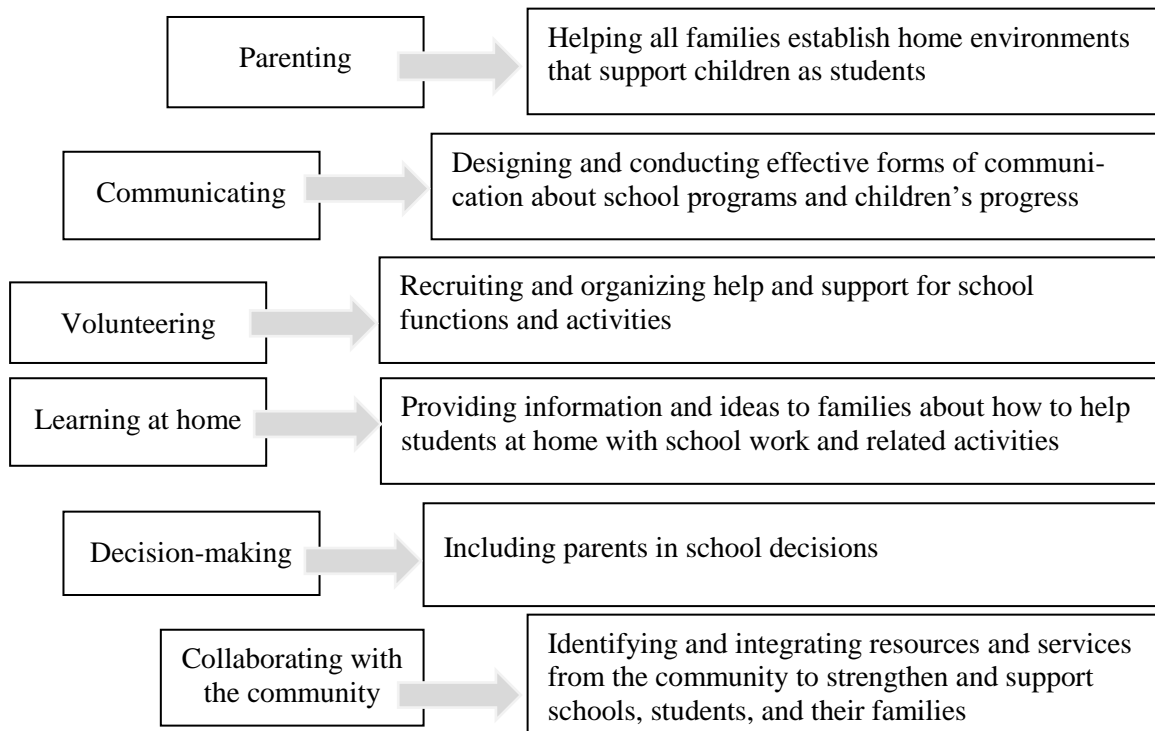| Parenting | → | Helping all families establish home environments that support children as students |
Communicating	→	Designing and conducting effective forms of communication about school programs and children's progress
Volunteering	→	Recruiting and organizing help and support for school functions and activities
Learning at home	→	Providing information and ideas to families about how to help students at home with school work and related activities
Decision-making	→	Including parents in school decisions
Collaborating with the community	→	Identifying and integrating resources and services from the community to strengthen and support schools, students, and their families

Figure 1. The six types of involvement (Sanders, Epstein, 1998; Epstein, 2010).

Survey questions were elaborated according to the six types of involvement (Figure 1). The same structural logic was maintained in data analysis.

Results and Discussion

To promote and create an appropriate learning environment at home, which would stimulate the acquisition of compulsory subject content, pre-school teachers need to educate the families and support them emotionally. This is how teachers can contribute to **parenting** greatly. In the survey, 51 % of parents indicated that they would like to receive recommendations from the pre-school teachers on learning at home which is appropriate to the child's age and development, 27 % of the respondents indicated that they would partially like to receive recommendations, and only 22 % indicate that they do not want to receive teachers' recommendations. To provide necessary support to the 5 to 7 years old children in the acquisition of their subject in pre-school, 33 % of teachers indicated that parents should primarily pay attention to the child's psychological development, 29 % of teachers believed that attention should be paid to socialization process and only 17 % of teachers indicated that parents should pay attention to learning the subject matter. Some teachers (12 %) pointed out that this is a complex measure and cannot be separated therefore parents should pay attention to the interaction of all types of support. Teachers' survey revealed the following: 43 % of the respondents admitted that their pre-school institutions have developed precise recommendations for teachers on how to communicate, cooperate and solve various problems with parents, whereas 9 % indicated that there are no such recommendations. The rest part of the respondents pointed out that pre-school institutions have developed partial recommendations for teachers on collaboration with parents. This indicates that there is no common concept and guidelines in the pre-school

system as a whole, how pre-school teachers can better communicate with parents. Such recommendations for teachers may have been developed on the basis of an individual institution initiative.

According to J.L. Epstein (Epstein, 2010), **communication** between pre-school institution and the family is a two-way discussion and exchange about the schooling programs of educational institutions, educational achievements and children progress. In the survey, teachers pointed to a number of IT tools and solutions as the most common communication channels: pedagogical communication is organized through telephone calls, online communication platforms and apps such as *WhatsApp*, and e-mails (mentioned by 36 % of the respondents). An equally important approach is individual teacher-parent face-to-face communication (mentioned by 35 % of the teachers). Parents also mentioned that the main information exchange channels between the pre-school institution and the family are direct communication with a teacher (mentioned by 50 % of the respondents) and IT solutions (mentioned by 32 % of the parents). However, although the forms of communication are clear to users and at place, the content of the communication is important, which limits or encourages the result of cooperation. In the survey, 10 % of parents indicated that they did not receive information from the pre-school institution about the child's achievements and skills to be developed, 49 % indicated that they received it only if they asked, and 41 % of parents acknowledged that they have received sufficient information from the pre-school institution.

Information exchange should be reciprocal and genuine to encourage mutual communication. However, 10 % of the teachers indicated that they do not receive any true information about the child's individual development, family problems or other issues that affect the child's development and the teacher should pay attention to to promote an acquisition of the pre-school curriculum. Still, 79 % of teachers indicated that this type of information is partially received when asked by the authority. Only 11 % of the respondents admitted that the institution has information about the child's individual development, which allows to provide a necessary support. During the survey, the teachers referred to a number of issues, such as family problems, as the most common hidden information of parents that hinders the learning process in pre-school (Table 1).

Table 1

Examples of problems in families affecting the acquisition of knowledge and skills in pre-school

Social/ family problems	Psychological problems	Physical problems
• Internal family problems (parental divorce, single-parent family, dis-agreements between parents, relation-ships with other family members) • Division of responsibilities between parents (who is responsible for what) • Everyday living conditions (financial situation, place of residence, environment). • Ignoring recommended specialists (e.g., do not visit a speech therapist, although pre-school teachers recommend)	• Child's behavioural disorders (possible medical causes hyperactivity, autism) • Psychological atmosphere in the family and during contacts with other people (psychological terror, mobbing)	• Health/ morbidity problems (a child has been taken to pre-school with signs of illness, but this fact is hidden from personnel) • Child's physical abnormalities were approved by a doctor that has not been reported to pre-school institution (e.g., movement disorders) • Violence (physical abuse of a child, also physical abuse of other family members)

Open-ended question was included in the survey to find out the problems what teachers faced in terms of collaboration with parents. Some pointed out that often parents do not seem to notice or even neglect the child's physical or psychological problems, which significantly affected teacher's work with a particular child. The reason was that parents had different views on the child's development and behaviour. For example, some parents did not observe significant deviations from the average norm in the child's posture, speech or motor skills. Consequently, teachers cannot develop an individual curriculum in time and find the most appropriate teaching approach, because the causes of the problems are not known. In some cases, teachers pointed to the trend to transfer responsibility from the family to the institution: parents tended to insist that there was no problem with the child's behaviour at home, but it was observed only in the institution thus suggesting that the teacher did not have the skills to deal with the child.

The **voluntary involvement** of parents in activities organized by both pre-school institutions and other establishments promotes co-operation between pre-school and the family. More than one-third of the respondents (38 % of parents) have indicated that they followed the pre-school curriculum, 49 % of the respondents did it sometimes, but 12 % – did not follow it. The curriculum also includes various socialization activities involving children, family members and the institution. Almost 50 % of the teachers assessed that the involvement of parents in various activities organized by the pre-school were satisfactory while 43 % of the respondents indicated that it was satisfactory rather than unsatisfactory. There are activities and knowledge that parents through their voluntary involvement can promote at home (e.g., through learning activities together with the child). One quarter of the teachers (25 %) indicated that parents should explain various household issues and everyday peculiarities to their children and they must answer their questions. Teachers (18 %) also mentioned that children themselves should be allowed to explore things of interest; 40 % of teachers indicated that reading fairy tales promotes learning process. Parents in their survey approved that they are happy to explain various everyday situations and answer questions asked by their children (14 %), teach letters and math (13 %), together attend various events such as theatre, concerts, sports games (12 %). Teachers drew attention to the need for parents to develop social skills and abilities and to train the child's independence as much as possible.

The voluntary involvement of parents is aimed at acquiring various social knowledge and skills, however, in pre-school there is a compulsory learning content that the child must acquire. To promote **learning at home**, pre-school should provide information to the family on how to successfully and appropriately promote learning at home. The analysis confirms that pre-school institutions and parents are happy to involve and participate in the implementation of the pre-school curriculum and 36 parents (out of 95) indicated that they had not encountered any problems, however, in some cases parents mention various problems that parents have to face while their child was in the pre-school curriculum (Table 2).

Table 2

Examples of problems that parents have faced while their children have acquired compulsory pre-school curriculum

Problems related to the social environment in pre-school institutions	Problems related to the curriculum in pre-school institutions	Problems related to the child's individual abilities
• Groups formed of children of different ages • Lack of specialists (e.g., speech therapist) in institution • Disturbing behaviour of other children • Teacher's pedagogical skills (lack of skills to teach children and to solve various problem situations) • Unnecessary competition between teachers • Haste of the child	• Insufficient, incorrect assessment by the teacher • Lack of understanding whether child acquires curriculum according to the new competence-based learning • Insufficient information about home works • Requests to provide materials for learning process what actually are not available for parents • Lack of information from teachers on what must be learnt, e.g., after a longer period of illness	• Different skills (literacy, reading) • Individual developmental disorders • Lack of interest in involvement in learning activities outside the pre-school institution • Language barrier in case of children from Russian families • Rapid loss of interest and problems of concentration • Lack of communication: the child does not inform about the work to be done at home, nor does the teacher say it

These issues can be an obstacle to the process of building cooperation between pre-school institutions and families. Based on the obtained data, it can be concluded that parents are involved in various **decisions** that are binding on their children. More than half of parents (63 %) have indicated that they always attended parental meetings organized by the institution or have given an opinion on certain issues, whereas 25 % were involved in decision-making at least once every six months but 10 % – at least once a year.

Every family member is invited to support the educational institution by building family and **community cooperation** outside the institution. Pre-school establishments organize meetings, events, guest lectures, consultations with professionals and other activities in which parents participate, thus supporting their children. The process of cooperation between the two agents can be positive or negative. Teachers in 17 cases (out of 71) indicated that they did not face difficulties in forming and involving parents in joint

out-of-institution cooperation activities (e.g., parents had to prepare the composition of natural materials, collect waste paper, collect natural materials with the child). However, 60 teachers emphasized the difficulties which they faced in organizing and involving parents as parents referred to their lack of spare time and too long working hours. Parents often when arrived to the event, were uninterested and without motivation to involve in activities together with their children. Negotiation with parents is considered a solution in such situations explaining how important parents' participation is for the children.

Assessing the collaboration between parents and pre-school institutions in general, 31 % of teachers indicated that it is satisfactory while 59 % of teachers believed that it is satisfactory rather than unsatisfactory. Parents in their survey referred to unclear information exchange channels (26 %), differences of opinion with other parents (23 %) and occupation with other things (17 %) as the biggest burden or reason for not participating in the joint cooperation process. Teachers named several examples of cooperation that reflected the positive impact of cooperation on a child's development and acquisition of knowledge in preschool. For example, for almost a year after a systematic conversation with a parent, a solution was found to move the child to a special education program. The parents were strongly opposed at first and did not want to cooperate, however, a result was thankful. In other cases, parents participated in joint clean-ups, thematic events, got involved in repairing old shelters, where children can play. Analysing the cooperation from different aspects, according to the results of the survey, the authors conclude that there is a mutual communication between pre-school institutions and the families. Joint pre-school and family cooperation are focused on the result that is in the best interests of the child. Problems can be solved positively through communication, individual approaches and negotiations, which are confirmed by both parents and teachers.

Conclusions

The result of the child's primary socialization in the family, entering the new social environment which is pre-school, reflects, on the one hand, the interaction of parental upbringing style and family norm boundaries, but, on the other hand, the child's personality traits and future development trends. The child's interest in learning and various activities at school is stimulated by interested parents who are motivated to cooperate with the group teacher, subject teachers, administration, social pedagogue, psychologist and other school personnel. Although curriculum developers may want to increase parental involvement, this is only possible if they provide teacher training and time to work with parents.

The research data analysis revealed that pre-school teachers and parents have different understandings of the child's need for parental support so that parents can get involved and promote the acquisition of compulsory pre-school curriculum. In the survey, half of the parents (51 %) pointed out that direct recommendations from the pre-school on learning subject at home (related to formal learning) would be needed, while teachers stressed out that to acquire the compulsory content qualitatively, parents should focus primarily on the child's psychological development and socialization.

Teachers and parents have clear communication channels to fully exchange the necessary information, however, to form collaboration, teachers have difficulties in developing individual curricula in some cases, because parents often withhold or do not provide true information about the child's individual, family or other problems affecting the child what makes it difficult to complete the curriculum. The voluntary involvement of parents in various pre-school activities and practical learning is important for a child in the acquisition of the curriculum. Parents need to contribute in developing various social skills of their children, which is the basis for successful learning of the curriculum. However, parents acknowledge that they lack accessible guidance on how to properly support children in learning compulsory pre-school education at home.

The results of the research reflect the need for parental involvement in establishing cooperation with the community outside the educational institution, its role in the child's development and facilitating the learning of the subject. The study indicates that pre-school institutions have difficulties with such environmental aspects of inclusive education as the lack of access to specialized staff and the environment, while parents emphasize that an individual learning approach is not provided for children with disabilities. All these aspects interact and are closely interlinked, which points to problems in the overall pre-school education system. It was pointed out that municipalities are in many cases

uninterested in increasing capacity and capability of pre-school institutions to solve their issues. Pre-school teachers sometimes face mobbing on the part of parents regarding too high demands.

Further studies can be developed to understand how the pandemic situation has changed and influenced communication and collaboration patterns.

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Understanding the Concept of Sustainable Food Consumption – whether it will Reduce Meat Consumption

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Abstract: Despite the evidence-based health and environment benefits of sustainable diets and the urgent need to change consumption patterns in well-developed countries into plant-based diet, people are reluctant to limit meat consumption. The aim of the study was to examine the attachment to meat consumption in a group of Polish consumers and whether it depends on an understanding of the concept of sustainable food consumption (SFC). The study was carried out using the Computer Assisted Web Interview method on a sample of 199 consumers, who met two criteria of inclusion: age (20 - 65 years old) and not excluding meat from the diet. The questionnaire included a tool to measure the attachment to eating meat in 4 dimensions: hedonism, affinity, entitlement, and dependence. The analysis of the results was carried out in the Statistica software. Pearson Chi-squared test and Student's t-test were performed to investigate the significance of differences between the two variables ($p \leq 0.05$). In the surveyed group only 35 % of respondents interpreted the term of sustainable food consumption correctly and among them there were more people with higher education. Interviewees were rather strongly attached to eating meat and this was firstly due to the belief in human right to eat meat, secondly – taste preferences and hedonism, thirdly – dependence on eating meat. The ethical motives (affinity) were rated lowest, but significantly higher by respondents understanding the concept of sustainable diet. Their opinions on all aspects of attachment to eating meat were more pro-environmental than those of respondents who did not understand the idea (although the differences in the opinions were not statistically significant). Our results indicate the need to implement effective educational programs that will show all benefits of a sustainable diet to provide consumers with reliable knowledge and on this basis influence their attitudes and support them in making healthier and more sustainable choices in the food market.

Keywords: sustainable diet, food, consumption, meat, meat attachment.

Introduction

Growing production and demand for meat are determined by the economic development of the world (Milford et al., 2019; Salter, 2017; Naarod, Tiongco, Scott, 2011; Delagado, 2003), including emerging economies such as China, where the growth rate of meat demand is very high (Food Outlook…, 2020; Liu, Debiltz, 2007). According to FAO (Food and Agriculture Organisation of the United Nations), since the early 1960s, world meat production has increased nearly fivefold and reached 341 million tons in 2018 (Food Outlook…, 2020). The largest increase, almost 16 times over, occurred in the Asian region, where production was 9 million tons in 1961 and reached 144 million tons in 2018. The second region in terms of growth dynamics was South America, with a 7-fold increase, from 7 million tons to 46 million tons respectively in those years. In North America, production has increased almost 3 times, and the smallest, twofold increase was recorded in Europe, from 30 million tons to 64 million tons, which is due, among other factors, to the lowest population growth in this region of the world. The share of other regions in world meat production is currently only 10 %.

In the same period (1961-2017), global meat consumption almost doubled, from 23 to 43 kg/person/year. The highest growth rate was recorded for poultry meat, whose consumption increased 5.3 times, from less than 3 to 15 kg/person. Pig meat consumption was also characterized by an upward trend – the increase was twofold, from 8 to 16 kg/person. The consumption of other types of meat remained at the same level (with a minimal decrease), in the case of bovine meat it was 9 kg/person, in the case of mutton and goat meat – less than 2 kg/person (FAOSTAT, 2020).

This data includes the enormity of processes that occur in the global food production value chain and the cost of this development and the growing consumption of meat has severe environmental and climate implications.

Food production is a major driver of greenhouse gas emissions, water and land use (Aleksandrowicz et al., 2016). The entire global food chain produces about 13.7 giga tonnes of CO_2 equivalent (Poore, Nemecek, 2018). The livestock sector alone is responsible for 8.1 giga tonnes of CO_2 equivalent. Methane released from intestinal fermentation in livestock organisms accounts for half of these emissions, and nitrous oxide and carbon dioxide have an almost equal share of 24 and 26 % respectively (Global Livestock Environmental..., 2018). From an environmental point of view, it is also inefficient to grow cereals for animal feed (Scarborough et al., 2014). Agriculture uses about 70 % of all fresh water resources (Springmann et al., 2018). Food production causes about 32 % of global terrestrial acidification and 78 % of water eutrophication. These emissions change natural ecosystems and reduce environmental biodiversity. All these harmful impacts lead to the crossing of several boundaries in the use of the planet's resources that define a safe space for humanity in the earth system (Campbell et al., 2017).

Stopping these unfavourable processes is currently the most important challenge for international institutions, governments, stakeholders in food systems and food consumers. The changes desired to food systems generate a demand for well-educated specialists, representing ecologically-minded personalities, capable of making appropriate and responsible decisions in competitive conditions of constantly changing environment (Iriste, Katane, 2020). Many countries have already revised dietary guidelines for their populations and these changes are moving towards a sustainable food consumption model (Rejman et al., 2019; Kramer et al., 2017). Sustainable diets have "low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources" (Burlingame, Dernini, 2010). This definition shows the multithreaded nature of the issue as it covers food security, health and well-being, local, seasonal and eco-friendly foods, cultural heritage and skills, equity, and directly related to the environment - biodiversity, ecosystem services and climate (Johnston, Fanzo, Cogill, 2014). The structure of a sustainable diet was developed as part of the international EAT-Lancet Commission initiative (Willett et al., 2019). A sustainable diet is based on plant products, as half the weight of the food consumed during the day should be made up of vegetables and fruits, one third – whole grains, starchy vegetables (roots and tubers) and plant sourced protein (pulses, nuts and seeds), while animal sourced protein – together with meat, fish and eggs less than 5 %. The recommendation to limit the consumption of all types of meat and meat products is included in the dietary guidelines of all medium and highly developed countries (Food-Based Dietary…, 2020; Fischer, Garnett, 2016).

With this in mind, the aim of the study was to examine, in detail, the attachment to meat consumption in the group of Polish consumers in the context of their knowledge and understanding of the concept of SFC and their behaviour, knowledge and opinions related to the implementation of this food consumption model.

Methodology

The survey data was collected using the Computer Assisted Web Interview method and the questionnaire was prepared in Google Form. Two criteria for participation in the study were defined: age of 20 - 65 years and not excluding meat from the diet. The survey was conducted from 12.XII.2019 to 12.I.2020. It was attended by 237 people, however, after verification of the obtained data, 199 questionnaires were accepted for analysis (22 people did not meet the inclusion criteria, 16 questionnaires were found to be missing answers). The sociodemographic characteristics of the study sample are presented in Table 1. The questionnaire included questions concerning knowledge and understanding of the concept of SFC as well as selected behaviours and opinions related to the concept of this consumption model. The Meat Attachment Questionnaire (MAQ) (Graça, Calheiros, Oliveira, 2015) was used to measure attachment to eating meat, containing 19 statements to evaluate adherence to eating meat in 4 categories: hedonism, affinity (compassion for animals), entitlement (human right to eat meat), and dependence (addiction to eating meat). Respondents were also asked about their attitude to the possibility of limiting consumption of meat and preserves. In the questions, a 5-point Likert-type scale was used. Statistical analysis of the

results was carried out using the Statistica software version 13.3. Pearson Chi-square test and Student's t-test were performed to investigate the significance of differences between the two variables. The significance level of $p \leq 0.05$ was adopted.

Table 1

Socio-demographic characteristics of the study sample

Characteristics	Total sample [% (N)] 100.0 (199)	Understanding of the concept SFC	
		correct [% (n)] 34.7% (69)	incorrect [% (n)] 65.3% (130)
Gender(p>0.05)			
Female	81.4 (162)	35.2 (57)	64.8 (105)
Male	18.6 (37)	32.4 (12)	67.6 (25)
Age (years)(p>0.05)			
20 – 35	79.4 (158)	35.4 (56)	64.6 (102)
36 – 45	12.6 (25)	32.0 (8)	68.0 (17)
46 – 55	5.0 (10)	30.0 (3)	70.0 (7)
56 – 65	3.0 (6)	40.0 (2)	60.0 (4)
Size of place of residence (no. of inhabitants) (p<0.05)			
Rural area	24.6 (49)	18.5 (9)	81.6 (40)
Cities up to 200 000	31.7 (63)	33.3 (21)	66.7 (42)
City >200 000	43.7 (87)	55.2 (39)	55.2 (48)
Education (p>0.05)			
High school or lower	50.3 (100)	33.0 (33)	67.0 (67)
Higher education/university	49.7 (99)	36.4 (36)	63.6 (63)

Results and Discussion

More than half of the respondents (52.8 %) declared that the concept of SFC has already been met. In contrast, K. Rejman, B. Kowrygo, W. Laskowski (2015) and A. Szczebyło, K. Rejman, E. Halicka and W. Laskowski (Szczebyło et al., 2020) received such declarations from a smaller percentage of respondents (33-39 %). Statistical analysis (p<0.05) showed differences in the declarations in accordance with respondent education level. Respondents with higher education displayed significantly more affirmative declarations. Nearly 2/3 of respondents with higher education (61.6 %) and 43.6 % with secondary education declared their familiarity with the term of SFC. However, the correct interpretation of the concept 'everyday diet is carried out so as to minimize the influence on the natural environment' was known to far fewer respondents (34.7 %) (Figure 1).
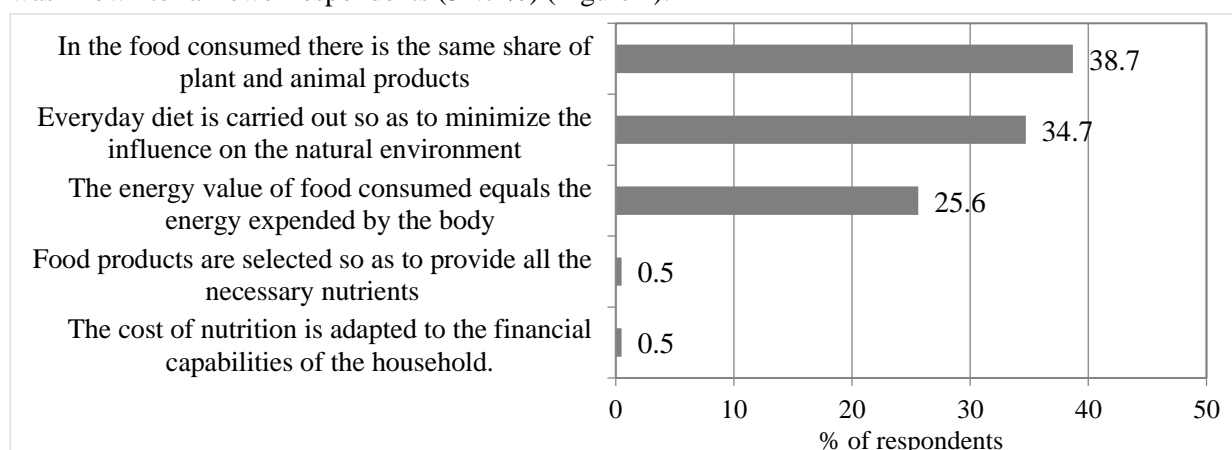

Figure 1. Understanding the concept of sustainable food consumption, % of respondents

In the correct answer, the definition has been deliberately simplified and narrowed down to the environmental dimension, since its fulfilment is crucial to achieve economic and social benefits. The inclusion of all complex aspects of sustainability into the proposed options could have been too suggestive

and draw the respondents' attention straight to this answer. Nearly 40 % of people incorrectly indicated that the term SFC refers to food with the same proportion of plant and animal products. Every fourth respondent confused this concept with the concept of a balanced diet. The low awareness of SFC and the impact of dietary choices on health and the environment among Polish consumers were also confirmed in other countries (Grunert, 2017). Behaviours and opinions in accordance with SFC rules are presented in Table 2.

Table 2

Behaviour, knowledge and opinions related to sustainable food consumption rules

Statements	Score on 5-point Likert-type scale[1]			Opinion of total sample (Mean±SD[2])	Understanding of the SFC concept (Mean±SD)	
	5 + 4	3	2 + 1		correct	incorrect
	% of respondents					
I prefer to buy domestic fruit and vegetables because they were produced close to me	66.4	28.1	5.5	3.92 ±0.91	4.01 ±0.91	3.87 ±0.97
For the same money, I prefer to buy less good quality food than more of average quality	55.7	30.2	14.1	3.65 ±1.08	3.65 ±1.15	3.65 ±1.04
I manage water and energy sparingly when preparing food	59.8	20.1	20.1	3.57 ±1.03	**3.81a ±1.02**	**3.44a ±1.01**
I usually drink tap water and drinks made from tap water	49.2	15.1	35.7	3.20 ±1.42	3.33 ±1.35	3.13 ±1.45
Meat or meat preserves must be present in the daily diet	49.3	17.6	33.1	3.20 ±1.31	**2.83b ±1.37**	**3.39b ±1.24**
I am willing to buy imported fruit and vegetables	33.6	42.2	24.2	3.14 ±0.93	3.20 ±0.90	3.10 ±0.95
The consequence of vegetarian diet is iron deficiency/anaemia	35.2	21.6	43.2	2.90 ±1.34	3.10 ±1.33	2.79 ±1.34
In my household you have to throw away food once-several times a week	42.2	13.1	44.7	2.89 ±1.27	2.71 ±1.24	2.99 ±1.28
I usually buy more food than I need	35.1	16.1	48.8	2.84 ±1.15	2.62 ±1.13	2.95 ±1.15
I buy products with certificate labels, e.g., fair Trade, UTZ, PDO	18.6	28.6	52.8	2.48 ±1.09	2.64 ±1.17	2.40 ±1.04
I do not actually buy water or other beverages in plastic bottles	26.2	8.5	65.3	2.42 ±1.37	2.62 ±1.39	2.32 ±1.35
I buy certified organic products	14.6	27.6	57.8	2.34 ±1.10	2.42 ±1.30	2.30 ±0.99
Food in Poland is cheap	15.1	28.1	56.8	2.31 ±1.13	2.32 ±1.11	2.30 ±1.15

[1] 1-definietly not; 2-rather not; 3-neutral; 4-rather yes, 5-definitely yes; [2]SD – standard deviation;
a, b – values marked with the same letters differ significantly (p<0.05)

Respondents most agreed that they prefer to buy domestic vegetables and fruits because of their proximity to the place of production/local production (mean 3.92, only 5.5 % disagreed or rather disagreed). A. Dąbrowska (2015) and J. Kaczorowska and B. Kowrygo (2016) also found such an attitude in their studies. In our survey, the mean scores above 3.50 were also given to two more statements: 'For the same money, I prefer to buy less good quality food than more of average quality' and 'I manage water and energy sparingly when preparing food'. Respondents with a correct understanding of the SFC concept scored higher economical use of water and energy compared to respondents with no understanding of this concept. On the basis of the national survey examining pro-ecological behaviour of Poles (representative adult sample) K. Wądołowska (2011) stated that the issue of rational water and energy management is essential for 90 and 83 % of respondents respectively. The pro-environmental habit of drinking tap water and tap water drinks was ranked fourth in terms of average rating (3.20). At the same time only 1/4 of the respondents confirmed this behaviour by declaring that they do not actually buy water and beverages in plastic bottles (mean 2.42).

Z. Hu, L.W. Morton, L.R. Mahler (2011) noted that putting tap water above bottled water depends on the perception of quality and safety of tap water. Almost half of the respondents admitted that meat and preserves must be present in their daily diet, and one-third had the opposite opinion. These opinions differed significantly from the understanding of the SFC concept. The mean score of respondents correctly understanding the concept of SFC was lower (as expected) (mean 2.83) compared to respondents with a wrong understanding of the concept (mean 3.39).

Summarizing the results from Table 2, it can be stated that the interviewees respect most of the principles of SFC. Exceptionally, they actually ignore the validity of buying high quality, certified food products, which is contrary to the SFC concept. The quality of food products is a complex process, as consumers judge different quality attributes depending on their individual preferences and other food choice determinants (Grunert, 2005). However, certification labels require some degree of nutritional literacy and are difficult to interpret for many people (HLPE, 2017).

Restricting meat consumption is one of the more urgent SFC rules that must be implemented. The rationale is based on environmental considerations (outlined in the 'Introduction' chapter) and, equally important, on health considerations, dictated by the need to halt the spread of diet-related diseases, including cancer and obesity (Meat, Fish and…, 2018; Bouvard et al., 2015). The third group of arguments are ethical considerations, understood broadly, not only as respect for animals and life.

Interestingly, the results of our research showed that the respondents perceived eating meat in the category of human right to eat meat and hedonism. The highest mean score was obtained by three statements from both categories (Table 3). The hierarchy of factors of attachment to meat is opened by the statement that 'people have the right to eat meat given the position of the human being in the food chain' - 68 % of respondents had such a belief and the mean score was 3.79. More than half of the respondents displayed the opinion that eating meat 'is an unquestionable right of every person' and that it is 'a natural and undisputable practice' in human nutrition. The views on the latter issue differed significantly in the understanding of the SFC concept - unconscious respondents rated this statement higher (mean 3.55 vs 3.10). Hedonic attitude to eating meat by admitting that one is a meat gourmet declared almost 60 % of respondents ('I love meals with meat', 'A good steak is without comparison'). The study group included 35-45 % of respondents who were addicted to eating meat. The limit percentages were those who agreed that 'if they could not eat meat, they would feel bad' and that 'meat is irreplaceable in their diet'. These results reflect the findings of M. Jezewska-Zychowicz (2018), who studied food culture among Polish consumers. It was found that changes in food culture are quite slow, both in relation to methods of food preparation and type of food consumed and traditional food patterns are preferred. All statements (5) concerning respect for animals/empathy were rated lowest by the respondents. They were disagreed with by 63 % of respondents for the statement 'By eating meat I'm reminded of the death and suffering of animals' up to 85 % for 'Meat sickens me'; and this statement received the lowest mean score of 1.61. In addition, the opinions of respondents on each of the statements in the affinity category were statistically different according to understanding of the concept of SFC. As expected, respondents who defined the SFC concept correctly were characterized by higher mean scores compared to respondents who did not understand it correctly.

In the study group there were three attitudes towards the possibility of reducing meat consumption. In the first group, 43.7 % of the respondents were people with an anti-environmental attitude. These respondents did not intend to reduce meat consumption or have never considered such a change. Exactly the same percentage declared pro-environmental attitudes, declaring that they already care about eating smaller amounts of meat or stating that eating small amounts of meat is their habitual behaviour. A small percentage, about 13 %, declared that they were considering reducing meat consumption, but this is not yet supported by any action in this direction.

Table 3

Respondents' opinions on issues concerning attachment to meat consumption

Statements		Score on 5-point Likert-type scale[1]			Opinion of total sample (Mean±SD[2])	Understanding of the SFC concept (Mean±SD[2])	
		5 + 4	3	2 + 1		correct	incorrect
		% of respondents					
E[3]	According to our position in the food chain, we have the right to eat meat	67.9	18.6	13.5	3.79 ±1.16	3.72 ±1.17	3.83 ±1.15
H	I love meals with meat	58.3	28.1	13.6	3.66 ±1.13	3.45 ±1.21	3.77 ±1.08
H	A good steak is without comparison	57.3	26.6	16.1	3.65 ±1.23	3.54 ±1.25	3.71 ±1.21
E	To eat meat is an unquestionable right of every person	51.7	25.6	22.6	3.45 ±1.35	3.30 ±1.41	3.53 ±1.31
E	Eating meat is a natural and undisputable practice	52.3	23.1	24.7	3.40 ±1.26	**3.10e ±1.34**	**3.55e ±1.19**
H	To eat meat is one of the good pleasures in life	44.2	29.1	26.7	3.29 ±1.25	3.13 ±1.24	3.37 ±1.26
D	Meat is irreplaceable in my diet	45.2	17.6	37.2	3.19 ±1.33	3.04 ±1.37	3.26 ±1.31
E	Meat consumption is crucial to my balance	43.2	22.6	34.2	3.11 ±1.33	2.90 ±1.42	3.22 ±1.28
D	I don't picture myself without eating meat regularly	40.7	23.1	36.2	3.07 ±1.40	2.88 ±1.49	3.16 ±1.34
H	I am a big fan of meat	36.7	29.1	34.2	3.01 ±1.29	2.81 ±1.35	3.11 ±1.26
D	If I was forced to stop eating meat I would feel sad	39.2	15.1	45.7	2.94 ±1.46	2.80 ±1.47	3.02 ±1.45
D	If I could not eat meat I would feel weak	35.2	15.6	49.2	2.78 ±1.42	2.55 ±1.36	2.91 ±1.45
H	A full meal is a meal with meat	32.2	20.6	47.2	2.75 ±1.34	2.61 ±1.31	2.82 ±1.36
E	Meat consumption is a natural act of one's affirmation as a human being	18.6	31.2	50.2	2.54 ±1.20	2.36 ±1.16	2.63 ±1.21
A	By eating meat I am reminded of the death and suffering of animals	19.1	18.1	62.8	2.36 ±1.24	**2.69d ±1.24**	**2.20d ±1.21**
A	To eat meat is disrespectful towards life and the environment.	10.0	17.1	72.9	1.93 ±1.05	**2.17b ±1.15**	**1.80b ±0.98**
A	I feel bad when I think of eating meat.	6.5	12.1	81.4	1.82 ±0.98	**2.13a ±1.19**	**1.65a ±0.81**
A	Meat reminds me of diseases	5.6	13.6	80.8	1.77 ±0.93	**2.03c ±1.12**	**1.64c ±0.79**
A	Meat sickens me	4.5	10.6	84.9	1.61 ±0.94	**1.81f ±1.23**	**1.50f ±0.80**

[1]1-strongly disagree; 2-rather disagree; 3-neither yes nor no; 4-rather agree, 5-strongly agree; [2]SD – standard deviation; [3]type of statement: H-hedonism, A-affinity, E-entitlement, D-dependence; a - f – values marked with the same letters differ significantly (p<0.05)

Conclusions

This study investigated the attachment to eating meat in a group of Polish consumers and examined if it is determined by understanding of the sustainable food consumption concept. It also surveyed certain behaviours, opinions and knowledge related to the implementation of this food consumption model in

everyday nutrition. Only one out of three respondents interpreted the concept of SFC correctly, which signifies some progress compared to previous studies. The study group was rather strongly attached to eating meat (MAQ assessment) and this was due to the belief in the superiority of the human species in the food chain and the entitlement to eating meat, followed by hedonism and dependence of eating meat. The ethical motives (affinity) were rated lowest, but significantly higher by respondents understanding the concept of SFC correctly. Their opinions of other aspects of attachment to eating meat were more pro-environmental than those of respondents who did not understand the concept, but the differences were not statistically significant.

Based on an assessment of other SFC-specific consumer behaviours, it was found that respondents exhibited smart consumer behaviours that bring them economic benefits, including not buying certified products. In this case, half of the respondents confirmed their attachment to eating meat.

These can suggest that shifting to a more sustainable diet, with limited meat and preserves, will not be straightforward. It requires intensive promoting plant sources of protein and broad educational activities aimed to make food choices more determined by the factors that create responsible and sustainable eating habits.

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Multimodal Interactive Environments for Art Education of Children with Autism Spectrum Disorder

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Abstract: The emerging of digital technology not only encourages the development of new tools but also changes traditional approaches to solving emerging problems. The sound, music, art and colour that prevailed in the 20th century forms of therapy are being replaced by integrated systems that overcome many of these forms thanks to digital technology. With the increasing number of people with autism spectrum disorder (ASD) in the world, such systems provide new opportunities for the educating of such persons. The article presents an interactive tool for the education of children with ASD using audio, video and computer technologies and assesses its potential impact. The aim of this study is to evaluate an interactive instrument developed for the education of children with ASD. The methodology of qualitative research was applied. Following the objectives of ensuring the interactivity of the process, provoking all perceptions of the subject and developing the subject's ability to respond to the environment a personalized audio-visual environment was created. The study was conducted on one subject and a case study method was used. The particularly rapid development of computer technology has transformed a computer from a device consisting of a keyboard and screen into a device that makes all our senses responsive – sound, image, interactivity and real-life simulation. Interactive video projections further highlight the possibilities of combining these media. The opportunity to manage and to participate in such interactions becomes a great opportunity to learn about the world and make personal contact with it, especially for children with ASD.

Keywords: interactive audio-visual technologies, autism spectrum disorder, sound, pre-school education.

Introduction

Despite the better quality of life and medical care, a better understanding of hygiene conditions, there is a steady increase in the number of children with learning difficulties in the world. According to a study by UNICEF (UNICEF, 2013), about 15 % of the Earth's population suffers from various forms of special educational needs (SEN). One of the fastest growing forms of SEN is autism spectrum disorder (ASD) (Ainscow, Dyson, Weiner, 2013). In 2000, one in 150 ASDs in the world was diagnosed within 3-21 years old people and in 2016 one in 88 of them were already counted (Lai, Lombardo, Baron-Cohen, 2013; Preece, Howley, 2018). This is characterized as a neurological developmental disorder that most affects the development of language, communication, social skills, and behaviour (Powers, 2000; Frith, 2008; O'Connor, 2012; Sokhadze et al., 2016).

One of the essential features of subject's with ASD is a complicated ability to recognize one's own and others' emotional language. This is the basis of empathy and the ability to orientate in the social space which is essential in our lives (Gonsalves, 2010; Santomauro, Sheffield, Sofronoff, 2017). Despite the importance of emotions in social life it has rarely become the object of research in twentieth-century scientific theories and research. The prevailing view was that emotions are secondary and must obey rational thinking (Zajonc, 2000). It is therefore not surprising that there is not much research in this area. The dominant traits that researchers focus on include the relationship of such individuals to: a) the expression of another person and their emotions; b) visual information; c) sound and music; d) audio-visual interactivity and e) identification of all above features in the educational process (Curry, Meyer, McKinney, 2006; Bach, Seifritz, Dolan, 2015; Sokhadze et al., 2016; Nelson, 2012; Stiegler, Davis, 2010; Brockett, Lawton-Shirley, Giencke-Kimball, 2014).

It is argued that the experience and expression of emotions can be learned by communicating through music. However, the emotions evoked by music and life situations have one particularly important difference: in real life emotions always have a very specific reason, and it is quite difficult to say why we experience one or another emotion while listening to music although the mood created by music can

affect our perception of the world (Jolij, Meurs, 2011). Even more questions arise when analysing the relationship between emotions, music and colour that occurs in the case of synaesthesia.

Predictability of the surrounding world is especially important for children with ASD. And the fact that we respond differently to those sounds for which we are prepared and for which we are not prepared makes it even more difficult to orientate in the environment (Bach, Seifritz, Dolan, 2015). Unpredictability is also increased by different ear sensitivities to audio information (Sokhadze et al., 2016; Jeste, Nelson, 2009). Children experiencing ASD often exhibit a distorted relationship with audio information. Some children with ASD believe that sound can hurt so try to protect the ears by covering them with their hands. Their reaction to sound depends on the context and they may be particularly sensitive to specific sounds but not at all responsive to very loud sound (Nelson, 2012; Stiegler, Davis, 2010; Whitehouse, Bishop, 2008). This interferes with the feeling of fullness of acoustic space (Dunn, Gomes, Gravel, 2008) and has a negative effect on language receptivity (Bomba, Pang, 2004). Problems are solved by exploiting the physical properties of sound. The best-known experiments in this field are the TOMATIS and G. Berard methods (Brockett, Lawton-Shirley, Giencke-Kimball, 2014; Berard, Brockett, 2011). There are differences between these methods but it is basically specially modified audio information designed to stimulate certain areas of the brain. Exposure methodologies are also known that attempt to activate the perception of audio information by combining moments of sound and silence (Voisin et al., 2006).

Vision is in some sense always external to our body (emphasizing the separation between subject and object in perception), sound on the contrary resonates through our body, literally embodying the information that it carries on as we vibrate through the world we are surrounded/placed into. That is, listening pulls you into the world, looking separates you from the world (Valle, 2010). The essential factor determining the ability to understand human actions is the ability to combine into one whole the information obtained by all means of perception. Time (sound and music), space (visual space) and semantically similar information facilitate behaviour and the development of behavioural patterns (Meyer, Greenlee, Wuerger, 2011). This synthesis of video and audio material is especially important when interacting with other people. Emotional facial expressions and observation of lip movements greatly facilitate language comprehension. The expression of the speaker's face during communication increases the comprehension of audible language as much as if the interlocutor spoke 15-20 dB louder (Saito et al., 2005).

The advent of computers and research into their use has shown that they have given children with ASD an additional opportunity to interact with peers. Animated everyday objects displayed on a computer screen help people with ASD to learn to distinguish objects by colour, shape and size, and to develop the ability to associate visible images with sounds (Lányi, Tilinger, 2004). A hugely successful cartoon for children with ASD called Transporters was created in 2008 in USA. Its main characters are trains, cars and tractors with images of faces of actors modelling certain emotions embedded in their front. Actor's simulated emotions have become an excellent learning tool for emotional expression for children experiencing ASD (Golan et al., 2010).

The interactive multimodal environment was chosen as the solution of the above-mentioned problem; therefore, the aim of this study is to evaluate an interactive instrument developed for the education of children with ASD.

Methodology

A boy was selected for the study who was diagnosed with mixed specific developmental disorders at the Child Development Centre of Lithuania. Experts assessed the boy's condition as moderate disability. Delayed psychological development, a tendency to withdraw from peers, impulsive anger when the agenda is not going according to a pre-arranged plan, especially a brief concentration of attention, a tendency to resist or protest against the emergence of new things in a familiar environment were observed. The boy's language was limited to 3–5-word sentences. The consents of the kindergarten administration and the child's parents to participate in the experiment were obtained.

To evaluate the possibilities of developing the application of interactive audio-visual technologies in working with a child in 2015 (from September to December). An empirical experimental study was carried out and the case analysis methodology was applied. A questionnaire was prepared for the child's

parents, the analysis of the conclusions of the experts assessing the child's health was performed, and 8 interactive animated projections were prepared. All 16 experimental lessons were filmed.

The questionnaire for parents consisted of 18 open-ended questions. The questionnaire starts with demographic questions. The rest were divided into 4 blocks: I) development of cognitive abilities; II) emotional stability after lessons; III) social initiative; IV) fine motor skills and phonetic abilities. The survey was repeated three times: at the beginning of the research - on September 3, 2015, during the research - on October 29, 2015 and at the end of the study – December 20, 2015.

The conclusions and recommendations of the experts (psychologist, speech therapist, occupational therapist and social workers of the Child Development Centre certified in Lithuania) were analysed.

A multimedia Multisensory Environment methodology (Brooks, 2005) was used to create the experimental research environment, the aim of which was to create an environment in which the visual, auditory, and tactile senses were stimulated. Based on different musical tales (Vicente-Yagüe Jara, Guerrero Ruiz, 2015) eight two types of animated video projections were created. The duration of the projection is about 2 minutes. The first type 4 projections were created based on children's Lithuanian folk songs. They supplement the narrator's text with musical inserts made by various musical instruments. The second type of 4 projections was based on animated images and typical sound examples of various objects that occur in our everyday environment. Animated characters were created using *giff* technology (Bantjes, 2019), which is characterized by movement. This was done to provoke the movements of the subject. All projections were complemented by various coloured interactive symbols (circles of various sizes, images of flower, blossoms and birds). Covering any symbol on his hand, a sound or musical insert characteristic of one of the projection characters sounded.

To accustom the child to various acoustic and visual environments the projections were demonstrated on a variety of surfaces (walls, floors, doors, using two planes in the corners of the room, etc.). The computer program *EyeCon 1.6* and a webcam were used to create the interactivity of the symbols. It made possible to activate the areas of the screen in which the symbols were mentioned. The zones were associated with appropriate audible symbols. Closing a character on the screen by hand activated the screen area for that symbol. In some cases, it was possible to activate several characters at once. In other projections the child was forced to wait for the previously activated symbol to stop sounding and only then could a new one be activated. The faces of the human figures (girl, boy, grandfather) reflected a specific emotional state (joy, sadness, peace, surprise) in harmony with the sounding music. The scheme of creating an interactive environment is presented in Figure 1.

Figure 1. Scheme of creating an interactive environment.

The educational experiment was conducted in a kindergarten, which the boy has been attending since 2015 March. Detailed recommendations how to organize the experimental activities were prepared. Educational activities were organized twice a week. A total of 16 weeks. The recommendations referred to the emphasis on those places of the projections (by repeating them or otherwise drawing the child's attention) where the projection characters were uttered with specific concepts and different styles of pronunciation. Some of the projections used more than one piece of music to reflect a different mood, therefore the boy was trained to perform music and video selection exercises quickly and accurately. By demonstrating projections on different surfaces
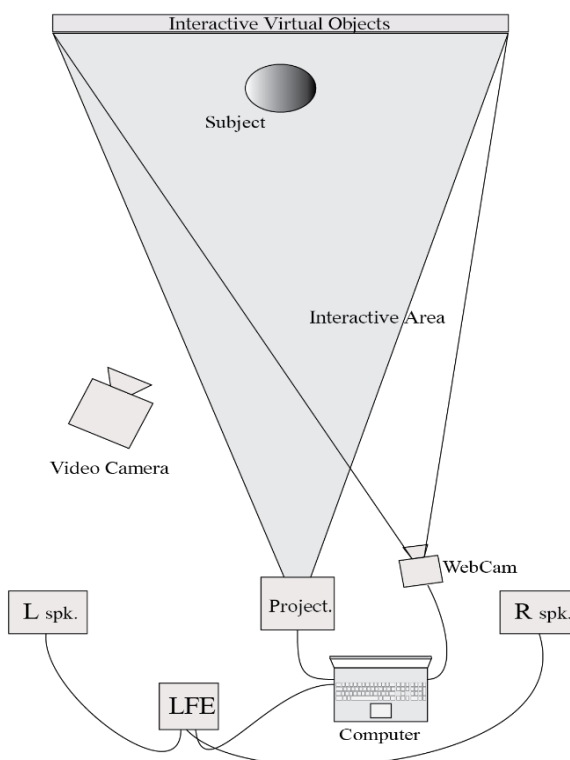
(especially on the floor) the coordination of the child's movements was developed and the predictability of the sequence of actions was taught. This ability was also taught by giving the child the opportunity to choose for themselves when and what audio or video signal should dominate with the help of interactive symbols. It was taught to feel the importance not only of sound but also of moments when no sounds (i.e., silence) (Voisin et al., 2006).

A model of the activities and measures used in the experiment is presented in Figure 2.

To prepare the child for the projection each lesson begins with a reading of a fairy tale. Gradually the characters are introduced, the main feature of them is described by imitating computer-broadcast music or sounds of nature and by analysing pre-prepared drawings depicting different moods. This

Figure 2. A model of an interactive projection with musical tale.

creates a musical tale. After reading and partially playing a musical fairy tale we move on to an interactive projection depicting the same fairy tale. During it the characters are re-introduced their control is evaluated, the audio material related to the characters is tested and the movements of the characters are demonstrated. The whole projection occurs at the sound of a tale text entry.

Each element of the projection: the text of the fairy tale being read, the sounds or music associated with the characters, the animation of the characters can be stopped and repeated at any time. Each lesson takes place in a different environment (in another room or part of it), the projection is demonstrated on a different surface (side walls of the room, corners of the room on two walls, on the door and floor).

A questionnaire survey of the parents of the study child was organized three times: at the beginning of the experiment, at the end of the second month, and at the end of the experiment.

Results and Discussion

To record the course of the experiment as consistently as possible, 16 lessons were filmed (one on each week). This accumulated 320 min. videos (average 20 minutes per lesson). Multimodal transcription methodology (Cowan, 2013) was used for video analysis. 7 most frequently externally monitored behavioural factors and their accounting indicators based on the initial analysis of the video material were identified:

- *process verbalization – m*easured by the number of cases when the subject tries to retell the content of the fairy tale during the projection;
- *voluntary attention and demonstration of a sense of rhythm of the process – m*easured by the number of positive cases; each projection was designed to contain 8 cases in which the subject must demonstrate the ability to maintain attention; this is seen when, at the end of one projection element and the beginning of another the subject tries to wait for the momentary beginning of the new element;
- *confidence and desire to combine elements of the projection process – m*easured in cases where the subject tries to combine visual and audio symbols of different characters;
- *copying singing of characters – m*easured in cases where the subject is trying to sing;
- *coordination of movements* – the ten-point system evaluates the accuracy of the subject's movements in controlling the projection processes;
- *simulation of projection character movements – m*easured by the number of cases;
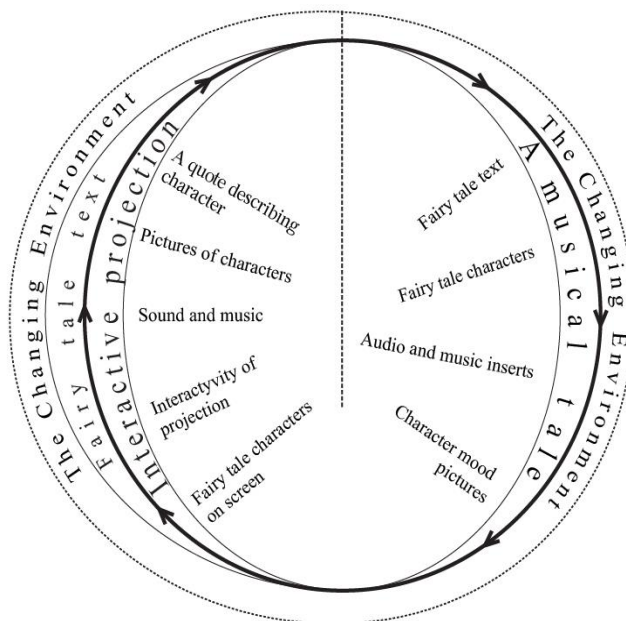- *ability to find and associate a character and its characteristic sound symbols – m*easured by the number of cases.

Analysis of the factors of video material and their changes during the study are presented in Figures 3-9.
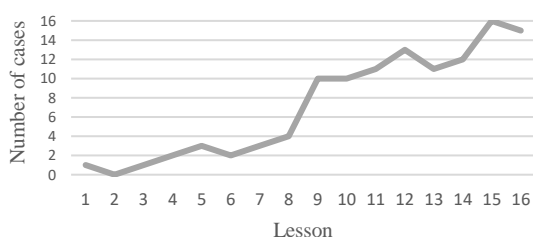

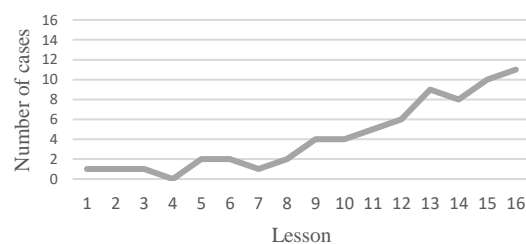Figure 3. Process verbalization.

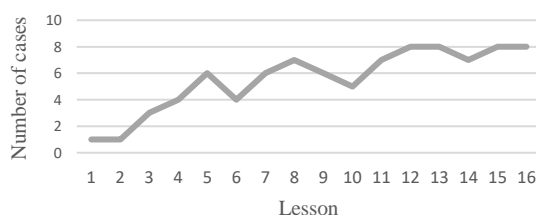Figure 4. Ability to find a character and associate it with sound symbol.

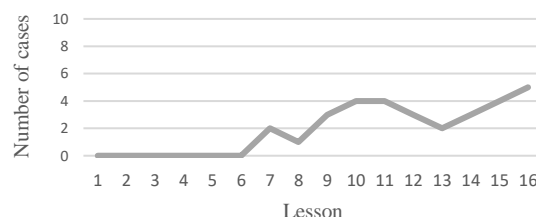Figure 5. Simulation of projection character movements.

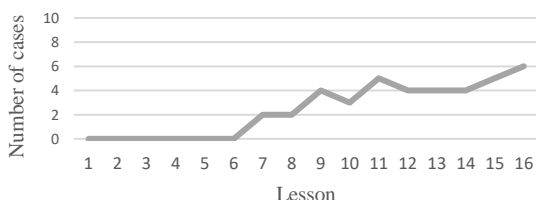Figure 6. Confidence and desire to combine elements of the projection process.

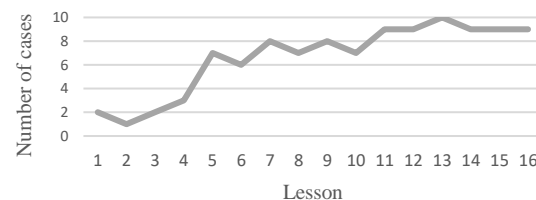Figure 7. Copying singing of characters.

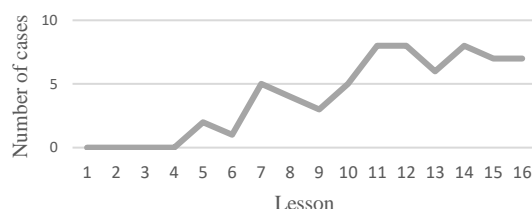Figure 8. Coordination of movements.

Figure 9. Voluntary attention and demonstration of a sense of rhythm.

The analysis of the videos showed that at the beginning of the study the subject had difficulty connecting to the game. There were frequent cases when he left the playing field trying to engage in other activities. Since the fifth week of the study, the number of such objections has decreased significantly. When participating in a musical fairy tale reading or interactive projection activity, the subject increasingly expressed a desire to re-listen to or review material characterizing some of the characters.

From the eleventh week onwards, there was a desire to combine the elements of the projection not as planned. In this way when the story of "Grandfather" (a fairy tale character) sounds, the researcher additionally activated the chirping of the carriage wheel, tried to combine the sounds of the bird's chirping and running water, activating increasingly characters by stopping and restarting the projection. By doing so the subject showed a desire to relate the content presented in the projection to certain structures and demonstrated the basics of creative abilities.

Based on the results of the questionnaire survey of the subject's parents it can be stated that the change in the child's mood has stabilized in the home environment. Although the pronunciation of some words remained irregular the vocabulary clearly expanded. The ability to engage in the same activity for longer and the desire to achieve a result are observed. There were signs of self-planning. Frequent activities are

accompanied by restrained singing and movements that demonstrate the rhythmic pulsation of music. There was a significant decrease in the number of particularly pronounced emotional reactions.

Positive developments in the field of fine motor control and expanded active and passive vocabulary were noted after repeated expert assessments by a psychologist occupational therapist and speech therapist. Irregular interdental pronunciation of some sounds remained but phonemic hearing was improved. The ability to tell from a picture or from own experience has changed positively. According to the occupational therapist the desire to perform all tasks well and completely was observed, the concentration of attention improved. Improved fine motor tasks that require eye-hand coordination skills and finger strength. The recognition of objects similar in colour, shape, and size has improved.

Audio-visual technologies in our daily life gives the opportunity to learner to become a process manager, choosing both the direction and the level of complexity. Because in such activities the audio material confirms or denies the correctness of the choice of visual material and the interactivity of the activity pushes the child into a time frame, urging them to take the next action. It is the development of attention and ability to think abstractly. It is very different from activities at home or in a lesson, when the child receives a specific task and his goal is to find one correct answer. Here the possible outcome of the activity is constantly changing depending on the child's choices.

Conclusions

Audio-visual technology was used in the study in such a way that the experimental environment did not differ significantly from the subject's everyday environment. Although the first steps were quite cautious. The solution to the problems that emerged as the investigation accelerated gained signs of play. At the beginning of the study the experimental process was seen as a phenomenon that must be performed. At the end of the experiment, however, the subject seemed to become part of the game. By trying to combine different visual and aural symbols of different characters he has already demonstrated a desire to create.

The particularly rapid development of computer technology has transformed a computer from a device consisting of a keyboard and screen into a device that makes all our senses responsive – sound, image, interactivity and real-life simulation. Interactive video projections further highlight the possibilities of combining these media. The opportunity to manage and to participate in such interactions becomes a great opportunity to learn about the world and make personal contact with it, especially for children with ASD.

The combination of audio-visual information (audio, video and animation) in video projection is a great opportunity for people with ASD to learn to understand the emotional expression of other people, to develop phonetic hearing and enrich vocabulary. The interactivity of the projections provides an opportunity to develop the coordination of movements.

The experiment did not require particularly large material investments or special training from the researchers and can therefore be easily repeated. Given that similar hardware and software are changing very rapidly it can be expected that the newly performed experiments with interactive projections will reveal the possibilities of educating new individuals with ASD.

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Student Tobacco Use Behaviours: A Qualitative Study of Alternative Tobacco and Nicotine Product Use in Young Adulthood

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Abstract: Non-combustible alternative tobacco products such as tobacco-free nicotine pouches, heated tobacco, and electronic cigarettes (e-cigarettes) marketed as less harmful alternatives to cigarettes as smoking cessation aids are becoming increasingly popular among adolescents and young adults. This age group includes individuals still experimenting with and establishing tobacco use. The aim of the study is to investigate student tobacco use behaviours, particularly novel devices, and alternative products to understand how to decrease tobacco initiation and use among adolescents and young adults. In August 2020, two focus group discussions were organized to obtain information on young people's experience of alternative tobacco and nicotine product use. In each of them, high school students (aged over 18) and students took part. The participants of the focus group discussion were chosen by the "snowball" method. Cessation of smoking and replacing cigarettes with alternative tobacco and nicotine products reduce some of the harmful effects but are not harmless and nicotine addiction remains. By replacing cigarette smoking with the use of tobacco-free nicotine pouches, heated tobacco, or e-cigarettes, one form of nicotine use is being replaced by another. According to the study, young people have no understanding of nicotine addiction and the health risks of using alternative tobacco products. Today's adolescents and young adults often see consumption of tobacco and nicotine products as a mean to construct and project their unique identity.

Keywords: students tobacco use behaviours, alternative tobacco products, university education.

Introduction

Health Behaviour in School-aged Children (HBSC), a World Health Organization collaborative cross-national study show that despite encouraging reductions in tobacco and alcohol use since 2014, levels of current cigarette-smoking and drinking are high, particularly among 15-year-olds (Inchley et al., 2020, 29). In Latvia in 2015 the proportion of regular smokers in the 15-year-old cohort has decreased by 12.1 % and returned to the level of 1995, when 17.0 % of 15-year-olds at that time smoked regularly (ESPAD…, 2016, 9). However, the rapid spread of e-cigarettes and other alternative tobacco and nicotine products among adolescents and young adults is a cause for concern. Many studies show that cigarette use is still the most prevalent (Johnson et al., 2019), but alternate forms of tobacco use are particularly likely in a younger population (El Hajj et al., 2019; Ferrell et al., 2020; Dunbar et al., 2020), youth are replacing some of their cigarette smoking with other means of nicotine delivery – e-cigarettes, heated tobacco, tobacco-free nicotine pouches. Most people believe e-cigarettes to be less harmful than smoking. Previous research shows that younger people are less likely to be realistic about the risks of tobacco products and overly optimistic about their ability to quit using them (Tackett et al., 2020).

Adolescents' smoking, alcohol use and other provocative behaviours are often associated with their desire to integrate into the adult world (Ledina, Lice-Zikmane, 2020). The popularity of electronic nicotine delivery devices (such as e-cigarettes, vape pens, heated tobacco devices) among young people may be related to the perception that vapes are safer than cigarettes, interest in technological innovations containing tobacco, attractiveness for different tastes, vulnerability to peer pressure and attempts to stop smoking cigarettes. Marketing and promotion of e-cigarette devices (Peitsch et al., 2018) try to create a norm that e-cigarettes are desirable and popular, lowering the social risk of using (Marion et al., 2020). The use of these products can lead not only to continued use in adulthood, but also to cigarette smoking in people who have never smoked before.

For today's adolescents and young adults, consumption, including the use of tobacco and nicotine products, is all about showing their unique identity (Helme et al., 2020). Some authors introduce a concept of tobacco customization—the concurrent use of multiple tobacco products is practiced creating personalized tobacco

experience matching lifestyle, culture, values, and addiction levels. "With a range of experiences made possible through an ever-increasing menu of tobacco products, flavours, and novel devices, the current youth culture of customization may also translate to tobacco customization" (Horn, Pearson, Villanti, 2016, 51). These authors explain that ". . . tobacco customization may encompass both experience and products; youth may personalize their experiences (e.g., using products to fit a variety of places and situations) including customizing their products and the ways in which they consume nicotine (e.g., configuring their own e-cigarette or hookah) and using particular products as part of social context (e.g., only using hookah with friends or cigarettes while at a bar's outdoor patio). With all tobacco product options and experiences available to youth, tobacco customization could be explained as the concurrent use of multiple tobacco products to create personalized tobacco experiences" (Horn, Pearson, Villanti, 2016, 54).

Several other studies also confirm that today's adolescents and young people often vary the use of tobacco and nicotine products according to social context and situation (Danielsson et al., 2019). Norwegian researchers point to generational differences in the use of tobacco products. In Norway and Sweden snus (Swedish moist snuff) has been used as a smoking cessation aid by many adult smokers and smokers and ex-smokers comprise most adult snus users. However, this is not true for adolescents, where larger groups of snus users have no or very limited previous tobacco experience. Recent study shows that the current pattern of tobacco use among young tobacco users in Norway seems to be very fragmented with a high occurrence of dual use (Lund, Scheffels, 2016). This indicates that the traditional divide between snus users and smokers may no longer be useful to understand tobacco use among adolescents.

In Finland, the ban on snus sales adopted in 1995 has not prevented individuals from obtaining snus through friends, personal imports, or under-the-counter sources. Results of study in Finland indicate support for the proposition that snus (Swedish moist snuff) experimentation during late adolescence is longitudinally associated with daily cigarette smoking in early adulthood, it might constitute an indicator of the propensity to proceed to regular snus use and initiation of use of other tobacco or nicotine products (Araneda et al., 2020).

Although retailers cannot sell tobacco and nicotine products to minors, products and devices are frequently accessed via social means (e.g., peers, family members) or directly purchased via online or in-person retailers. Adolescents use social sources (relatives, friends, and strangers who purchase on their behalf) more frequently than commercial sources to obtain cigarettes, vapes and other devices (Pepper et al., 2019). The market for tobacco and nicotine products in Latvia is an area where the illicit market has a large share. According to the experts' evaluation 2016 there was a significant excise duty gap on cigarettes in Latvia – 35 % (Jurušs, Šmite-Roķe, Gasūne, 2018). There are problems with the sale of such products, as consumers obtain them illegally, including online, without product quality control and age verification of the user, thus creating tax gaps. One of the factors that encourage young people to take advantage of the illegal market is the significant price differences. The author 's previous research confirms that while selling tobacco products to minors is forbidden, small shop assistants sell and "helpful" adults help adolescent people to buy these products for them (Zobena, Skrastina, 2020).

Even though the tobacco-free nicotine pad is a new product on the Latvian market, its use, especially among adolescents and young adults, is already widespread. In this study tobacco-free nicotine pouches will be called snus because that is what the discussion participants call it. The name "snus" is often used inaccurately. Snus is a traditional Swedish moist powder smokeless tobacco product. Sale of snus is illegal in all European Union countries except for Sweden and Denmark. Some EU countries like Estonia, Latvia allow the sale of tobacco-free nicotine pouches – snus-like products that contain nicotine but no tobacco. Colloquially, this product in Latvia is called snus. Liquid used in electronic cigarettes and heated tobacco in Latvia is a taxable object, but tobacco-free nicotine pouches are not. It creates differences between countries in terms and conditions of marketing and traceability of this product (O'Connell, Kephart, 2020). In Latvia the issue of tobacco-free nicotine pouches is being studied and discussed in depth at the inter-institutional level, therefore other legal restrictions may be imposed in the future.

The culture of tobacco use has changed, and the tobacco use experiences of today's youth are not the same as previous generations' experiences, making tobacco control more challenging: "Despite cigarette smoking restrictions and clean indoor air regulations, by stringing together myriad tobacco and nicotine products, it is possible for youth polytobacco users to use nicotine at school, home, work, and in social

venues, potentially fuelling the odds of nicotine addiction or long-term tobacco use" (Horn, Pearson, Villanti, 2016, 55).

More research is needed to determine how educators' knowledge can help decrease tobacco initiation and use among school-aged children (Baera, Khoussinea, Dobbs, 2020). To increase middle school and high school educators' knowledge about tobacco products particularly novel devices and student tobacco use behaviours, it is important due to the increasing rates of use among adolescents and young adults.

The aim of the study is to investigate student tobacco use behaviours, particularly novel devices, and alternative products to understand how to decrease tobacco initiation and use among adolescents and young adults.

Methodology

The main method of data acquisition used in the study is focus group discussion. In August 2020, two focus group discussions were conducted to obtain information on experience of different – traditional and alternative – tobacco product use among young people, tobacco use patterns and attitudes toward alternative tobacco products. It was planned to invite 8 participants (smokers) and 8 participants tobacco-free pouch users – young adults (age 18-20) – to the discussion for about one and a half hours. The participants of the discussions were warned and agreed to the recording of the discussion in an audio recording. At the beginning of the discussion, it was made clear that the information obtained would be anonymized and used only in aggregate form. The discussion occurred in a free, relaxed atmosphere.

The participants of the focus group discussions were selected using the "snowball" method.

The focus group discussion included questions on how and why young people initiate smoking and use of tobacco-free nicotine pouches and other nicotine containing products. The introductory part of the discussion was devoted to smoking experience and habits – smoking experience, frequency and intensity, motivation and context (addiction, situation, pleasure), choice of tobacco products (price, taste, prestigious brands, advertising) and what other tobacco products have been tried by participants. The concluding part of the discussion focused on the awareness of young people about alternative tobacco products (e-cigarettes, heated tobacco, tobacco-free nicotine pouches).

Results and Discussion

Participants of the focus group discussions were university and high school students, majority of them were 18-21 years old. The first focus group (Table 1) was attended by young cigarette smokers.

Table 1

Participants of the 1st focus group discussion

Participant	Occupation	Smoking history (years)	Smoking intensity
I Female 1	unemployed, former student, plans to resume studies	2-3 years	in the past irregularly, in recent months 3-4 cigarettes a day
I Female 2	university student	4-5 years	smokes irregularly, in companies
I Female 3	high school student	2-3 years	5-10 cigarettes a day
I Male 1	student, works in carpentry during summer vocations	3-4 years	about 10 cigarettes a day
I Male 2	student	3-4 years	about 10 cigarettes a day
I Male 3	car mechanic	4-5 years	7-10 cigarettes a day
I Male 4	student	2-3 years	smokes irregularly in company
I Male 5	student	2-3 years	5-10 cigarettes a day

They have recently reached adulthood and thus can buy and consume tobacco products legally. Participants of the first focus group (8 participants, 5 male and 3 female), discussed their smoking experiences and habits, awareness of and attitudes towards alternative tobacco products, especially tobacco-free nicotine pouches.

The second focus group (Table 2) was attended by tobacco-free nicotine pouch (snus) users (eight participants, five male and four female), they discussed their motivation to choose this product, personal experience of using snus, and experience with using other tobacco products.

Table 2

Participants of the 2nd focus group discussion

Participant	Occupation	Duration of snus use (years)	Tobacco use experience
II Female 1	art school student	2 years	both smoke and use snus
II Female 2	high school student	2 years	previously smoked, now sometimes use IQOS or very rarely smoke cigarettes
II Female 3	arrived from the U.K. on summer vacation	6 months	previously used and still sometimes uses IQOS
II Female 4	student	6 months	switched from smoking to snus
II Male 1	working in a casino	2 years	switched from smoking to snus
II Male 2	project manager	10 years	switched from smoking to snus
II Male 3	student	3 years	switched from smoking to snus
II Male 4	project manager	6 years	have not smoked before, uses both tobacco (snuff) and tobacco-free nicotine pouches

Almost all (except one) participants of both discussions have started using nicotine-containing products by smoking cigarettes. Most of the participants in the discussion were 18-21 years old. For almost all of them **the first smoking experience** was at the age of about 15-16, but they started regularly smoking a few years later, most often – with friends, classmates, co-workers. Participant "I female-3" told: *"I am studying now in my last high school class. And I tried it [smoking] for the first time at the end of elementary school. At the time, it was so very periodic, even from the beginning in the company of friends. However, now, the effect of this quarantine could be that I started smoking a lot, much more . . . I can not imagine my morning without smoking. Now, I have this routine . . . you eat breakfast, and immediately demand is the desire to smoke. I also smoke about 5-10, maybe even more [cigarettes] a day."*

Young people still find themselves in workplaces in situations where smoking is an essential element of informal culture. Participant "I male-3" told: *". . . I studied at a technical school as a car mechanic. I have been smoking since I was 16 years old . . . I have been smoking quite actively all the time since I started. If you work more [smoke more] at work, I started smoking just when I was working . . . Those who smoke, they smoke. Those who do not smoke – they work (smile)."*

Almost all young people who now use tobacco-free nicotine pouches have gained their first nicotine experience from smoking. Only one focus group participant, under the influence of an older brother, has never smoked, now uses both tobacco pouches (snuff) and tobacco-free nicotine pouches.

Summarizing the opinions expressed by the participants of the discussion, it can be concluded that most often adolescents start smoking during high school, together with friends, school, or study mates. Increasingly, young people are confronted with situations where others smoke irregularly or do not smoke at all, but the participants in the discussion have not considered quitting smoking. Participant "I male-4" told: *"An interesting fact . . . I started my studies at Riga Stradins University . . . [among] my study-mates, [there are] very few people who smoke . . . from one faculty [which has] about 60 students, some 5-6 people [smoke], others do not smoke."*

Young people are eager **to try a variety of new tobacco and nicotine products**, both roll-your-own tobacco and a variety of smokeless products, including tobacco-free nicotine pads. Nicotine intake is not always important for young people, especially if a strong addiction has not yet developed. Participant "I male-1" told: *"There have also been attempts to use snus – to place inside the lip . . . in other words, to get nicotine intake . . . It is . . . [something like] chewing tobacco placed inside the lip and thus nicotine is obtained. As if satisfying the need [for nicotine]. And I have tried it too, and I don't see the point at all when I put it inside my lip and something stands there . . . what is the point, it seems? Cigarettes are the solution . . . the process . . . nicotine intake is not so important."*

Young people are very active in trying new products. Very often new products are tested on the recommendation of friends in companies when they offer them to each other. Participant "I male-2" told: *"I have recently given up regular cigarettes and switched to IQOS. Because it does not smell! It does not stink like that, and the process is basically the same, and no big difference."* Participant "I male-5" told: *"I smoke rolling tobacco . . . and I personally like the way it tastes better, and they do not stink as much as cigarettes, but it still has a little more flavour than, for example, IQOS or some electronic device . . . somehow."*

In general, it can be concluded that those young people who prefer smoking daily do not show a special interest in nicotine pouches (both tobacco-containing and tobacco-free). Most young people who smoke cigarettes know about nicotine pouches, but often do not distinguish between tobacco and tobacco-free nicotine pouches. The unpleasant experience of trying tobacco pouches (snuff) discourages from trying tobacco-free nicotine pouches as well.

Users of tobacco-free nicotine pouches often find themselves trying out a variety of other nicotine-containing products in search of the optimal way to comfortably absorb nicotine for their needs – discreetly, quickly, odourless. Participant "II male-1" talked about his experience of using tobacco-free nicotine pouches: *"At first I did not smoke that much . . . then I had a physical need rather than a psychological one, . . . physical need for nicotine only. It is coffee, when I get up in the morning, I need nicotine to function and not be itchy, to think . . . to relax, let's say after school or work, or when I need it at work. Well, yes . . . that is how I started using them. I do not like to smoke, I don't like the smell, but I wanted nicotine. I tried electronic cigarettes, but they did not . . . didn't go to heart. . . . Now I stay with those pouches."* Tobacco-free nicotine pouches correspond to young people's ideas about a stylish, easy-to-use product. Participant "II female-3" told: *"It must be taken into account, well, that nowadays we are in a very big race . . . all in this fast-paced world . . . we value things for convenience, of course, if you go to smoke, it is a process . . . it's like a break, but let's say if you don't want a process, but you need some results, well, then . . . I think people look at how comfortable they are to do something."*

One of the participants of the discussion (uses nicotine pouches for 10 years) told that he has long time purposefully looking for information about nicotine pouches as a product and the opportunity to buy them. Participant "II male-2" told: *"It was long time ago. . . maybe the media at that time . . . [provided information about] what is used by American baseball-players what they place inside the lip . . . and so we found out what it is. We found where to get it. We brought, we tried it . . . Just knew that there is such American tobacco, there is also Swedish . . . and that is how we brought it to Latvia".* The participants of the discussion emphasized that nicotine pouches have a wide choice. Participant "II male-4" told: *"Before the introduction of nicotine pads in Latvia, there was only tobacco. And there was not a large selection of these products. And now that there are nicotine pouches, I like the variety that I can choose, change those strengths, and so on. Just in the past with tobacco I had only one brand, taste, and now I can change all kinds of tastes, types and brands there."* Size of the nicotine pouch is important to another participant in the discussion. Participant "II female-4" told: *"For me, for example, personally, the most important thing is actually the size of the pouch . . . I do not like big ones. . . . Yes, I have small lips . . . So, I really like that there are small pouches, but also not too small."*

Summarizing the part of the discussion about the motivation and habits of using tobacco-free nicotine pouches, it can be concluded that in the choice in favour of using this product for some participants, individual motivation to use something special, to stand out from others, is important. According to the participants of the discussion, the product must meet some special requirements – to be able to combine the use of nicotine with intense sports, to use a product that does not smell, which does not stain teeth, allows to take nicotine quickly and discreetly virtually anywhere. For the participants of the discussion, it is also important that the use of tobacco-free nicotine pouches does not pose a health risk. Quitting smoking and replacing cigarettes with smokeless products (including tobacco-free nicotine pouches) reduce some of the harmful effects, but these products also pose health risks and nicotine addiction remains. The use of tobacco-free nicotine pouches as a means of quitting smoking (and overcoming nicotine dependence by gradually reducing the nicotine dose) was not mentioned by the participants of discussion.

Three participants of discussion smoke cigarettes or use a tobacco heating device in parallel with the use of tobacco-free nicotine pouches, depending on the society in which they are staying at the time.

In the youth environment, social smoking plays an important role, as often a severe nicotine addiction has not yet developed, so the choice of one or another product is determined by the society in which the young person is staying at that time. This confirms the usefulness of **the concept of tobacco customization** for understanding young adult's tobacco use behaviours. The concept of tobacco customization is essential for interpretation of expectations young people associate with consumption of different products. The use of nicotine products meets the desire of young people to customize their products and the ways in which they consume nicotine. Participant "II female-2" told: *"It is more like I use pads when I'm somewhere indoors . . . I do not know . . . I'm lazy to go out somewhere or do something . . . You know how, differently at home when you are just lying-in bed and then you can [take snus] . . . yes. And when you watch a series and you just do not want to pause. It is a much better solution in that sense, yes. Well, sometimes I also want that process - go out to smoke, sit."* Another participant of the discussion "II male-4" emphasized that he is happy to buy various accessories that allow to customize the boxes for storing the pouches, to cool the pouches in the refrigerator: *"I wanted to add more about those accessories, there were mentioned . . . matching lighters and so on . . . there is also a big market for that you can order for yourself. . . custom boxes . . . I remember I had my first black box . . . it was made of metal, screwable, so there was another rubber here, waterproof. . . and I remember . . . I always kept it in the refrigerator so that such a metal case is . . . unrealistically cold. . . Oh, and, yes . . . it is best to use them when they are cold . . . even before going to bed, I take them to the refrigerator, I always put them in the refrigerator so that it is cold in the morning . . .".*

The experience of participants of the discussion shows that **a large part of nicotine products is purchased on the illegal market**. Tobacco-free nicotine pouches are a new product, but legal sales of tobacco pouches are generally banned in Latvia, but many people use them and have a relatively long experience of using them. Participant "II male-4" told: *"Website [where I order pouches] belongs to Latvians, the Latvian company. All buy from them . . . here in Latvia. I either go to pick them up or receive them at the parcel terminal. . . they send me within a day, within two days."* The main reason why tobacco-free nicotine pouches are most often purchased by discussion participants on websites or with friends is price. When ordering on the website in bulk, the price difference is significant, so it is often ordered jointly. Participant "II male-3" told: *"I also buy them from friends . . . in support of the shadow economy (laughs). It is very easy to find people who sell snus banks. . . . This is their full-time job. Of course, [I can buy them] at more adequate prices than in the store."*

In general, participants of the discussion support legal sale of tobacco-free nicotine pouches, Participant "II female-4" told: *"It seems to me that it is better that it is allowed, it is regulated than it is not allowed. People would also use it, but it would not be regulated. It will not be possible to control. It is better to control it than it just is [bought illegally]."*

Conclusions

Most young smokers are convinced that they can control the intensity of smoking, do not think much about the negative consequences of smoking, they have not seriously considered smoking cessation. Interest in new products, which are positioned in the market as less harmful and as a means of quitting smoking, is more often related to the desire to try new things to experiment with new feelings.

In general, other smokeless tobacco products are more attractive to smokers than tobacco-free nicotine pouches. At present, tobacco heating devices are topical, while the interest in e-cigarettes for young people is declining.

By replacing cigarette smoking with the use of tobacco-free nicotine pouches, one form of nicotine use is replaced by another. Young people have no understanding of nicotine addiction and the health risks of using nicotine pouches.

In general, it can be concluded that those young people who prefer smoking daily do not show special interest in nicotine pouches (both tobacco-containing and tobacco-free). Most young people who smoke cigarettes are aware of tobacco-free nicotine pouches, but often do not distinguish between tobacco and tobacco-free nicotine pouches. The disgusting experience of trying tobacco pouches (snuff) discourages them from trying tobacco-free nicotine pads as well.

The first, even negative, experience of using tobacco-free nicotine pouches for young people who use snus did not deter them from trying again. This has been facilitated by the transfer of knowledge and experience within the subculture of tobacco-free nicotine pouch users.

Users of tobacco-free nicotine pouches are aware of the difference between tobacco (snuff) and tobacco-free nicotine pouches. Tobacco-free nicotine pouches are perceived as a higher quality, cleaner and more pleasant product to use.

Some participants practiced use of multiple tobacco products creating personalized tobacco experiences matching lifestyle, culture, values and addiction levels.

Discussion participants usually order tobacco-free nicotine pouches on websites (buy online) or from friends ("buy from hand"), where they can be bought much cheaper than at points of sale in supermarkets, gas stations. Price differences between the legal and illegal markets are significant, so most of the participants in the discussion are already buying snus and snuff from illegal distributors.

Participants believe that if the sale of tobacco-free nicotine pouches is legal and controllable, consumers are confident in the quality of the products. However, if tobacco-free nicotine pouches are banned from being sold legally, users will be able to buy what they want by ordering online or on the black market.

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Design and crafts

Figuratively Semantic Analysis of Works of Art

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Abstract: Topicality of the study is related to the in-depth study of the art of works of Van Gogh, Velázquez and Repin by relating art to the biography of these authors. The aim of the study is to explore the symbolism and the biography of the painters using the examples of analysis from the works of Van Gogh, Velasquez, and Repin and also to determine the conditions that contribute to the awareness of the process of perception and understanding of paintings. The methodology of this study is figuratively symbolic method used with the purpose to compare the plots of the art and to relate them to the life experience of their creators. Results obtained and the most important conclusions: This is important for the author of a painting to convey his/her thoughts and feelings to the viewer. Still, there remains a problem. The author uses the language of the image and symbol, which the viewer needs to reveal. Psychology of art offers two main options for solving this problem. The essence of the first option which is the ability of the painter to direct the viewer's sight. It is called the Dutch approach. The second approach to the analyses of art is called the Italian approach. In this case this is important to understand the symbolism and knowledge gained historically by relating one's art works to the biography of the painter. The authors of this article focus on the second approach by illustrating it with examples of analysis from the works of Van Gogh, Velázquez, and Repin. The results of this study might be of interest for those who are interested in arts and psychology.

Keywords: figuratively symbolic language, painting, creative personality.

Introduction

Today one needs a society which understands its internal hidden values and is oriented to human. Self-esteem and Self-development during all age stages and in all life spheres (Kalēja-Gasparoviča, 2012). Art has one of the leading roles in this process. Art comprises a spiritual heritage of humanity. Every piece of art has two parts: its creator (the artist, the composer and the producer) and the spectator. Therefore, for the psychology of art the main problems are the study of creative personality and peculiarities of spectators', reader's or listener's perception of art. The psychology of art tries to focus on how the archetypical levels of the human psyche are being revealed in art (Kamali, Javdan, 2012; Vygotsky, 1971).

Creative personality and its peculiarities are the object of the study of social psychology. The peculiarities of a perception of a person – the object of the study of cognitive psychology. Therefore, the current study lies on the border of two psychological disciplines that makes this difficult to find ways of dealing with it. The researchers are looking for the best to find relations between personal peculiarities of the artist, the plot and the peculiarities of art. The study of peculiarities of perception of art has particular topicality (Chauhan, 2015). The main difficulty is that the language of the images used by the artist must be translated into the language of words that help to realize the ideas that the author of the painting and what he or she wanted to convey to the viewer. For this, knowledge of symbolism of the cultural and historical context is needed with which the plot is connected (Makarevičs, 2017). One of the main features of perception is its awareness. Thus, the purpose of our work is to explore the symbolism and the biography of the painters using the examples of analysis from the works of Van Gogh, Velasquez, and Repin and also to determine the conditions that contribute to the awareness of the process of perception and understanding of paintings.

Methodology

This study applied the method of figurative language for the symbolic analysis of paintings. The spatial, colour, subject symbolism and a symbolism of numbers were analysed for this study.

The analysis of spatial symbolism is based on the symbolism of the cross (Adamcik, 2014). One can illustrate their ideas with the help of a sheet of paper symbolizing a life of a person. In this case, the lower

left corner will be associated with the beginning of human life, and the upper right - with the completion of the earthly path. Each segment of a paper is associated with primary elements. Lower left segment – with water. Upper left segment – with air. Upper right segment – with fire. Human life is determined by the symbolism of water. The goals of life are associated with the symbolism of fire. Hence, the ambiguity lies in the interpretation of these symbols. The symbolism of space is associated with the symbolism of colour. Each of the primary elements has its own colour. The lower left spatial quadrant (water) is coloured blue. Left upper (air) – in yellow. The lower right (ground) – in green. Upper right (fire) – in red. The symbolism of space is also associated with the levels of the psyche. The unconscious symbolizes the lower part of the supposed living space, represented in our example by a sheet of paper. The upper part – the consciousness and the divine component of the essence of a person.

Ideas about the connection between the symbolism of colour and the essential foundations of human life were interpreted by the Swiss scientist, one of the founders of colour psychology, M. Lüscher (Lüscher, 1985), who also proposed his theory of personality typology. It is based on the fact that there are four types of human behaviour. Each of these types of behaviour symbolizes a specific colour. Red is the sexually active type. Yellow – a playful, waiting type that needs support in life. Blue is a calm and rational type. Green – feeling one's vitality, but not inclined to spend it on trifles. This typology, as well as the concept of colour symbolism, which is presented in his work "Four-coloured man" (Lüscher, 2005), the authors use in the analysis of paintings of various historical eras.

For interpretation of subject symbolism, as well as the symbolism of numbers, information was used both in reference books (Hall, 2014), and as a form of specific study of artistic works (Sturgis, Clayson, 2000). The colour symbolism is also studied in connection with the physical characteristics of the colour; it recognizes the existence of a particular language of colour, which is used in different cultures (Gage, 2000).

Among the works devoted to the role of the symbol in the understanding of the idea of a pictorial work, the authors would like to mention as an example the study of M. Battistini. She notes that in previous centuries, symbols were widely used in painting and were understood by the audience. Today, the skill of symbolic reading of the picture is largely lost (Battistini, 2005).

Results and discussion

The Methods of Analysis of the Characteristics of Understanding of Painting

Realistic art

Various trends in the perception of painting were formulated by the American researcher S. Alpers. She notes that understand European painting this is necessary to know that two traditions were formed in the seventeenth century. One can be conditionally called Italian, the other Danish (Alpers, 1984). According to the author, the Italians read the picture. Thus, they understood its meaning. The Dutch are gazing at the picture. This leads to two trends in the composition of the plots of paintings: the management of perception and the management of meanings. The first trend can be illustrated by Giorgione's *Castelfranco Madonna*, where the semantic lines display the main character (Giorgione, 1503).

As for the second trend L. Kok offer advice on the perception of artworks and, at the same time, knowledge is ignored, this is the advice of specialists who are latently committed to the Danish tradition of understanding artwork (Kok, 2018). To read the picture requires knowledge. This knowledge, besides knowledge of symbolism, concerns the understanding of the events that formed the basis of the plot, as well as the author's personal life experience (Solso, 2003). To understand the paintings, this is important not only to get acquainted with such art criticism works as a versatile study of historical painting traditions of L. Rideal (Rideal, 2015), or the provision of ready-made recommendations for understanding painting.

First of all, let us explore the works of Van Gogh, R. Huyghe researcher in the field of colour psychology and the creator of the colour psychological history of European painting, notes that knowing that his Ego was coloured yellow helps to understand his work (Huyghe, 1967). This remark by R. Huyghe does not contradict with M. Lüscher's assertion that among the four types of behaviour there is a yellow type. The use of the terminology of colour psychologists, one can note that the conscious and anxious yellow Ego of Vincent Van Gogh was balanced by the desire of the blue unconscious for peace. Therefore, in the most famous paintings of the author uses yellow and blue colours. The tendencies of interaction between yellow and blue behavioural tendencies were caught by the English film director R. Altman. *Vincent &*

Theo is a 1990 biographical drama film about the Dutch painter Vincent van Gogh (1853-1890) and his brother an art dealer Theo (1857–1891). In his film there are several episodes when Van Gogh can be seen standing in front of the easel. And on a piece of paper, it is visible either the contacting blue and yellow colours, or there is a green colour between them (Altman, 1990). The touch of blue and yellow symbolizes the fact that in the soul of Vincent van Gogh there is peace and tranquillity. The invasion of the green indicates that anxiety is settled in his soul (Makarevičs, 2009). From all works of the author the greatest interest for the psychological analysis causes his last picture "*Wheatfield and Crows*" (Van Gogh, 1890). The picture shows the road going nowhere. It ends in that spatial quadrant, which experts in the field of symbolism of space call a waiting room. Finding the life line in this quadrant (and the road is the actual life line of the author) means the loss of the meaning of his earthly existence. Birds are transcendental symbols. It doesn't matter if they fly away or arrive, which art critics usually pay attention to. They are located on the border of the earthly life of a human being, indicated by the symbolism of space. Here it is a symbol of liberation of the soul from earthly suffering. In the picture, the blue colour touches the yellow field of ripened wheat, the symbol for the realization of the idea of spring. Only the sky is unusually dark blue. The analysis of the elements of the last picture of Van Gogh leads to the idea that here he sums up his creative life and unrealized personal life. In life, he did not receive the main thing – the recognition of his work. This seems that by this picture, he tried to explain his decision to die.

For the figurative and symbolic analysis very interesting is the picture of D. Velázquez: "*Christ in the House of Martha and Mary*" (Velázquez, 1618). The piece of art represents the relationship of two women, elderly and young, who are located in that part of the house where the food is being cooked. The second is located in the light, unlike the first one who is in the living space of the room. Following the logic of the symbolism of space, one can note that what is happening on the left side of the figure is associated with the present. Second, the right side is associated with the future. In the second part, The Christ speaks with two women – Martha and Maria. At the same time, for the viewer it is not important which of them is Martha, and who is Maria. This is possible that the image of Martha is duplicated in the present and future. The analysis of the spatial and object symbolism of the picture gives us the key to the artist's intention. A woman faces a difficult choice: to follow the traditional requirements for female behaviour. An elderly woman who is in that part of the picture that symbolizes the past, or to choose a spiritual path of development, to become the bearer of spiritual traditions. This will require to complete change of one's usual life, to start it from scratch "ab ovo," as the Latins said.
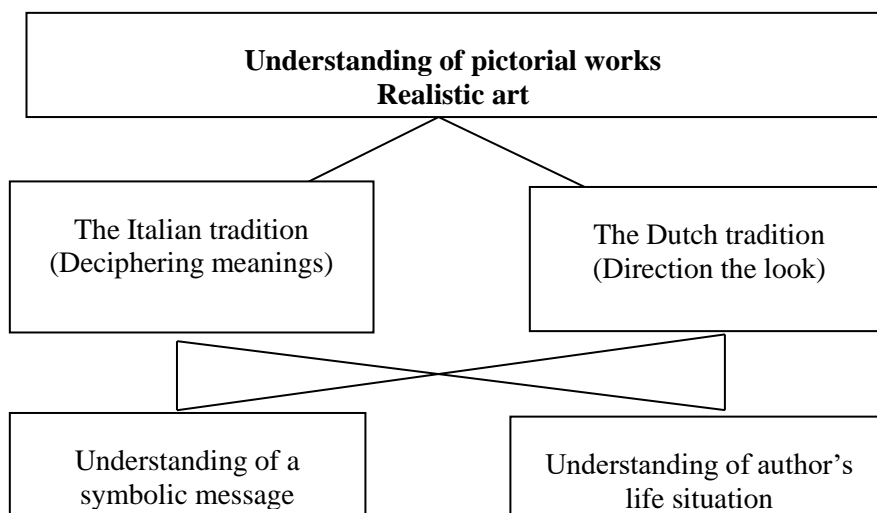
Figure 1. An algorithm for understanding realistic painting.

The image symbolic analysis allows to go for a deeper understanding of the work of the great Russian artist Ilya Repin. Out of all his works, one can single out three works that are associated with his interpretation of the socio-political life of Russia in the second half of the XIX and early XX centuries. These are as following: "*Barge haulers on the Volga*" (Repin, 1870–1873), "*What space!*" (Repin, 1903) and "*Demonstration on October, 17, 1905*" (Repin, 1906). The first picture reflects the technical backwardness of Russia: barge haulers are pulling it into the past. There are no bright colours. However, there are those among the faces of barge haulers that can change the situation. The picture "*What space!*"

depicts a turquoise wave and high-school students who rejoice in its appearance. The turquoise wave coming from the future is the expectation of fulfilling hopes for a change in social life. Actors of these changes should be educated young people. But the wave is an element that can not only bring with it the wind of freedom, but also destroy it.

Intuition does not fail the author. The revolution of 1905, which occurred in Russia, did not lead to the desired changes. Referring to the third picture of Repin that depicts jubilant people, in the right outer corner there is a sloppy large red spot. Unlike jubilant people, Repin understands how revolutions end. Figure 1. presents a diagram of the analysis of realistic paintings, which summarizes the information mentioned above.

Abstract painting.

Now the authors will analyse abstract painting. As an example, consider the work of one of the most famous abstract artists Mark Rothko.

Mark Rothko (Markus Rotkovich) was born in the city of Dvinsk (modern Daugavpils, which is located in the southeast of the Republic of Latvia). At the age of ten, he emigrated with his parents to the United States. There are three periods that can be distinguished in his work: the period of realistic painting, the period of transition from realistic to abstract painting (the surreal stage of creativity) and the period of abstract painting.

In Rothko's homeland, in Daugavpils, in 2013 the Art Center was established as his museum and gallery of modern art. To understand the abstract works of the artist, first of all, this is necessary to consider the first period of his work, or the period of realistic painting. However, in the beginning – a small digression.

In 2003, in Daugavpils the international scientific conference was devoted to Rothko's creativity. It was attended by the children of the artist: daughter Kate and son Christopher. Subsequently, with their permission, computer copies of several abstract works of the painter, as well as the originals of some of his early works, were delivered to the city's museum. Among these early works, one stood out particularly, the plot of which was different from the plots of other paintings. It depicted a deserted city street. This street ran diagonally from the lower left to the upper right and ended with a cliff. Along the street, on both sides, there were high walls. There were no doors in these walls. On the sidewalk, near the wall, on the right side of the street, stood a lonely man. Along the street, towards him, a car with armed people was passing by. This car occupied the entire width of the street.

This picture was soon replaced by others. According to the agreement with the children of Rothko, the exposition is constantly updated. Unfortunately, neither the name nor the year of the picture was recorded. Subsequent searches in catalogues and on the Internet have also failed. The copyright holders did not give it great artistic value. Therefore, they sent it on such a risky journey across the ocean to an unfamiliar country. However, this picture can explain a lot of the work of Mark Rothko.

In the early period of Rothko's work, others paintings differed in plot, but were close in meaning to the picture. Let's consider two of them: "*Street scene*" painted in 1937 (Rothko, 1937). Actually, the street occupies the fourth part of the picture and is located in its right part. The remaining three quarters depict a type of obstacle. Something remotely resembling ancient Greek buildings. The street in the upper right corner of the picture abruptly goes down and breaks off at an obstacle. There is a small black gap between the street and the obstacle.

The third picture is called "*Entrance to the Subway*" (Rothko, 1938). It was written in 1938. The painting shows a closed space. Four columns divide the space into four unequal parts. Two columns to the right of the viewer merge with each other. The columns are painted blue and pale yellow. The border between the colours is clear. The picture depicts five characters. All of them are in the central part of the picture, limited by columns to the left and right. Almost all of them (except for one character) are dressed so that the colour of their clothes matches the colour of the interior. Three of these characters stand in a wall opening on a dark brown background (Breslin, 1993).

Two go down the stairs. Moreover, only the beginning of the descent is visible and it is not known what is at its end. One of the characters who descend is dressed in the same pale-yellow robes as those standing

upstairs in the opening of the wall. The clothes of the second person are painted in a pale red colour. The viewer does not see the faces of the characters. Instead of faces there are yellow spots without any details.

The wall in the background is painted pink. On the left side of the wall, one of its fragments is painted black. Behind the backs of the characters are standing in the opening of the wall, a closed door is visible.

Comparison of the composition of each of these three paintings, allows to conclude that the movement in them occurs along the diagonal going from the upper right corner to the lower left. The direction of movement is shown in Figure 2.

Figure 2. Direction of movement in the Rothko paintings that are selected for analysis.

According to the symbolism of space, the past is located in its left part, the present is in the middle part, and the future is in the right. The line of life goes from the lower left to the upper right. The direction of movement in Rothko's paintings is opposite to the line of life. This can mean either that the characters in the paintings have no future, or that in the future there is something that poses a danger to the present.

The plot of the first picture called "*Street Scene*" (Rothko, 1937) illustrates the words: *The connection of time has been broken*. The gap in time here is physically depicted – as a black abyss between the characters of the picture and the stable object located to the left.

The characters of the picture would like to return at a time when the world was stable, reliable and predictable. However, the situation in the world has changed. The destabilization of the situation in the world (time gap) is growing. The careless characters of the picture do not notice this and do not realize it, and, therefore, his compatriots Rothko.

In the work "*Entrance to the Subway*" (Rothko, 1938), the time boundaries of being are clearly marked. To the left of the column is the past, in the centre is the present, to the right of the column is the future. All characters in the picture are in the present. They face a choice. You can open the door behind. However, what is beyond this door is unknown. One flees from the present to a world connected with the past. This flight and this choice are associated with uncertainty and does not imply the achievement of the expected result (it was seen only the beginning of this path).

Thus, the characters are in a situation of choice without choice. However, they do not realize the danger of a situation in which any choice does not imply their existence in the future (characters have colour spots instead of faces).

The anticipation of a catastrophe is threatening the world, which was manifested in the previous two scenes as a premonition of impending disaster materializes in the third, with a street that is impossible to leave, since there are no exits, and a truck with the military. The prerequisites for war have been created – the truck is moving from the future to the present. And there is no way for an ordinary person to escape from an impending catastrophe.

Rothko's prediction came true. The catastrophe, called World War II (1939-1945) claimed tens of millions of lives, and thousands of prosperous cities and villages were destroyed. The war also affected Rothko a lot. He was shocked by all those events. Why is the person capable of such cruelties?

What is hidden in the deepest parts of his soul? He seeks the answer to this question in the psychoanalytic works of S. Freud (1989) and C.G. Jung (2003). The solutions are found in this way, as well as his own understanding of the essence of the soul of person which he is trying to translate into paintings. Realistic painting is not suitable for these purposes. This is the transition of Rothko into abstract painting.

His work is difficult, sometimes impossible to interpret using words. Words are direct. They do not convey the whole range of meanings revealed in his paintings. Nevertheless, authors will try to do this. Authors will analyse the content of some paintings, guided by the symbols of space, where its lower part symbolizes the unconscious person, and the upper – the conscious part of the psyche.

Let's consider the relationship of black and red in the paintings of the master. Red is the colour of the targeted activity. Activity as a form of manifestation of human energy arises in the depths of the unconscious (*Black, Red and Black* and a number of other paintings on this subject) (Rothko, 1968). This activity manifests itself as pure energy. This energy can be directed to various purposes. At the same time, goals can be both creative (*Ochre and Red on Red*) (Rothko, 1954), and destructive *(Black and Orange on Red)* (Rothko, *1*962).

Studying the emotional manifestations of the human soul, he first of all was engaged in the understanding of his own soul. The author of Rothko's biography, J. Breslin, notes that the painting of the next picture was quick. However, before starting this work, the artist spent his days in meditation (Breslin, 1993). Talented artists feel the pulse of time. This is manifested in their works.

In 1962, the Caribbean or Cuban (Cuban missile crisis) crisis occurred. The world was on the brink of nuclear war. Humanity, like before the Second World War, was surrounded by an atmosphere of fear. Doctor of psychology, Professor V. King from the USA reported about those times as very scary: "We built bomb shelters and prepared for war," she said. V. King is a specialist in the field of psychosynthesis. In this direction, an important role belongs to the work with symbols (King, 2001).

Rothko had a deep feeling for these events. As a result, his view of his own painting changes. The space of the picture is no longer split into colour fragments and becomes monophonic. Increasingly, the black colour begins to dominate the metaphysical colour of the Cosmos. As noted by I.O. Ignatov, "the previously accumulated experience of portraying anxiety, fear or alienation prompted Rothko to attempt to convey the tragedy of human existence at a more generalized level" (Ignatov, 2013).

Through colour the artist tried to unravel the secrets of the human soul. It is not known how he succeeded. By the end of his life, he seemed to understand that the knowledge of the human soul is impossible without knowing the secrets of the universe, since the human soul is part of the metaphysical Cosmos.

You can feel the metaphysics of Rothko's paintings, left alone with the image. One of the students of these lines works in the master's program "Arts". Some time ago, the student was left alone with the work of his choice. In the hall where the paintings were exhibited, the lights turned off, and the respondent tried for 30 minutes to "feel/understand" the work.

The associations that were born during this time were fixed. The reactions were different. Cases were recorded when the respondent could not stand the time interval of 30 minutes and began to cry. On the other hand, students noted in the reports that they began to understand much better the artist's work. Here is a fragment of one of these reports. Its author is the prospective master of Arts Evita Kleina: "*There are times when we feel confused or unaware of it. Emotions are expressed in words, liberates us. How to access one's hidden emotions? The answer is: through artwork. The search on the internet for many paintings by Mark Rothko is possible (those with only colour spaces and without images). We intuitively select the one that describes the feeling of the moment best of all. With the eyes, it is often much easier to 'find' the right words than with the mind. Indulge in the message that the colours tell you. And now, write down everything that comes to mind on a piece of paper. You will be amazed at how many relationships you can draw from your newly written and personal life. The written message contains all your concerns, suspicions, joy or anxiety. All I have to do is decipher it by asking myself how each written word fits into my life; where I have heard it before; why do I express my emotions precisely with this word or image. All the answers are within us! All the answers are in the artwork*". (The report is stored in the authors' archive).

Figure 3. The work of students with the paintings by Rothko.

The process of students' work with Rothko's paintings is illustrated in Figure 3.

Rothko's works have aesthetic value. As N. Azarenko notes, whether he wanted to or not, he managed to find combinations of shades that are valuable on their own, in their minimalism and purity, regardless of the meaning that he put into them (Azarenko, 2017).
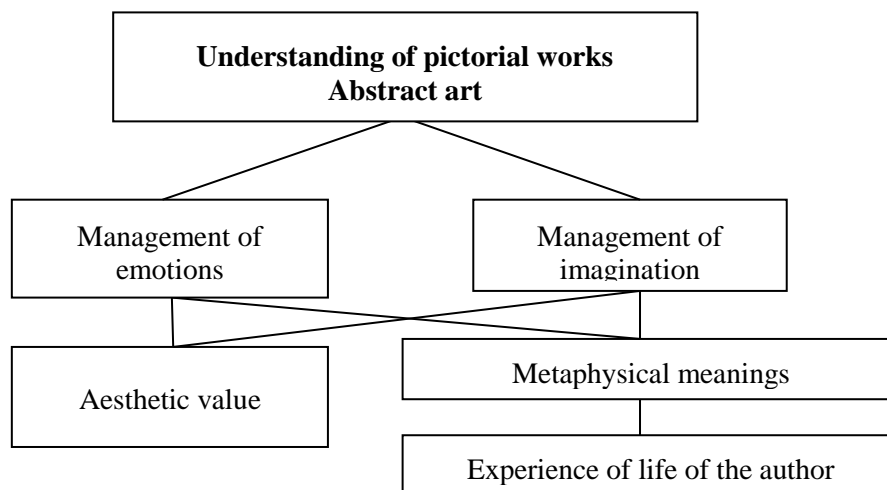
Figure 4. The algorithm for understanding abstract paintings.

Summarizing the above said, we will present the algorithm of analysis of abstract products. Figure 4 illustrates this point of view.

Cinema discourse

The principles of figuratively semantic analysis can also be applied to cinematic works. The main difficulty here is that films in which their authors use a symbolic language rarely appear on the screen.

We have already mentioned in the article about the Robert Altman's film "Vincent and Theo", where the author uses spatial symbolism, as well as the symbolism of objects and symbolism of colour. This group of films includes the work of director Peter Greenaway. In some of his films, he uses the symbolism of numbers (Altman, 1990). Without knowledge of symbolism, such films are difficult, and sometimes impossible to understand.

This film includes the work of Kenneth Branagh's director Frankenstein (Branagh, 1994). The plot is based on the novel of the same name by M. Shelley. The novel is about a young talented scientist Victor Frankenstein. He was very attached to his mother. But the mother suddenly dies. Shocked by this, Victor decides to devote his career to solving the riddles of life and death. Experimenting with the bodies of dead people, he creates a creature that he manages to revive. However, this creature is aggressive and begins to hunt people close to Frankenstein (Shelley, 2008).

Movie specialist screenwriter S. Lady and F. Darabont and actor and director K. Branagh used this plot, but they put different meanings into it. This is a psychoanalytic study of the human unconscious, the essence of which becomes clear when we manage to decipher the symbolism used in the film. (Branagh, 1994).

Art historians do not see this symbolism, so their analysis of the film is superficial. K. O'Shea compares the plots of the novel and the film and discusses about the appropriateness of certain deviations from the plot lines of the novel (O'Shea, 2019). The search for the meaning of the film lies in a completely different system.

As W.E. Smithe notes such diverse traditions as behaviourism, psychoanalysis, and modern computational psychology or information processing psychology support a certain view of symbolism. Psychoanalysis was borrowed from a completely different tradition in the study of symbols. This tradition emphasizes the mythological and metaphorical aspects of symbolism (Smithe, 1984). This tradition is continued by the authors of the film Frankenstein.

This film about the Oedipus complex, which, according to classical psychoanalysts, is the central formation of the personality unconscious at an early age. According to S. Freud (1989), the Oedipus complex manifests itself in an unconscious love for a parent of the opposite sex and the desire to get rid of an opponent – a parent of the same sex as the child. These childhood experiences can persist in an unconscious person and affect his life choices. The film begins with the appearance of Frankenstein family home. Its walls are painted red (with thin yellow stripes). The roof – without any other colour accents is blue. From the point of view of colour psychology, blue symbolizes the male principle (although it has other meanings: the symbolism is ambiguous).

Red is the feminine principle. However, the characters at the beginning of the movie are dressed very differently. Victor's mother is in blue. Victor's shirt is blue. In contrast, the father at the ball is dressed in red clothes.

In this house there are two parties – blue (the mother, as evidenced by the colouring of that part of the exterior of the house, which protects from storms and rains) and red (the father subordinate to her). Victor is very attached to his mother. What favours the formation of the Oedipus complex?

But then something irreparable happens. During the childbirth, the mother dies. In desperation, Victor decides to devote his life to solving the problem of immortality. And he succeeds. The creature collected from the parts of the bodies of the people of the lower classes manages to revive. It begins to live its own life. In the film, the creature has no name. In A. Freud's psychoanalytic theory, It is a part of the human psyche that is completely unconscious. It has no moral limitations. But its manifestations depend on the social environment.

The creature goes on a journey. It rises to the mountains. Hera is a symbol of the Self according to C.G. Jung (Jung et al., 1964). The path to the Self begins with the knowledge of the personal unconscious. Settling in a peasant hut, he seeks to master cultural skills. In it there is a need to be accepted into the community of these people, to find friends in them. However, his first attempt to get closer to these people was met extremely aggressively that activated his destructive forces.

These episodes of the film directly illustrate the psychoanalytic propositions. If a child grows up in a favourable psychological atmosphere, the Oedipus complex disappears. Moreover, it can serve as a source of humane and creative human activity. Aggressive social environment strengthens the destructive forces that this complex contains. By recalling the paintings of Rothko, the energy that appears in the depths of the human psyche is neutral. However. it manifests itself in human actions and can acquire both a constructive and a destructive orientation.

The creature starts from the mountains and begins its destructive activity. He sequentially kills the younger brother of Victor, his father and his bride, who has just become his wife. Why is he doing this?

Because he is a part of the personality of Victor himself, her deep, unconscious structures. It fulfils Victor's secret and unconscious desires. The younger brother died because he became the involuntary killer of his mother, the only woman Victor loved. Father was his rival. The bride was not his choice and it was his mother's choice.

And here we come to the answer to the main question of our study. What did the authors want to say on their film (Branagh, 1994)? But, before answering this question, we consider the features of the appearance of the two characters in the picture.

This is it and the resurrected bride wife of Victor Frankenstein, Elizabeth. They say that the eyes are a mirror of the soul. Therefore, the resurrected man has no left eye. The resurrected Elizabeth is right.

The left eye symbolizes Anima, the feminine in the soul of a man. Anima balances the natural aggressiveness of a man. The absence of a woman's right eye means the absence of Animus in her soul.

The Animus, or Logos, balances the naturally based feminine emotional sensitivity. In the absence of Animus, a woman can burn in the fire her feelings. Which literally happens in the film with Elizabeth.

The ancient sages claimed that the like is created by the like. A human being is not perfect. It is impossible to know oneself completely. By artificially creating one's own kind, human beings are not given to know what part of their-self they give to these creatures. Only nature possesses perfection, or God. The film has a symbol of the cross. However, this is not a Christian cross.

Conclusions

Symbolism is ambiguous. Originating in the early historical period, it can change under the influence of the characteristics of cultural representations of an ethnos or a group of ethnos that are close in their views.

Moreover, the individual experience of a person can also change the idea of the essence of the content of a symbol. For example, white colour in Latvian and European culture as one of its meanings has the

beginning of a new stage of life. For the residents of many countries of the Muslim East – this colour of mourning, that is, the colour of the end of life's journey. However, here it should be noted that for a Muslim the end of one life's journey does not mean the existential death. The existence continues at another existential level.

If a child was sick as a child, and the doctor often came to him/her in a white dress and gave unpleasant injections, then he/she may have a strong connection between white and the feeling of pain. The meaning of paintings is based on an archetypal (colour) or culturally related symbolism (subject). However, as it was said at the beginning of the article, one of the most important properties of perception is awareness.

This means that knowledge of certain historical conditions that contributed to the emergence of the picture, to the understanding of what is depicted in the picture, as well as an orientation in the experiences of the artist himself, which could be reflected in the plot of his work, can help to get closer to the understanding of those ideas that the author would like to bring to the mind of the viewer.

For the psychology of art, the main problems are the study of creative personality and peculiarities of spectators', readers' or listeners' perception of art. It helps to understand the meaning of works of art:

- knowledge of symbolism;
- knowledge of the peculiarities of the author's life path.

Van Gogh's painting is connected with peculiarities of his personality. According to Lusher's classification, Van Gogh is characterized by a yellow type of behaviour. A knowledge of history, symbolism of space, and object symbolism conduces to an understanding of Velasquez's painting. The colour set of Repin's paintings depends on emotional state of the author. Figuratively semantic analysis can be applied to all types of visual art.

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What is Crafts Entrepreneurship? The Development of its Definition Through Entrepreneurs` and Consumers` Perceptions

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Abstract: Defining craft entrepreneurship has been a challenge for many scholars and researchers in different countries. Not only because of the multidimensional nature of entrepreneurship, but also because of the differences in national regulations setting boundaries for each sector of the economy. Thus, in some countries, craft is a part of the Creative Industries, but in others it is considered as an independent sector of the economy. Understanding what craft is and how craft products can be differentiated and defined has also been a daunting task. Thus, consolidating theoretical knowledge on entrepreneurship and craft entrepreneurship gained from the literature with the results of an empirical study carried out among craft entrepreneurs and consumers of craft products, this study aims to conceptualize craft entrepreneurship and to develop propositions for the definition of craft entrepreneurship by integrating the meaning attributed to craft entrepreneurship and its specifics by craft entrepreneurs with the perception and meaning assigned to craft products and services by consumers. This study applies qualitative methodology and data gathered using semi-structured interviews and open-ended survey questions. 20 craft entrepreneurs represent a perspective of entrepreneurs about entrepreneurship and its specifics in the craft sector, whereas 445 consumers reflect the opinion of the general public about craft and craft-related products. The results of the study indicate that craft entrepreneurship is undoubtedly connected to handmade products, national traditions, small ventures and craft markets and fairs, where craft entrepreneurs commercialize their produce. Although numerous scholars have already attempted to conceptualize craft entrepreneurship theoretically, the contribution of this study is in its integrated application of theoretical and empirical data reflecting the perspectives of entrepreneurs and consumers.

Keywords: craft, entrepreneurship, consumer, opportunity, definition.

Introduction

Entrepreneurship plays an important role in defining a country's development as it has always been an influential and topical phenomenon in explaining economic development, job creation and social welfare (Reynolds, Hart, Mickiewicz, 2014; Baumol, Strom, 2007). Entrepreneurial activity is believed to be an important driver of transformation, change and development (Berglund, Johansson, 2007) and especially small creative companies, which are more energetic and innovative having the capacity to grow faster and create more jobs (Van Praag, Versloot, 2007). To support entrepreneurial actions, it is important to define what entrepreneurship is and how it happens. Therefore, scholars actively engage in discussions about definition, perspectives and measurement of entrepreneurship best suited for each given situation. Up to now, there is no common agreement in this area (Davidsson, 2015). In addition, there are different types of entrepreneurship proposed by eminent authors (Pret, Cogan, 2018). For example, social, sustainable and creative entrepreneurship among others, are defined as such because of the distinctive nature of entrepreneurial intentions and actions needed to produce different goods or services (Smagina, Lindemanis, 2012). Again, each of the types has its own features specific to a sector and type of entrepreneurship.

Crafting is currently experiencing a renaissance (Doreen, Thomas, 2017). New global trends indicate that the industrial economy is giving way to a new type of economy – one based on creativity, innovation, skills, experience and growing demand for authentic goods and services with high intangible value (Romantsev et al., 2016). This knowledge-intensive and resource-saving economy pushes forward a demand for skill-intensive, personalized labour and reveals the growing potential of the craft sector. In response to the constantly growing demand for products with not only functional characteristics but which is also aesthetically pleasing and emotionally engaging (Rintamäki, Kuusela, Mitroen, 2007), the necessity for entrepreneurship satisfying these new demands has emerged. This, in turn, initiated discussions regarding the necessity to differentiate craft entrepreneurship from other types of entrepreneurship (Culture Label Agency, 2014) and explore its specifics in more detail.

Overall, there are different specifications for professional activities in the craft sector. Some claim craft occupation is about manual work and functionality, although others argue it is about creativity, innovation, traditional skills and techniques used to produce craft objects (Risatti, 2007; Smagina, Ludviga, 2020). According to the Oxford dictionary craft is "an activity involving skill in making things by hand" or "work or objects made by hand" (LEXICO, 2019). Similarly, craft is defined in the Merriam Webster Dictionary as "an occupation or trade requiring manual dexterity or artistic skill" (Merriam-Webster, 2019). Traditional craft is hand-made, but the contemporary crafting process also includes machinery (Mečņika et al., 2014). although mostly limited to the use of hand-controlled machines only (Pöllänen, 2009). In crafting the degree of hand-made can vary, but there must be some features made by hand (Zulaikha, Brereton, 2011). Research on craft entrepreneurship and craft entrepreneurs is scarce and fragmented (Gordini, Rancati, 2015) and there is a lack of a common understanding and definition of craft entrepreneurship. Thus, this study attempts to bridge this gap and offers additional insights into craft entrepreneurship.

This study aims to conceptualize craft entrepreneurship and to develop propositions for the definition of it by integrating the meaning attributed to craft entrepreneurship and its specifics by craft entrepreneurs with the perception and meaning assigned to craft products and services by consumers. To achieve this aim, theoretical knowledge available in the area and empirical data gained from the field have been used. As the definition of craft entrepreneurship consists of both – entrepreneurship and craft, an integrated approach is used to combine knowledge from different domains.

Methodology

Research on craft entrepreneurship is growing in popularity and many scholars have already made significant contributions to the field (Chua, Roth, Lemoine, 2015; Dalpiaz, Rindova, Ravasi, 2016; Lounsbury, Glynn, 2001). Therefore, it is important to integrate already available results and findings into the performed study. Thus, thorough literature review has been conducted to build a foundation for this study and to explore, conceptualize and define craft entrepreneurship. However, to explore the phenomenon in more detail and to enrich existent theoretical concepts in the field, this study introduced an empirical perspective. It was conducted by using qualitative research methodology to provide in-depth empirical evidence from the field. The empirical part of the study consisted of 2 parts, one reflecting the perspective of entrepreneurs and the other of consumers.

The first part presents the perspective of craft entrepreneurs. As part of the case study method, interviews with craft entrepreneurs were carried out to collect detailed data to investigate opinions and perceptions of entrepreneurs about craft entrepreneurship and its specifics (Yin, 2009). Personal interviews provided in-depth insights into the phenomena under investigation through the collection of data from real settings and reaching conclusions grounded in an actual situation (Flyvbjerg, 2004; Stake, 2000).

Each case study has been chosen to provide for a distinct view on the practices of craft entrepreneurs for different occupations, ages as well as types of business. The cases were selected according to the following criteria: the business venture is a legal entity registered in Latvia (for the purposes of this article), operating successfully in the craft business for at least 3 years. The founder of the venture or his/her venture is identified as belonging to the craft sector and the core activity of the venture (craft making) involves a significant input of manual labour. In selecting cases it was assumed that founders of craft business have economic (i.e., financial) objectives. Not-for-profit sector (i.e., charities, voluntary and public sector) organisations were not included in the research.

A purposeful sampling strategy was applied until theoretical saturation was reached. Cases of self-employed entrepreneurs as well as small and micro enterprises have been explored. Altogether, 20 case studies, representing craft ventures, established in Latvia, have been analysed. The selected cases include but are not limited to the following types of craft businesses: jewellery design and making; floral design; craft clutches and accessories; repair and renovation of roofs; furniture manufacturing and restoration; hand crafting and restoration of musical instruments; folk wear and accessory making; pottery; handmade porcelain; wool, willow processing and weaving; organic food, souvenirs, bakery.

During the interviews, entrepreneurs were asked about themselves, their ventures, as well as what they think of craft entrepreneurship and its distinctive characteristics. Interviews were carried out in the native language of the interviewees (Latvian or Russian). Thematic analysis as a method of analysing qualitative

data was used in this study to interrogate interview data with the purpose of examining craft entrepreneurs' perceptions of craft entrepreneurship. The NVivo software programme was used to analyse and code the data to identify common themes craft entrepreneurs associate with craft entrepreneurship.

The second part of the study was to find out how consumers perceive craft and craft-related products. The survey consisted of an open question asking consumers how they perceive craft and craft-related products and what their primary associations related to craft products and services are.

Theoretical Foundation

Due to the growing interest in craft research activity related to it has grown (Pret, Cogan, 2018; Chua, Roth, Lemoine, 2015; Dalpiaz, Rindova, Ravasi, 2016; Lounsbury, Glynn, 2001). For the purposes of this study, a thorough literature review was carried out to find out how entrepreneurship and specifically craft entrepreneurship is operationalized and defined in the literature.

Entrepreneurship

Entrepreneurship is considered the vehicle for growth and prosperity of countries and nations (Birch, 1987; Baumol, Strom, 2007; Acs, 2008; Amorós, Cristi, 2008; Wennekers et al., 2010), and because of its importance, scholars put great efforts into scrutinizing it and trying to operationalize its definition to offer the most suitable explanation of the phenomenon (Wennekers et al., 2005). Indeed, entrepreneurship is a complex phenomenon (Gartner, 2001) and among the definitions available in the field there are those which imply that it is about competitive behaviours that drive the market process (Kirzner, 1973), creation of organizations (Gartner, 1990), revitalizing organizations (Ab Rahman, Ramli, 2014; Eroglu, Picak, 2011) or the introduction of "new economic activity that leads to a change in the market place" (Sarasvathy, 2000, 2, 11). Therefore, it is agreed that entrepreneurship brings change and transformation (Berglund, Johansson 2007) and entrepreneurs as "agents of change and growth ailing market economy" (Ab Rahman, Ramli, 2014; OECD, 1998, 11) are the ones recombining resources and assuming related risk (Schumpeter, 1934).

There are many perspectives of entrepreneurship (Dincer et al., 2011) and researchers are debating whether it is about behaviour or outcomes; if it is part of the commercial sector or the not-for-profit one; if it is about large, small or individual ventures (Gartner, 1990; Hebert, Link, 1988; Kirzner, 1997). However, the very central role in the discussion is often given to the importance of opportunity (Venkataraman, 1997; Shane, Venkataraman, 2000; Dimov, 2011: Mitchell et al., 2004; Summatavet, Raudsaar, 2015), recognized by individuals who develop it into value-creating business ventures (Klyver, Hindle, Meyer, 2008; Reynolds, 2007; Spencer, Kirchoff, White, 2008). Besides, as mentioned by S.D. Sarasvathy entrepreneurship consists of ideas (Sarasvathy et al., 2010), beliefs and actions to introduce new economic activity, based on creation and exploitation of business opportunities (Davidsson, 2015), which is the very essence of entrepreneurship (Shane, Venkataraman, 2000).

Opportunities are "elusive" and opportunity recognition is the ability to identify a good idea and transform it into a business concept that adds value and generates income" (Lumpkin, Lichtenstein, 2005). There is no market for opportunities (Cuervo, Ribeiro, Roig, 2007) and therefore, an entrepreneur should have specific characteristics and competences to identify or create them as well as to develop and appropriate value (Cuervo, Ribeiro, Roig, 2007). In addition, S. Shane and S. Venkataraman (2000) suggest that entrepreneurship is not only about new businesses, but also about outcomes gained as a result of successful opportunity development. S. Shane suggested that opportunities could be viewed as situations which have economic and profit potential; thus, products and services have to be brought to the market at "prices greater than their cost of production" (Shane, 2000, 220).

Craft entrepreneurship

Although craftmanship has existed for millennia, craft entrepreneurship, in comparison to mainstream entrepreneurship, is a relatively new domain of knowledge (Doreen, Thomas, 2017). Due to changing preferences of consumers for culture-based engagement and local handmade products and services rooted in local culture and tradition (Ratten, Ferreira, 2017) interest in craft entrepreneurship has steadily increased. This, on the one hand, indicates great potential for craft products but, on the other, underlines the need to study the specifics and peculiarities of craft entrepreneurship.

Entrepreneurship in the craft sector is distinguished by a different environmental setting, production of goods that are "cultural" by nature as well as work with people who are often more content driven than commercially oriented (Chaston, Sadler-Smith, 2012; Wennekers et al., 2010; Smagina, Ludviga, 2020). This usually leads to the creation of very small enterprises or self-employment that exists on the basis of more permanent networks and focus on the production of local handmade goods connected to tourism and local culture (Lounsbury, Glynn, 2001; Ratten, Ferreira, 2017; Tregear, 2005).

There are various perspectives related to studies of craft entrepreneurship (Gehman, Soublière, 2017; Giorgi, Lockwood, Glynn, 2015). For instance, G. Cochrane (1992) studied the creative capacity of craft studios, C.A Popelka, M.A. Littrell (1991) explored craftmanship in connection to tourism - which is still one of the popular avenues for research in craft entrepreneurship (Evans, Shaw, 2004); while others examined it from the marketing perspective (Beverland, 2005; Clemons, Gao, Hitt, 2006), tourism and strategy (Verhaal, Hoskins, Lundmark, 2017), behaviour (Drummond, McGrath, O'Toole, 2018; Pret, Shaw, Dodd, 2016), value creation (Smagina, Ludviga, 2020) and collaboration (Bengtsson, Kock, 2000) among others.

Craft entrepreneurship is often discussed within the context of creative industries (Müller, Markworth, Söndermann, 2011), however some consider that it lies within the boundaries of cultural entrepreneurship (Jones et al., 2016; Ratten, Ferreira, 2017). Taking the importance and impact of the craft sector, researchers suggest treating it as an independent phenomenon (Gibson, 2016).

Understanding of what craft is has been changing over the years and there is still no common definition agreed in the area (Lucie-Smith, 1981; Dormer, 1997), neither for craft nor for craft entrepreneurship (Risatti, 2007; Tregear, 2005; Ratten, Ferreira, 2017). Some mention it is about manual work and functionality, while others argue it is about creativity, innovation and traditional skills and techniques used to produce craft objects (Risatti, 2007; Mečņika et al., 2014). One of the often-used definitions is that "craft involves the application of human skills and invested time" (Rosner, 2009, 1). A. Tregear (2005) refers to it as a process of making and selling products with high artistic value created as the result of application of manual work.

T. Fleming (2007), similarly to H.H. Stevenson and J.C. Jarillo-Mossi (1986) imply that one of the distinctive characteristics of craft entrepreneurs is the ability to recognize cultural and creative trends and opportunities (Bruni, Perrotta, 2014; Ramadani et al., 2019) and offer products, which are in line with consumer expectations and preferences (Cater, Collins, Beal, 2017). A. Biraglia and V. Kadile (2017) and add that this ability to operationalise such opportunities has a high probability to result in the creation of successful and sustainable business ventures (Danson et al., 2015). Likewise, R. Blundel (2002) and B.D. Mathias and A.D. Smith (2015) state that craft entrepreneurs are cautious in their choice of opportunities and they take only those opportunities, which fit their purpose. Definition, used by A. Kalinina (2016, 1) implies that craft entrepreneurship is a "small business or individual engaged in producing, transforming, or repairing goods without the use of machinery and not having more than five employees". L. Baldacchino and C. Cutajar (2011) add that this business is usually small and limited to small-scale production.

C. Henry and A. De Bruin (2011) and J.A. Timmons (2008) suggest that the pursuit of opportunities, with available resources to produce creativity and culture-based products (Rae, 2007), is an engine of development and key to success (Chen, Yang, 2009) for the establishment of new enterprises in the creative and cultural sectors. S. Naidu, A. Chand, P. Southgate (2014) mention that for these enterprises to be successful, opportunity recognition is the first step, followed by its modification and adaptation to the demands and needs of consumers. T. Pret, A. Cogan (2018) suggests that craft entrepreneurs "carry out novel combinations that result in something new and appreciated in the cultural sphere". These new combinations lead to the production of products "directed at the public of consumers, for whom they generally serve an aesthetic or expressive, rather than a clearly utilitarian function" (Hirsch, 1972, 641-642).

According to UNESCO (International symposium on…, 1997), craft products are made either entirely by hand or in combination with machinery; they have a significant manual input and are distinguished by a unique combination of creative, cultural and functional features. A craft product might combine characteristics of art and craft, thus, being aesthetically pleasing, conveying certain emotions and at the same time having functional characteristics and being made using traditional techniques (Pret, Cogan, 2018).

Y. Na (2012, 15) offers to define craft as "creative activity by humans whose aim is the aesthetic functional object, realized in its whole life cycle as a finished object, the practice of making process, and services". T. Kennedy (2010) and F. Cominelli and X. Greffe (2012) emphasise the strong connection of craft and

skills acquired and passed through generations. Moreover I. Tweneboah-Koduah and C. Adusei (2016) highlight the special skills and talent of craft makers working with simple materials. A. Nascimento (2009) implies that craft products have an authentic nature and can be viewed as a part of cultural heritage.

In France, for example, the craft sector is focused on cultural heritage and based on 4 characteristics: know-how, hand-made, unique, and small series. It is defined in the following way: "It is an independent activity of production, creation, transformation, repair and restoration of heritage, characterised by hand mastery and techniques in relation to materials requiring an artistic contribution" (The Artistic Crafts…, 2014, 2I). G.A. Pasteur (2004) emphasizes the historical, cultural, or aesthetic value of craft goods for local consumers.

Results and Discussions

Taking into consideration the different definitions and approaches to craft entrepreneurship presented in the theoretical part of this study, this section explores the meaning of craft entrepreneurship and perception from entrepreneurs' and consumers' perspectives.

Craft entrepreneurs' perspective on craft entrepreneurship

All data were analysed in 2 steps – first, analysis and classification of the data regarding entrepreneurship and second, analysis and classification of the data regarding specifics of the craft sector and entrepreneurship in the craft sector. The figure below (Figure 1) summarises the first step of this thematic analysis.
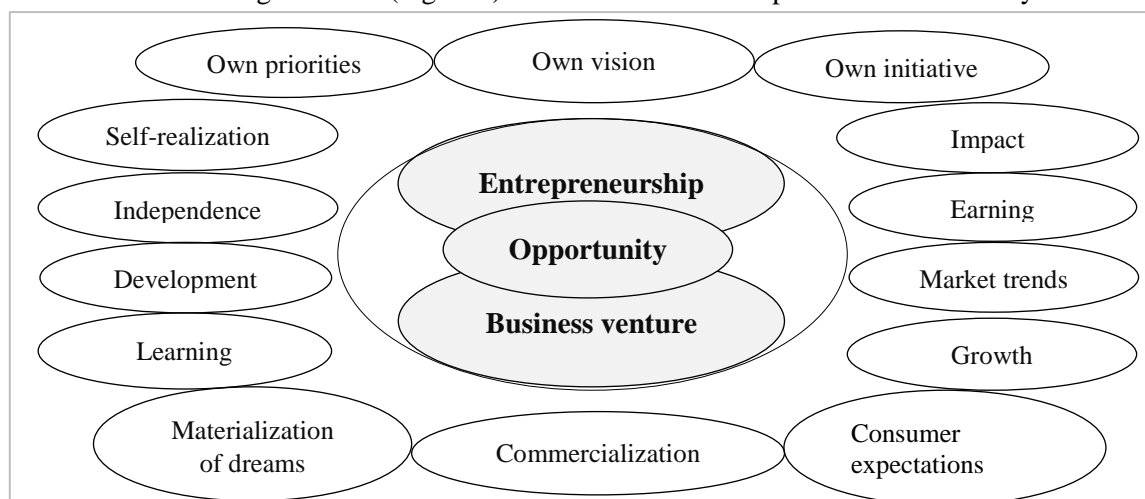
Figure 1. Entrepreneurs' perspective on entrepreneurship.

The results of the study indicate that in line with the theoretical assumptions on entrepreneurship as opportunity development (Dimov, 2011), most craft entrepreneurs mentioned that entrepreneurship is about "opportunity" defining the whole process of entrepreneurship. As mentioned by one of the respondents: *"one needs to spot the right opportunity and moment to launch my own venture"*, while the other respondent indicated that entrepreneurs know how *"to find new opportunities in a sea of competitors"*. For others, the opportunity is connected to the possibility to *"step into the unknown and start my own business"*; *"challenge myself and try earning from what I like"*; *"to realize my plans for self-realization and development"* or an opportunity to *"use the momentum and start selling things of my own making"*.

Opportunity was mentioned in connection with owning your own business, own business venture, being your own boss and having the independence to decide and act, implying that entrepreneurs connect entrepreneurship with independence in terms of running their own business and taking decisions based on their own judgement and set priorities.

Very often, respondents mentioned an opportunity to start a business from their hobby and earn by selling their already created items, implying that entrepreneurship is not only about making, but also about the possibility to commercialize one's talent and sustain their own business. During the interviews it was mentioned that, although craft entrepreneurs sometimes *"get carried away with their own creation and making"*, they do follow market trends and expectations of the consumers. Respondents indicated

that entrepreneurs produce their goods to *"solve a problem of the consumer"*, *"address a need in the market"* or *"offer to consumers something they look for"*.

Besides, many of the entrepreneurs interviewed indicated that creating impact is essential. Making and selling craft products and services allows them to not only receive a financial contribution but also to *"make a difference"* and *"contribute to the promotion of national values, traditions and culture"*.

During interviews with craft entrepreneurs about their perception of the specifics of entrepreneurship in the craft sector, several thematic categories of meanings were identified (Figure 2). Analysis of the data indicates that the most often mentioned meaning of craft entrepreneurship is connected to the specific type of products produced in the sector and the way it is produced. Most of the respondents indicated that they make craft products themselves and they are fully engaged in the whole process, from its production to commercialization. One of the respondents mentioned: *"I make it all myself, with my own hands, and when I also sell it myself…, I know what story to tell to the customer"*; while the other respondent added: *"I do everything myself as in this way I have control over the process and quality and I know how to improve and develop my business"*.
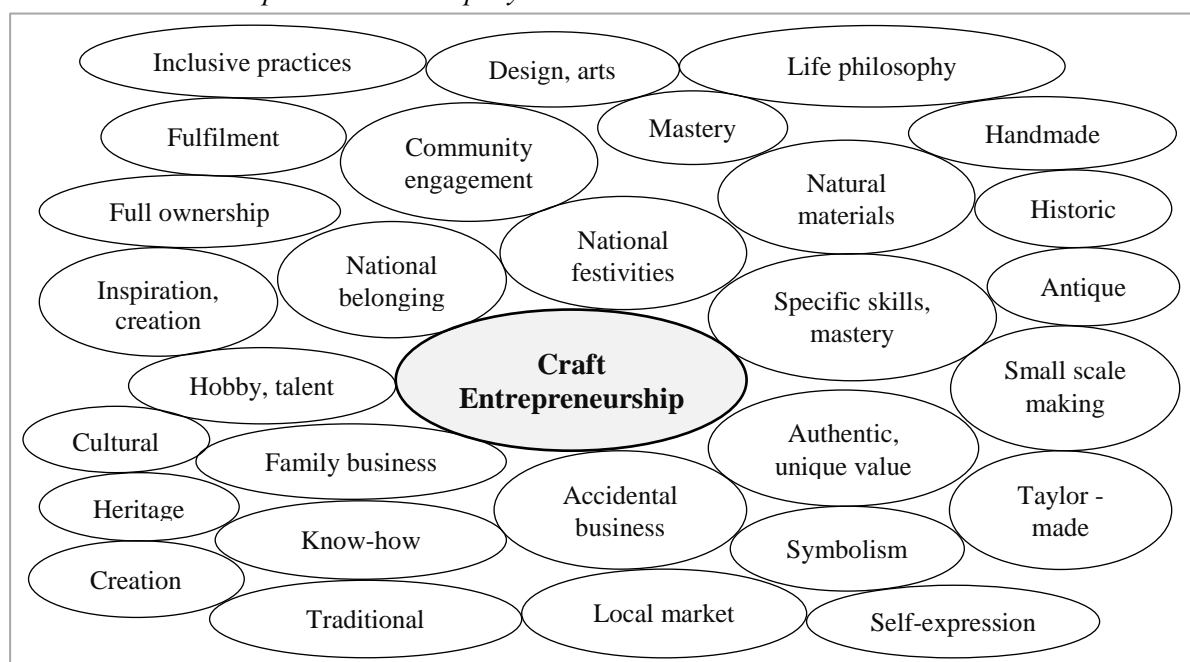
Figure 2. Entrepreneurs' perspective on the specifics of craft entrepreneurship.

Besides, it was mentioned that entrepreneurs do differentiate craft products from mass-produced and they *"put their soul and talent into it"* and *"make it in a limited number or tailor-made"*. Several entrepreneurs mentioned the "unique" nature of the products and the specific process of making. Some of the respondents mentioned that *"an old, traditional technique is used to make the products"*, *"national symbols are used to make it Latvian"* or *"specific knowledge and skills are needed to make it authentic and valuable"*. Other responses of the interviewees highlight the creative abilities of the craft makers. Some of them mentioned that craft is about inspiration, design, art and aesthetics: *"My motivation to create and introduce creative designs is fully realized in my own business"*.

Another interesting trend in craft entrepreneurship is about the fact that many of the entrepreneurs start their business out of their hobby or interest in a specific field or family traditions. As said by an interviewee: *"I learned it from my parents, I knew the process perfectly well, so I had no doubts I can do it myself"*. A respondent from the jewellery making business implied that *"I was making it for myself, my friends, relatives, etc., and then, they offered to pay me for making presents for their friends…it encouraged me to start my own business"*.

Many craft entrepreneurs mentioned that in contrast to business entrepreneurs, craft entrepreneurship sometimes can be called *"accidental"*. It implies that individuals become entrepreneurs without prior intention to do so and everything happens accidently (not planned in advance); sometimes with the help

of friends or family members suggesting to *"give it a chance";* or sudden realization there is an opportunity to take: *"I suddenly realized I can earn my living by doing what I like"*. However, for some entrepreneurs, it takes some time for the opportunity to be shaped into business: *"I kept doing it in my spare time, until I decided to give it my full time, attention and determination"*.

In addition, respondents implied that due to the handmade nature of craft products and the intensive labour needed for this purpose, craft entrepreneurs are often self-employed or run small-scale businesses which have limited capacity for efficient commercialization. Many craft entrepreneurs rely on specific events and craft markets, organized by local authorities; or national festivities attracting many local people and tourists interested in craft. Although, it was also mentioned that participation in such events requires craft entrepreneurs to actively engage with the community and consumers: *"I talk to my clients, tell them my stories and try to engage them in the process. It helps me to sell my products and encourage clients to recommend it to others"*.

Altogether, the wide range of different meanings captured from the data related to entrepreneurs' perception of craft entrepreneurship serves as a useful insight into one perspective on the phenomenon, however, to gain more comprehensive overview of craft entrepreneurship, it will be complimented with analysis of the data gained from a different perspective – that of craft consumers. The following section of this study illustrates how consumers perceive craft and craft-related products and what they associate it with.

Craft consumers' perspective on craft and craft related products

To explore how consumers perceive craft and craft related products and what associations they have, the second part of this research is based on the results obtained from the survey, which included an open-end question asking respondents their perceptions and associations connected to crafts and craft-related products. The survey was administered via the Webropol survey software program in three languages (Latvian, Russian and English) and 445 valid responses were received. Table 1 presents the demographic data of respondents.

Table 1

Demographic data of respondents

Language of the survey	gender		nationality				country of residence		
	male	female	Latvian	Russian	UK	Other	Latvia	UK	Other
Latvian (n=283)	19	264	265	9	0	9	279	0	4
Russian (n=99)	7	92	25	64	0	10	97	0	2
English (n=63)	32	31	6	1	22	34	6	32	25
Total	58	387	296	74	22	53	382	32	31

Most of the respondents indicated they reside in Latvia, although the vast majority of respondents who filled in the survey in English were from other EU countries (the UK, Ireland, Germany, France, The Netherlands among others). All respondents had experience of purchasing craft products: 6 % indicated they purchase crafts once a week; 28 % once a month; 48 % once in three months and 18 % purchased craft products or used services only once or twice.

Due to the fact that the survey was administered in English, Latvian and Russian and responses were collected in the 3 languages, this study addresses each group of respondents separately before consolidating the data and drawing overall conclusions. Responses were translated to English to analyse the data. The text mining method was used to process it and visualize the findings. The results of the data analysis using the text mining technique are presented in Figure 3 (for survey in Latvian), Figure 4 (for Russian) and Figure 5 (for English).

According to the results visualized in the word cloud of responses in the Latvian language (Figure 3), most often mentioned words were the following: *handiwork* (the most frequently used association mentioned by 28 % of respondents); *weaving (*mentioned by 11 %); *clay (*mentioned by 7 %,); *beautiful* (mentioned by 6,4 %) and *wood* (mentioned by 5,2 %). In addition, results of the word map indicated that respondents associate craft with the following craft products: *buckets, jewels, socks, ceramics, wood crafts, and others.* Regarding the word map, it is important to notice that consumers tend to associate craft with the *quality, beauty, natural materials and products made by hand* through the application of *craftsmen's talent, inspiration*

and emotions. Besides, as evidenced by the word cloud, craft products are associated with *small craft markets, festivities and unique and authentic products* expressing craftsman *devotion and personal interest*.

"Craftsmen, history, heritage", "Ancestral traditions", Old skills, traditions", "Ancestral art"
"High-quality handwork, the heart of the product maker. Handicraft products are a kind of preservation of cultural heritage in the era of industrial production."
"Clay products, ceramics, markets", "Clay pots, wooden products, knitwear", "Baskets, toys, earthenware, linen dresses"
"Handmade by skilled people", "Handmade with love", "Huge handwork invested! Originally, radiates a positive aura", "Only one copy individually, in particular, by hand."
"An authentic product made at home, corresponding to the given environment and culture"
"Antiquity, care, creativity, talent, opportunity and ability to realize your heart's work in tangible things and objects."

Figure 3. Word clouds and samples of consumers' statements (survey completed in Latvian language; n=283).

The results of the survey in the Russian language (99 responses) suggested a slightly different perspective of consumers. The word cloud and citations of the responses are presented in the Figure 4.

"Handmade, the first picture in the associative row is a rake, agriculture and blacksmiths".
"High level handcraft", "Handmade, but the first picture in the associative row is a rake, agriculture and blacksmiths", "Everything that is done by hand", "Hand-made".
"Products were made by hand from natural materials, beads, etc."
"Products of folk art", "Creativity art", "Talent from God", "Creativity and profession".
"Street markets with products of folk craftsmen".
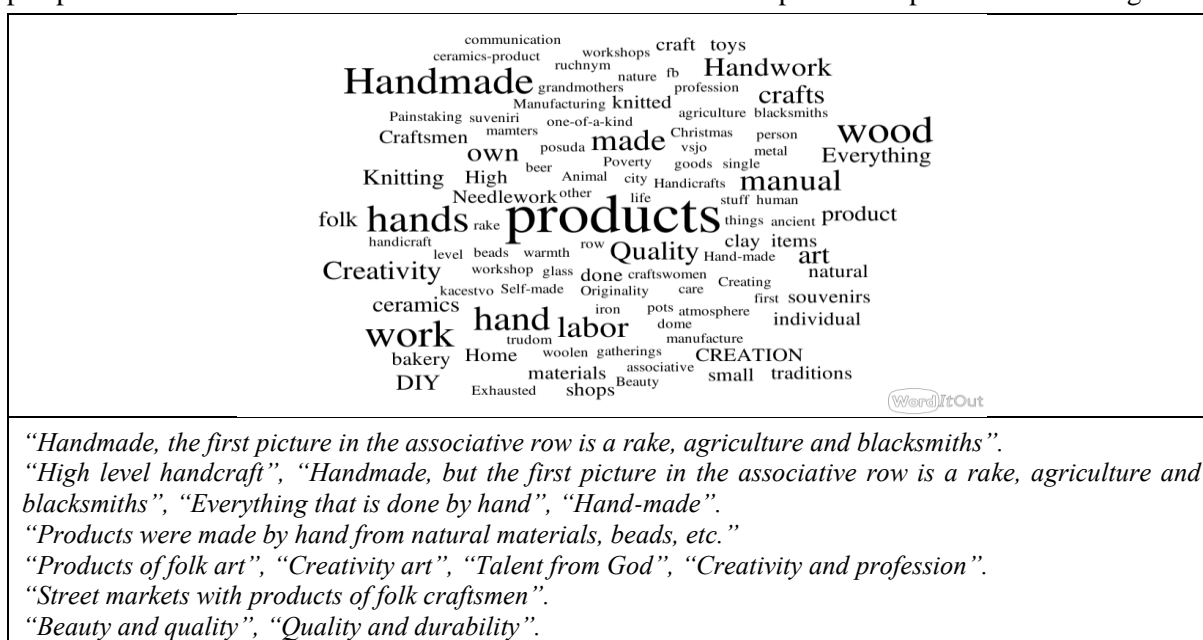*"Beauty and quality", "Quality and durability".*

Figure 4. Word clouds and sample statements (Survey completed in Russian language; n=99).

The results of the responses in the Russian language reflect a similar perception of craft products, although with the slight difference in relation to the type of products offered by craft makers. *Handiwork* in various associations was mentioned by 48 % of respondents. Most of the respondents associate craft with *souvenirs, toys, ceramics, household items, wood craft and antique products*. Many of the respondents mentioned *creation, design and authentic nature of products*. Furthermore, the results of

the word map illustrate that craft is closely connected to the *natural materials, uniqueness and quality*. It is also important to note that respondents mentioned *work at home, hobby and artistry*.

The results of the responses in the English language (63 responses) are presented in Figure 5. The responses of those who completed the survey in English are consistent with the results of the other surveys, thus, also mentioning *handiwork* (mentioned by 8 %) and *authentic nature* of the craft. However, the results of the word map presented a broader perspective of associations. Interestingly, respondents of the survey in English, more than those in Latvian or Russian, associate craft with *small* (mentioned by 13 %), *arts, design and innovation* (mentioned by 6.4 %). Results indicate that *passion, creativity and lifestyle* are closely connected to the craft. Moreover, respondents also mentioned *traditions, culture, creative individuals* and *identity* suggesting that craft is associated with *cultural heritage, community, local traditions, lifestyle and well-being*.

"Art, handmade, small business, handiwork", "Passion, arts, creativity", "Creative people, innovation, beauty".
"Artists, designers, business", "Something beautiful, creative, innovative", "Creativity, innovation",
"Creativity, innovation".
"Strongly believe that craft products are part of cultural identity. Handiwork products are always valuable work for me because they show great effort and emotional bond".
"Products made by artists and craftsmen such as paintings, carpets, baskets, ornaments. They are handmade".
"Unique, authentic stuff", "Sustainability, raw materials', "Markets, fairs and design shops".
"Lifestyle, well-being, passion', "Modern making, innovative approach".

Figure 5. Word clouds and sample statements (survey completed in English language; n=63).

Comparing the word clouds, it is evident that they are to some extent similar since *handiwork* is emphasised in all. Still, several minor differences exist. Responses in Latvian stress the importance of *culture, heritage, and tradition* more than others. This is in line with T. Pret and A. Cogan (2018), who suggested that craft entrepreneurs' success relies upon heritage and tradition. Prior research has shown that culture and history play a significant role in shaping craft entrepreneurship (Esposti, Fastigi, Viganò, 2017; García-Rosell, Mäkinen, 2013) and craft business relates to handmade products and services rooted in local culture and traditions (Ratten, Ferreira, 2017). Moreover, G.A. Pasteur (2004) emphasizes the historical and cultural value of craft products. Several studies have highlighted the importance of the different nature of craft products (Pret, Cogan, 2018; Verhaal, Hoskins, Lundmark, 2017).

Responses of those who completed the survey in English draw attention to *creativity* and *innovation*. This echoes with A. Bruni and M. Perrotta (2014) show that craft entrepreneurs "find creative ways to discover and exploit opportunities". Similarly, H. Risatti (2007) argues that craft is about creativity and innovation in combination with traditional skills and techniques.

Definition of craft entrepreneurship

Integration of the results from the literature review on entrepreneurship and specifics of craft entrepreneurship with the results of the empirical findings presented above resulted in proposing the following definitions of craft entrepreneurship:
   a) craft entrepreneurship is an opportunity pursuit through the establishment and development of a business venture of appropriate value, created through the application of handwork sector

specific knowledge, skills and traditions;
  b) craft entrepreneurship is the result of an opportunity developed through the application of a craftsman's mastery, creativity and commitment to create a specific type of value reflecting his or her personality and vision;
  c) craft entrepreneurship is a process of value creation and appropriation through opportunity development in the craft sector.

Conclusion, Limitations and Future Research

Undoubtedly, entrepreneurship is a key economic engine and especially small companies, which are more energetic and innovative, have this capacity to grow faster and create more jobs (Van Praag, Versloot, 2007; Florida, 2003). These companies facilitate technological progress and innovation as well as create an impact on different levels of the economy. In this sense, exploring craft entrepreneurship is important to facilitate its development and growth. Although available literature provides an initial insight into the area under investigation, empirical studies combining different perspectives and mixed research methodologies in this field are scarce.

This study responds to the call to address this research gap. By categorizing the meanings associated with crafts on a general level, this study aimed to provide a deeper insight into the specifics of the craft sector and add to the understanding of entrepreneurship in the craft sector. As evidenced by the results of the study, craft entrepreneurship is associated with opportunity development in a specific context. Craft entrepreneurship is about self-employed craft makers or small companies established in the craft sector with the objective of commercializing the creative endeavours and personal expression of the makers reflected in the created value of handmade and authentic produce, often made from local natural materials.

This study offers both theoretical and practical contributions. From a theoretical perspective, this study contributes to the conceptualization of craft entrepreneurship and offers several propositions for defining craft entrepreneurship. From a practical perspective, this study contributes to the practical insight into the realities of the craft sector and allows analysis of consumer perceptions of craft products. The availability of this information can help craft practitioners and entrepreneurs to better communicate the value of their offer as well as commercialize it in a more efficient manner.

The limitations of this study can be attributed to the relatively small number of case studies used to explore the perspective of craft entrepreneurs as well as subjective interpretation and conceptualization of the data.

Future research on craft entrepreneurship might include studying it from other perspectives such as marketing, strategy, commercialization, financial and state support among others. Future research is also encouraged to investigate the contextual embeddedness of craft entrepreneurs.

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Development of professional education and career

Metaphoric Associative Cards – Tool for Career Counselling with Long-Term Unemployed

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Abstract: Topicality of the research is that a significant part of unemployed stay unemployed for a very long time even when the economic situation allows to get employed. This part of society abuses the social security system, misuse the State Employment Agency services. Typically, they are seen by society as less educated, less capable than other groups and they need special assistance in job searching process. The aim of the pilot study was to explore how more creative and skill-oriented methods can be used in career counselling with long-term unemployed. The methodology includes following steps: small group of long-term unemployed (8 women) were asked to reflect on their unemployment and answer 4 questions developed by the author. Questions are covering their opinions on reasons of being unemployed, what kind of a result they want to achieve, what resources they can use and how they are going to feel in case they become employed. Results shows that most participants of the group consider that they can't find a job because of external obstacles. They mention the State Employment Agency and relatives (families) as resources to use. All respondents were confused answering question about their feelings and cannot name any feeling they might feel getting a job. The results and process of the session show that long-term unemployed have difficulties with soft skills and emotional intelligence.

Keywords: career counselling, long-term unemployed, metaphoric associative cards.

Introduction

The aim of the study is to represent a more creative tool for career counselling with the long-term unemployed. State Employment Agency provides many different services for unemployment to help them return to the labour market getting additional education, training and certification. The long-term unemployed are able-bodied persons who have been registered at State Employment Agency more than one year (Support for Unemployed..., 2002). Before pandemic the level of unemployment was not that high in Latvia (vary in different regions, but the total country wise in February 2020 was 6.3 %) and now, in October it is 7.4 % (Pārskats par bezdarba…, 2020) and 22 % or 15 500 people are long-term unemployed.

Long-term unemployment has significant impact not only on economic, but also on personal level. Long-term unemployment can have serious adverse effects for individuals as it entails the depreciation of skills, the more difficult is to get hired, less time devoted to the job search and hence more probabilities of leaving the labour market. Consequently, a high level of long-term unemployment threatens social cohesion as it exposes individuals to a risk of social exclusion and society to high levels of structural unemployment (Blázquez, Herrarte, Sáez, 2018). There might be different reasons why people stay unemployed when it is possible to get a job – health issues, language issues or addictions. According to F.K. Lee and J.A. Johnston unemployment has a significant impact on psychological health issues, individual wellbeing, self-efficacy, and self-esteem (Lee, Johnston, 2001).

Denmark experience shows that long-term unemployed participance in mandatory activation programmed increases participants chance to get employed for 30 % (Graversen, van Ours, 2008). That means that any type of activities long-term unemployed is taking part in may bring positive changes and raise opportunity to get job.

Reflecting on author' personal, almost 10 years long, experience in different types of work with long-term unemployed the variety of services that long-term unemployed is able to get is focused on very technical and practical skills – education, cover letter writing, preparing CV and language training. All those skills are topical in regard to job hunting, finding and holding.

According to J. Laskova and L. Brokane study best way to introduce job searching opportunities for long-term unemployed is during individual consultation, because it allows to evaluate individual experience and needs (Laskova, Brokane, 2014) and it is why such method as dialogue is so important

and widely use working with any type of unemployed and long-term as well. 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 (Soika, 2017). Individual work with long-term unemployed, dialogue-based sessions can bring significant results to individuals' lives. During sessions with career counsellor different topics can be discussed and individual can be softly pushed to reflect about the current situation, emotions and feelings that it brings up in conversation. Unfortunately, not all long-term unemployed can receive full-time individual sessions and not all of them are truly interested in that type of assistance. That's why work in small groups still can bring significant differences when there is an opportunity to express thoughts, to have dialogue with group moderator and other participants.

For being successfully employed it is important not only to obtain degree, toe get certificate or any other legal prove that individual is allowed to work in a certain field. Educations gives more than just formal part of it. Because education has three aspects: 1) it is related to knowledge of 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 the Human Being (Baltusite, Katane, 2017). It gives idea that not only formal part of job searching (like education, CV and cover letter, interview) is important, but also emotional and inner part of life that bring topic of importance of soft skills.

Soft skills include such competencies as critical thinking, social aptitudes, communication capability and ability to take part par in teamwork (Cimatti, 2016; Tulgan, 2015). Both - education system and employees consider that soft skills are vital for personal life, professional career and organisational success (Keng Ng, 2020).

One of the crucial components integrating soft skills development to job searching and holding process is practice (Bedwell, Fiore, Salas, 2014), during which long-term unemployed can try to convert knowledge into behaviour.

The author considers that a person who is unemployed for over a year, who experiences deprivation of time structure, who might be procrastinated too much could find more challenging keeping a relationship with colleagues more than with work's technical part. Soft skills include certain abilities such as communication, problem-solving, self-motivation, decision-making, and time management skills (Gupta, 2010).

For long-term unemployed it might be especially hard – they have strictly limited opportunities to communicate with people, to develop different soft skills that can be sharpened only in cooperation and communication with other human beings.

It is important to work on soft skill development and practice using existing ones. There might be different ways how to achieve it – participating in group sessions; receiving individuals' sessions with a coach, career counsellor or psychologist; individual work with available resources – books, audio and video content (might be harder for long-term unemployed, since the level of motivation might be lower than expected to be). Different tools can be used for that work and one of the are metaphoric associative cards (MAC). Such a tool might be great for developing emotional intelligence and reflecting skills for better understating of their own personality and their opportunities and restrictions they might have in their own mind.

MAC – is a modern tool that might be used in different types of therapeutic, consultative, and pedagogical work. It is also a great way to explore your own personality, push your creativity and entertain yourself.

Metaphoric cards were introduced and first published in 1982 by E. Raman, he explored a different use of two–deck interactivity with a pair of decks called *Persona*, one of portraits, the other of abstract designs that can symbolize possible social interactions or personal relationships. MAC are based on principles of gestalt-therapy, humanistic psychology, C.G. Jung archetypes and J. Campbell myths (Raman, 1995; Jung, 1991; Campbell, Moyers, 1991; Gatineau, 2010).

There are different visual types of MAC decks – organised by colours, topics, ideas, words. The main idea is that all cards in deck relate to something similar and many different scenarios can be played with them. MAC is a widespread type of projective techniques that can quickly and clearly get information

about the person, his inner state and experience, identify issues that need to be addressed, and see the correlation of internal associative images with external life realities (Hrinchenko, 2018).

Metaphoric cards open a window to a person's inner world; associative reactions to the illustrated cards make it possible to reflect upon childhood memories, to recall repressed experiences, and to release blocked feelings. Since the interpretations of metaphors featured in the cards are completely in the eyes of the beholder, the same card can trigger different reactions in different participants (Ayalon, 2007).

Using MAC might seem like a game, however one of co-operation and sharing rather than competition and achievement. It is essential that "playing the game" gives freedom to players. There is no right or wrong answer or explanation of cards. Using of MAC gives an excellent feeling of ownership to long-term unemployed – they are ruling the cards, they are giving them life and telling the story, allowing them to find their own course (Atkinson, Wells, 2000).

Career counselling does not include therapeutical work with any kind of trauma, but this tool is great for "mouth opening" tasks that push long-term unemployed to verbalise feelings and anxieties. It looks easy and playful to join a session where the main task is to choose colourful cards and speak about them, so during the invitation process long-term unemployed are interested, because they have never participated in any kind of similar activities.

The aim of the study was to explore how MAC as a more creative and skill-oriented method can be used in career counselling with long-term unemployed.

Methodology

The aim of the author was to try a new method when working with long-term unemployed – get their feedback and use in the future work, to figure out how long-term unemployed can express their feelings and emotions that represent their situation using metaphors itself and MAC as tool.

A survey developed by the author consists of 4 questions which represent respondents' attitude toward themselves, their opportunities and reasons to get employed or staying unemployed and what kind of resources are available to them. The participants were asked to answer these questions before taking part in sessions with MAC and after it. They were also asked to specify their gender, age, period of unemployment and level of education.

Respondents were asked to answer the following questions:
1. What stops you from getting employed?
2. What kind of results do you want to achieve?
3. What resources can you use to get employed?
4. How you are going to feel when you will get employed?

The current empirical research was carried out in one of Riga Social Service departments. 8 long-term unemployed took part in this pilot research. The participants of research were the following: 8 females between the age of 27 to 58 (Mean (M) = 43.625, Standard Deviation (SD) =9.7).

Results and Discussion

Being unemployed for many years in a row brings significant changes to personality itself and cannot be changed or treated during one session with any kind of professional. In Latvian context long-term unemployed have no possibilities to get full access to any kind of treatment they might need – there is no complex approach for that target group. In State Employment Agency they can receive career counsellor sessions and get on the waiting list for additional education. In Social Service they might get assistance of social worker, however since "unemployment" itself, in terms of social service, is not considered as a social problem. Being a social service client, they can get free access to 10 sessions with psychologist, however they need to prove that they have a reason to ask for it.

Not many long-term unemployed are seeking for that type of help, however even if they do – they might get some pieces of a full picture. On the first day of the research all participants were invited to social service and asked to fill in a questionnaire, they were explained why they need to fill it and what will

happen next. After filling it all of them participated in a session using MAC. They were invited over the next day and asked to fill a questionnaire again.

Experimental career counselling session using A. Grashchenkova deck (Grashchenkova, 2020) is based on SCORE-model. The model was introduced by R. Dilts and T. Epstein in 1987 and includes basics of neuro-linguistic programming (Dilts, Epstein, 1989). A participant takes a piece of paper and write down SCORE (alternatives in their mother tongue), where S means symptoms, C – causes, O – outcomes, R- resources, E – effects. Then takes five cards (without choosing the face of cards) and opens it one by one answering questions connected to each card.

The following questions are asked: symptoms – what is the problem? What you want to change? Outcomes – what will you consider as a result? What do you want to achieve as results? What do you want to get instead of you have now? Effects – what will happen after the goal is achieved? How will it affect you? How will it affect your surroundings? Reasons – why are you not in the situation you want to be? What disturbs you? Resources – what do you need to achieve goal? What or who can help you? What steps do you need to take to achieve it?

All questions and reflections going on during the session brings a person to a "problem space". While answering all questions participants make notes that they can bring to themselves. All pilot research participants are Riga Social Service clients – some of them receive social benefits for years, some of them just started using social security system. All of them have secondary education (it includes 5 persons with general secondary education and 3 persons with professional secondary education). Unemployment periods vary starting from 20 months to 51 months.

According to Table 1, answering the first question (before MAC session) "What stops you from getting employed?" (participants could name few reasons) – 7 respondents mentioned that they can't find a job. That can not be true, because the labour market, at this period, offers a variety of positions for people with secondary education. After and while respondents were filling the questionnaire, they mentioned that "they [employers] don't want to choose me". Options like "Language difficulties", "Health issues", "Age issues" and "No resources to leave children with" were mentioned by 2 persons each. One person mentioned option "Not high enough salary offered". When participants answered the question after taking part in session one new answer appeared and 2 persons mentioned that they "Do not want to be employed".

Table 1

Question #1 "What stops you from getting employed?"

(respondent can mention few reasons)

Reason (as mentioned by the respondent)	N, respondents BEFORE	N, respondents AFTER
Can not find a job	7	6
Language difficulties	2	2
Not high enough salary offered	1	1
Health issues	2	2
Age issues	2	2
No resources to leave children with	2	2

Answering the second question before taking part in session all respondents answered that they want to get employed. After the session two persons mentioned that they do not know what result they want to achieve, however six persons answered the same – want to get employed.

While answering a third question "What resources can you use to get employed?" 6 of 8 participants asked researcher (researcher presented during answering questions) what does it mean. They were explained that resources mean – people, they can ask help, institutions and special tools. Seven respondents mentioned that they can use State Employment Agency as resource, three persons mentioned family members, relatives and friends. No one of the respondents has mentioned Social Service or any type of online possibilities as potential help in their job searching.

Answering the last question "How you are going to feel when you will get employed?" all respondents answered that they do not know how they are going to feel.

To sum up, long-term unemployed have significant problems with expressing their feelings and training their soft skills and emotional intelligence. All tasks of the session included taking card and expressing feelings and emotions, describing situations that look familiar and comes to their mind. That's proven by respondents replying to the last question of the survey – how they are going to feel after getting a job, no one was able to answer and describe it. The field of soft skills might be hard not only for long-term unemployed, but also for university graduates (Widiyono, 2019). Soft-skills training should be implemented in training programs for long-term unemployed.

Important aspect of willing to get employed is motivation. According to H. Gudjons motivation is one of the crucial preconditions for learning (Gudjons, 1998). All respondents are clients of State Employment Agency and Social Service for many years, however still have not solved their problems (at least what to society seems like problem). Therefore, it means that individuals do not have any inner motivation to use their new skills, knowledge and support for job searching and continue to remain unemployed.

Motivation is the hardest aspect to change and to influence for professionals, there is not a big opportunity for long-term unemployed to change their lifestyle and get back to labour market, to change their social life and improve relationships. It is widely known, struggle in a job context impacts not only the job itself – it brings complications to relationships with family, with themselves; brings severe changes to personality itself. Few theories explain motivation phenomenon and how to affect it, most of them are highly cognitive, so it can be very frustrating (Krumboltz, Levin, 2010) to use them in work with long-term unemployed since they are mostly acting according to behavioural theories. That statement is proven by the results of the research – long-term unemployed are focused on very practical, behavioural aspects of their lives. They are not reflecting enough on why they are unemployed or what they need to change. The lack of inner motivation, small, but regular financial assistance from social security system, short-term illegal job options cover basic needs and stops them from moving forward.

Conclusions

In the situation when the average unemployment rate is relatively low and it is possible to get employed several groups of people remain unemployed for years. It means that they manage to deal with that situation financially and emotionally. For them it is easier to cope with it and stay in a "victim's" role in the eyes of society rather than take control over their lives and move forward.

- As a main reason for their unemployment respondents consider inability to find job. Market for the moment is full of open positions, however they still find reasons why they cannot find a job.
- At the same time all of them want to get a job that sounds like inadequate assessment of the situation. It looks like it is obligatory to find a job for long-term unemployed no matter what the obstacles are.
- As resources long-term unemployed consider State Employment Agency, family, relatives and friends. No one mentioned career counsellor as any type of special resource they might use.
- Long-term unemployed are not aware of their feelings and find it difficult to describe them. They cannot even imagine how they are going to feel when they become employed. Probably, because they are not thinking about it as a real opportunity.
- Soft-skill training might be very useful for long-term unemployed. It won't bring fast results (they won't get a job because of it), however it might help them understand themselves, their wishes, skills and opportunities.
- Different sessions and groups where long-term unemployed can take part are oriented to reflecting, what might bring them in a state of cognitive dissonance, what can be a start for them to overthink their future.
- Long-term unemployed receive different support in technical fields – how to create a CV and motivational letter. They can take part in different education activities, however hardly anyone is interested in how they are doing, what they are thinking. Activities that are taking care of their emotional balance and mental wellbeing should be introduced for long-term unemployed in resource programmes.
- Metaphorical associative cards are a suitable creative tool for career counselling with the long-term unemployed.

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Self-Assessment of Career Counsellor Competences in the Field of Career Guidance Depending on the Place of Residence

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Abstract: The importance of career guidance and the competences of a career counsellor is described and highlighted in this article. The counsellors are seen as key professionals assisting individuals in their educational and job transitions during their career, addressing both individual and labour market requirements. The aim of the study is to analyse the self-assessment of career counsellor competencies in the field of career guidance depending on the place of residence in Latvia. The self-evaluation of career counsellors regarding their competence was used. In the study 340 respondents took part from all Latvia regions, they were graduates of the last eleven years of the Career Counsellors Master's Program and other in-service career counsellors and school career counsellors working in schools, employment agencies and private consulting companies. The data were analysed statistically by using SPSS computer program: 1) crosstab method, 2) chi-squared test. The significance of the results and the most important conclusion: analysing the frequency of respondents' responses of excellent and good career counsellor competence depending on the place of residence, it can be concluded that excellent (Pearson Chi-Square p-value = 0.867) and good (Pearson Chi-Square p-value = 0.892) career counsellor competence not depending on the place of residence of the respondents, the excellent and good career counsellor competence is equally good everywhere in Latvia.

Keywords: competence, career counsellors, career guidance, career education, self-assessment.

Introduction

Nowadays, career guidance is becoming increasingly important for both for school students, for the unemployed and for workers, if the career change is needed. Career guidance is provided by career counsellors organizing events that include information on education and job opportunities, career education, and career counselling, with the aim of encouraging people in cooperation with employers, to make career decisions responsibly for choosing the education and a career path that suits their interests and abilities. To be able to do this qualitatively, career counsellors have to have appropriate competencies to provide career guidance.

A. Hirschi (2012) proposes human capital resources, social resources, psychological resources, and identity resources as critical career resources, which are essential for career development in the modern context. Human capital resources include factors such as education, experience, and cognitive ability. Social resources (called social capital) include the goodwill of individuals and availability of mentors. Psychological resources refer to psychological traits and states such as neuroticism, extraversion, conscientiousness, openness to experience, core self-evaluation, career self-efficacy, beliefs, or vocational hope. Career identity resources mean resources related to one's conscious awareness of oneself as a worker, of one's occupational interests, abilities, goals and values and of the importance of one's work. These ways of resources mutually influence each other in a dynamic process over time. All four resources can be seen as multiple component resources, each consisting of several different factors that together form the overarching resource for self-directed career management.

Such resources are necessary both for career counsellors themselves for their career development and for them to be able to support their clients in providing these resources. Career management competence can be described as an ability to act responsibly, ethically and prudently in career development situations; as well as mobilizing and combining personal and external resources to achieve desired career goals (Pavulens, 2015). One of the essential vocational services in schools is career guidance. School counsellors play a significant role in identifying psychological factors (such as career maturity, work and goal orientation, and self-efficacy) and they have an obligation to provide career orientation services to students so they can meet the challenges of the work environment and to minimize career disorientation among students that

may damage their future careers (Suryadi et al., 2020). Career counsellor roles are as follows: facilitator of personal and professional development, consultant for those seeking a job, motivator, information supplier for labour market and occupational areas, facilitating customer access to career opportunities in the labour market, designer to initiate development activities of staff in an organization (Bobu, Soitu, 2012). The roles of a career counsellor are diverse and all their manifestations form the counsellor's competence.

With support from key stakeholders like administrators, teachers, and parents, school counsellors and school psychologists can work collaboratively to increase students' college and career readiness. For example, school counsellors and school psychologists may start by creating and implementing a needs assessment, as it relates to the developmental tasks of students (i.e., self-regulation, self-efficacy, and self-competence) that must be negotiated to ensure career readiness (Hines et al., 2019). Nowadays, there is a serious progress towards self-directed career decision-making, the task of career counsellors is to promote it to their clients.

The Certification of the Transferable Competencies Based on the Counselling Process (Stan, Suditu, Safta, 2010) means carrying out activities which should be directed both at managing the career and at personal development activities: preventing and reducing professional failure; improving psychic comfort and self-image; awareness of psychics and intellectual potential, awareness of value system; active involvement in planning their life and career; evaluation and self-evaluation of personality directed at professional orientation; acquiring the competences of communication, participation, motivation, team building and solving conflicts. Career counsellors should pay attention to the development of clients' personalities.

The concept of counsellors' career development worked out by C. Wang and J.Z. Wang (2016) includes the need for systematic training, good professional ethics, the need for improving counsellors' credibility, vocational ability, career status and professional self-identity, as well as stating the borders of work and figures out counsellors' responsibility in practical work. Many studies have been conducted to assess career-related perspectives. To prepare highly competent school counsellors, practitioners also appreciate the importance of the following training domains: guidance of learning and personal development; family counselling; occupational guidance; methods and resources for educational diagnosis; and programme design, application and evaluation (Anaya, Perez-Gonzalez, Suarez, 2011).

To ensure successful career guidance, collaboration between political structures (political need for professionalization of career guidance and counselling), structure of the labour market for career professionals (roles and functions) and the structure of the higher education system in Europe (academic cycle, degrees) is needed (Katsarov et al., 2014). Comprehensive competences of college counsellors include the capability to understand policies, the capability of perfecting knowledge structure, good verbal expression and communicative abilities, talent in a variety of entertainment and sports, and the ability to learn in pace with time (Wu, 2010). Career counsellors must be able to apply their knowledge of the structure of the labour market and to use the opportunities offered by the education system to perform their job professionally.

In order for career counsellors to be able to work qualitatively and apply their professional competencies, they need to ensure well-being in the workplace. It is important that the consultation room is warm and bright and that there are no distractions. Workplace wellness includes the following dimensions: social, occupational, spiritual, physical, intellectual, and emotional (Brizga, Peks, 2014). The study of E. Dose showed that psychological needs and satisfaction of autonomy, relatedness, and competence had a mediating effect between objective career success (financial and hierarchical) and subjective career success (social and psychological), and well-being (Dose et al., 2018). The lack of time to perform all functions attributed to the counsellor appears as a key difficulty, followed by the complexity of the students' needs and the excessive dependence on guidance teachers (López Díez-Caballero, Manzano-Soto, 2019). The main cause of job burnout of career counsellors was violation of psychological contracts. To prevent career counsellors from burning out, the boundaries of responsibility need to be clearly defined and performance measurement improved; effective and continuous training, development opportunities and emotional incentives need to be provided, it is recommended to standardize career planning (Yang, 2017).

Several studies on the competencies of on-career counsellors and school career counsellors and career guidance have already been carried out: the study on the effectivity of career guidance (Haskova, Vaculik,

Leugnerova, 2015); the model of counselling of C.R. Ridley, D. Mollen and S.M. Kelly (2011), which include cognitive, affective, and behavioural components, the model has the integrated deep structure, which consists of 5 metacognitions: purposefulness, motivation, selection, sequencing, and timing; career counselling self-efficacy and multicultural counselling competence (Vespia et al., 2010; Mani, 2020); the study on competence-based education principles and performances applied to guidance career curriculum and in-service training programs and need to acquire strategic competences (Alvarez-Rojo, Romero-Rodriguez, 2007); competence to use the dialogue in career guidance of students (Soika, 2017); value identification methods helping career counsellors to identify career counselling boundaries as well as act professionally, ethically and wisely in assessing any particular situation (Racene, Dislere, 2019); skills for career counsellor – empathy, insight, communication and listening, flexibility and tolerance (Blank, 2017); the most frequently methods used in career counselling by L. Damberga (2013) are: clarification of values, card sorting method, SWOT analysis, interest inventory survey, case study, personal project, decision making, visualisation, life-space mapping, future visions, experience assessment, tree of life, way of life, role play, problem solving, decision making. The career counsellor must be able to apply these methods in working with the client.

The ability to use an online tool in career counselling is one of the competencies of career counsellors, what helps people in need of career guidance remotely; they can get career guidance from a career counsellor no matter when or where they are. The special competences that a career counsellor needs for using the Internet are as follows: designing a website; navigating across forums; establishing e-mail accounts and using e-mail; assisting customers in their searches for information about counselling; observing the legal acts and ethics regarding Internet counselling services; understanding the strengths and weaknesses of Internet counselling; using the Internet to identify and access continuous learning opportunities; evaluating the quality of information available on the Internet (Jigáu, 2007; Racene, Dislere, 2014).

A powerful conceptual tool to think about technology integration is the SAMR model (Terada, 2020), which lays out four tiers of online learning, presented roughly in order of their transformative power: substitution, augmentation, modification, and redefinition. Teachers often focus on the first two levels, which involve replacing traditional materials with digital ones. In classrooms where tech integration has moved to the mastery level, the last two levels of the SAMR model—modification and redefinition—should also be in the mix. Students in classes where this kind of mastery is embedded find more novel and immersive uses for technology. It's about being aware of the range of options and picking the right strategies for the lesson at hand. The study of N. Vronska showed that students make productive use of the various applications that are offered, value ICT as an instrument of permanent learning ($p= 0.000 < 0.05$) and value ICT as a medium of collaboration and social communication ($p= 0.009 < 0.05$). These results suggest the need for developing strategies promoting the effective use of technology resources (Vronska, 2016). Video using helps students improve knowledge, skills, and competence in lectures, which are necessary for an individual successful study process (Vronska, 2017). That's important because in a post-coronavirus world there's likely to be a greater emphasis on digital learning including digital career counselling.

Many scientists have been working on identifying the competencies of career counsellors and exploring their needs and importance. A scientific evaluation system for counsellor's ability has been established by H. Zhu and Z. Zhou (2011), it is consistent with the needs of counsellors, and is the key to building professionalism for counsellors. The major competences of career counsellor by P. Behrani (2016) are skills of counselling, acceptance and flexibility, integrity, sensitivity, listening, empathy, confidentiality, and understanding. Competences for counselling for minorities are worked out by T. Burnes, T. Hammer (2009).

As part of the project *Capacity building of the State Employment Agency*, a team of experts developed standards in *Quality manuals for educational and vocational counselling,* which are summarized in four categories of competences: *Education and Career*, *Counselling Practice*, *Personality* and *ICT skills* covering 12 key competences: education and training, information of labour market, training skills, communication with the client, evaluation, matching the profession and getting a job, ethics, individual skills, time management, stress and frustration, development, use of ICT and information management (Karjeras konsultāciju pakalpojumu…, 2009). They are designed for self-assessment of career counsellors' work.

The *Network of Innovations in Career Guidance and Counselling in Europe (NICE)* (Network for Innovations…, 2020) makes a major contribution in working out career counsellor competences. NICE is an open European network for the academic training of people who practice career guidance and counselling (career practitioners). Scientists from this network presented the fields of core competences of a career counsellor, which should be understood as fields of competence not as measurable competences (Katsarov et al., 2014): career assessment and information competence, career education competence, career systems development competence, career service management competence, career counselling competence, generic professional competence.

The following competences are required for a career counsellor to prepare the client to participate in the evaluation and validation process: to present clear and accurate information on the service to be provided, and agree on the course of action (creating the contract); to explain the client what self-evaluation is outline its benefits; to encourage the client to express his/her own personal experiences (autobiography) and assist his/her to extend what is relevant to reflect upon his/her competence; to understand and explain the evaluation scheme that the client can use to grade his/her competence; to comprehend the significance of the assessment of learning; to demonstrate intercultural awareness; to develop, maintain, and update a portfolio for assessment that reflects the overall life situation of the client and present it the best possible way; to have a good grasp of the specific methods of documentation that is required for recognition of prior learning; to understand of the requirements of and external assessor and the ability to explain the recognition process to the client; to ensure that the client has understood and gained ownership of the process (Martin, Sava, 2012).

These 10 above-mentioned competences were found the most relevant in the validation and consultation process. Client's tacit or documented real competencies are to be highlighted and compared with occupational standards and market needs. The career counsellor is expected to be able to guide the candidate to a job for such a solution for quicker certification of its competencies, for getting more chances for a better job and quicker employment.

The criteria for assessing the competence of career counsellors developed by the authors (Dislere, Vronska, 2020) have been used in this study (Table 2).

The aim of the study is to analyse the self-assessment of career counsellor competencies in the field of career guidance depending on the place of residence in Latvia.

Methodology

Research tasks:
- to analyse career counsellors' competences depending on the place of residence in Latvia;
- to discover the statistical relationship between two independent samples;
- to analyse the frequency of respondent answers and to determine statistically significant prevalence.

The study was developed at the Latvia University of Life Sciences and Technologies at the Institute of Education and Home Economics and conducted in late 2019 and early 2020. Questionnaires were sent out via email and social networks. The questionnaires were sent to graduates of the last eleven years of the Career Counsellors Master's Program and other in-service career counsellors and school career counsellors working in schools, employment agencies and private consulting companies in Latvia.

Table 1

Distribution of respondents' answers by age and place of residence (number)

Age \ Place of residence	20-30	31-40	41-50	51-60	60 and more	Total
Capital city	4	29	31	25	12	101
Regions	7	20	45	51	9	132
Republic cities	10	21	30	39	7	107
Total	21	70	106	115	28	340

For the study 340 questionnaires were analysed; 6 % of respondents are 20-30 years old, 21% of respondents are 31-40 years old, 31 % of respondents are 41-50 years old, 34 % of respondents are 51-60 years old, and 8 % of respondents are 60 years old and older. Respondents' answers were split by age and place of residence: capital city, Republic city and regions of Latvia (Table 1).

Respondents were asked to fill in questionnaires and self-assess their career counsellor competencies according to the criteria developed by the authors (Table 2), where competencies were grouped into 5 fields and several sub-competences were assigned to each field. Respondents were asked what career counsellor competencies do they think they have and to what extent (3-excellent; 2-good;1-poor).

Table 2

The criteria for assessing the competence of career counsellors (Dislere, Vronska, 2020)

N	Criteria field of competence	Sub-competences
1	Career information competence	• knowledge of updated information on educational and training • knowledge of updated information on employment trends, labour market, and social issues
2	Career education competence	• to integrate the theory and research into practice in guidance • to demonstrate the knowledge of the lifelong career development process • to use the goal setting task in training • to use career planning and decision making in training
3	Career counselling competence	• exploration competency • selection and using of diagnostic methods • use of counselling methods • to be able to interact with a client in individual counselling • to be able to interact with a client in group counselling • ability to use of dialogue in career guidance • a multicultural career counselling
4	Career service managing competence	• ability to implement a variety of career support models and programmes • ability to carry out a variety of career support models and programmes • skills to cooperate effectively in a team of professionals, • knowledge of (office) politics • networking ability
5	Generic competence	• empathy, insight • communication and listening, • flexibility and tolerance • observing ethical standards • awareness and appreciation of clients' cultural differences, • use online tools in career counselling • workplace wellness • awareness of own capacity

Research methods:
- data collection methods: questionnaire;
- data processing methods:
  - crosstab method (McCormick, Salcedo, 2017);
  - chi-square test (Gunarto, 2019).

The data were analysed statistically by using SPSS software.

Results and Discussion

The frequency of respondent answers was analysed using crosstabs, which summarize the relationship between different variables of categorical data (excellent career counsellor competencies, good career counsellor competencies and need to improve career counsellor competencies). Crosstabs were analysed below and showed the proportion of cases in subgroups (Tables 3 -8). Table 3 shows the **excellent** competencies of a career counsellor depending on the place of residence in Latvia: capital city, Republic cities or regions of Latvia.

Table 3

Excellent career counsellor competencies depending on the place of residence

Place of residence		Career information competence	Career education competence	Career counselling competence	Career service managing competence	Generic competence	Total
Capital city	Frequency of answers	69	116	194	126	437	942
	% of Total	2.2	3.6	6.1	3.9	13.6	29.4
Republic cities	Frequency of answers	85	145	223	150	512	1115
	% of Total	2.7	4.5	7.0	4.7	16.0	34.8
Regions	Frequency of answers	88	129	229	140	563	1149
	% of Total	2.7	4.0	7.1	4.4	17.6	35.8
Total	Frequency of answers	242	390	646	416	1512	3206
	% of Total	7.5	12.2	20.1	13.0	47.2	100.0

The crosstabs results were interpreted in percentages: career counsellors with excellent generic competence from the capital city make up 13.6 % of the sample, from Republic cities make up 16.0 % of the sample, and from regions make up 17.6 % of the sample. Career counsellors with excellent career service managing competence from the capital city make up 3.9 % of the sample, from Republic cities make up 4.7 % of the sample, and from regions make up 4.4 % of the sample. Career counsellors with excellent career counselling competence from the capital city make up 6.1 % of the sample, from Republic cities make up 7.0 % of the sample, and from regions make up 7.1 % of the sample. Career counsellors with excellent career education competence from the capital city make up 3.6 % of the sample, from Republic cities make up 4.5 % of the sample, and from regions make up 4.0 % of the sample. Career counsellors with excellent career information competence from the capital city make up 2.2 % of the sample, from Republic cities make up 2.7 % of the sample, and from regions make up 2.7 % of the sample.

The following hypotheses were tested for further data analysis:
- null hypothesis: the association between the place of residence and self-assessment of competencies is not statistically significant;
- alternative hypothesis: there is a statistically significant association between the place of residence and self-assessment of competencies.

The Pearson Chi-Square p-value = 0.867 (Table 4), so the null hypothesis is not rejected. It means excellent career counsellor competence not depending on the place of residence (capital city, Republic cities or regions) in Latvia.

Table 4

Crosstabs Chi-Square test of excellent career counsellor competence

Crosstabs Chi-Square test indicators	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.888	8	**0.867**
Likelihood Ratio	3.897	8	0.866
N of Valid Cases	3206		

Table 5 shows the **good** competence of a career counsellor depending on the place of residence in Latvia: capital city, Republic cities or regions of Latvia. The crosstabs results were interpreted in percentages: career counsellors with good generic competence from the capital city make up 7.4 % of the sample, from Republic cities make up 7.0 % of the sample, and from regions make up 10.2 % of the sample. Career counsellors with good career service managing competence from the capital city make up 6.1 % of the sample, from Republic cities make up 6.4 % of the sample, and from regions make up 8.9 % of the sample. Career counsellors with good career counselling competence from capital city make up 7.7 % of the sample, from Republic cities make up 8.6 % of the sample, and from regions make up 11.7 % of the sample. Career counsellors with good career education competence from the capital city make up 5.2 % of the sample, from Republic cities make up 5.0 % of the sample, and from regions make up 7.4 % of the sample. Career counsellors with good career information competence from the capital

city make up 2.5 % of the sample, from Republic cities make up 2.6 % of the sample, and from regions make up 3.5 % of the sample.

Table 5

Good career counsellor competence depending on the place of residence

Place of residence		Career information competence	Career education competence	Career counselling competence	Career service managing competence	Generic competence	Total
Capital city	Frequency of answers	120	245	364	290	351	1370
	% of Total	2.5	5.2	7.7	6.1	7.4	29.0
Republic cities	Frequency of answers	121	236	407	302	329	1395
	% of Total	2.6	5.0	8.6	6.4	7.0	29.5
Regions	Frequency of answers	164	349	552	420	481	1966
	% of Total	3.5	7.4	11.7	8.9	10.2	41.6
Total	Frequency of answers	405	830	1323	1012	1161	4731
	% of Total	8.6	17.5	28.0	21.4	24.5	100.0

The following hypotheses were tested for further data analysis:
- null hypothesis: the association between the place of residence and self-assessment of competencies is not statistically significant;
- alternative hypothesis: there is a statistically significant association between the place of residence and self-assessment of competencies.

The Pearson Chi-Square p-value = 0.892 (Table 6), so the null hypothesis is not rejected. It means good career counsellor competence not depending on the place of residence (capital city, Republic cities or regions) in Latvia.

Table 6

Crosstabs Chi-Square test of good career counsellor competence

Crosstabs Chi-Square test indicators	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.590	8	**0.892**
Likelihood Ratio	3.596	8	0.892
N of Valid Cases	4731		

Table 7 shows the need to improve the competence of a career counsellor depending on the place of residence in Latvia: capital city, Republic cities or regions of Latvia.

Table 7

The need to improve career counsellor competence depending on the place of residence

Place of residence		Career information competence	Career education competence	Career counselling competence	Career service managing competence	Generic competence	Total
Capital city	Frequency of answers	11	36	124	80	11	262
	% of Total	1.5	5.1	17.5	11.3	1.5	36.9
Republic cities	Frequency of answers	7	45	11	77	14	154
	% of Total	1.0	6.3	1.5	10.8	2.0	21.7
Regions	Frequency of answers	12	49	128	97	8	294
	% of Total	1.7	6.9	18.0	13.7	1.1	41.4
Total	Frequency of answers	30	130	263	254	33	710
	% of Total	4.2	18.3	37.0	35.8	4.6	100.0

The crosstabs results were interpreted in percentages: career counsellors who need to improve generic competence from the capital city make up 1.5 % of the sample, from Republic cities make up 2.0 % of the sample, and from regions make up 1.1 % of the sample. Career counsellors who need to improve career service managing competence from the capital city make up 11.3 % of the sample, from Republic cities make up 10.8 % of the sample, and from regions make up 13.7 % of the sample. Career counsellors who need to improve career counselling competence from the capital city make up 17.5 % of the sample, from Republic cities make up 1.5 % of the sample, and from regions make up 18.0 % of the sample. Career counsellors who need to improve career education competence from the capital city make up 5.1 % of the sample, from Republic cities make up 6.3 % of the sample, and from regions make up 6.9 % of the sample. Career counsellors who need to improve career information competence from the capital city make up 1.5 % of the sample, from Republic cities make up 1.0 % of the sample, and from regions make up 1.7 % of the sample.

The following hypotheses were tested for further data analysis:
- null hypothesis: the association between the place of residence and self-assessment of competencies is not statistically significant;
- alternative hypothesis: there is a statistically significant association between the place of residence and self-assessment of competencies.

The Pearson Chi-Square p-value = 0.000 (Table 8), so the null hypothesis must be rejected and the alternative hypothesis accepted. It means that the need to improve career counsellor competence is depending on the place of residence (capital city, Republic cities or regions) in Latvia.

Table 8

Crosstabs Chi-Square test of the need to improve career counsellor competence

Crosstabs Chi-Square test indicators	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	81.845	8	**0.000**
Likelihood Ratio	96.650	8	0.000
N of Valid Cases	710		

The frequency of respondent answers (the need to improve career counsellor competence) was statistically analysed using chi-square test (Tables 9-11).

The following hypotheses were tested for further data analysis:
- null hypothesis: the frequency of the answers is about the same in all places of residence;
- alternative hypothesis: the frequency of respondent answers differs significantly.

The frequency of capital city's respondent answers was statistically analysed in Table 9.

Table 9

Chi-square test statistics of capital city's respondents

Criteria	Observed N	Expected N	Residual
Career information competence	11	52.4	-41.4
Career education competence	36	52.4	-16.4
Career counselling competence	124	52.4	71.6
Career service managing competence	80	52.4	27.6
Generic competence	11	52.4	-41.4
Chi-Square	182.924		
df	4		
Asymp. Sig.	0.000		

Since the p-value = 0.000 is less than the significance level of $\alpha = 0.05$, the null hypothesis can be rejected. Thus, it can be concluded that the frequency of respondent answers is different. Statistically significant prevalence was the answer *Career counselling competence* (71.6). This means that capital city's respondents need to improve career counselling competence.

The frequency of Republic city's respondent answers was statistically analysed in Table 10.

Table 10

Chi-square test statistics of Republic city's respondents

Criteria	Observed N	Expected N	Residual
Career information competence	7	30.8	-23.8
Career education competence	45	30.8	14.2
Career counselling competence	11	30.8	-19.8
Career service managing competence	77	30.8	46.2
Generic competence	14	30.8	-16.8
Chi-Square	116.130		
df	4		
Asymp. Sig.	0.000		

Since the p-value = 0.000 is less than the significance level of α = 0.05, the null hypothesis can be rejected. Thus, it can be concluded that the frequency of respondent answers is different. Statistically significant prevalence was the answer *Career service managing competence* (46.2). This means that Republic city's respondents need to improve career service managing competence.

The frequency of region's respondent answers was statistically analysed in Table 11.

Table 11

Chi-square test statistics of region's respondents

Criteria	Observed N	Expected N	Residual
Career information competence	12	58.8	-46.8
Career education competence	49	58.8	-9.8
Career counselling competence	128	58.8	69.2
Career service managing competence	97	58.8	38.2
Generic competences	8	58.8	-50.8
Chi-Square	187.027		
df	4		
Asymp. Sig.	0.000		

Since the p-value = 0.000 is less than the significance level of α = 0.05, the null hypothesis can be rejected. Thus, it can be concluded that the frequency of respondent answers is different. Statistically significant prevalence was the answer *Career counselling competence* (69.2). This means that region's respondents need to improve career counselling competence.

Conclusions

Career counsellors provide career counselling through both informative and educational activities, combined with individual or group counselling, with the aim to encourage clients to make responsible and balanced career decisions in cooperation with employers, choosing an education and career path that suits their true interests, talents and capabilities. Nowadays, there is a serious progress towards self-directed career decision-making, the task of career counsellors is to promote it to their clients. The career counsellor has to demonstrate own professional credibility, vocational ability, career status and professional self-identity, as well as stating the borders of work and responsibilities, what would be helpful for the clients in choosing a career counsellor. Important career counsellor competencies are counselling, acceptance and flexibility, integrity, sensitivity, listening, empathy, understanding, confidentiality and use of ICT and information management skills. The authors acknowledge the following as the most important competencies of a career counsellor: career information competence, career education competence, career counselling competence, career service competence and generic competence, which were evaluated and the results of the research are as follows.

Analysing the frequency of respondents' responses of excellent and good career counsellor competence depending on the place of residence, it can be concluded that excellent (Pearson Chi-Square p-value = 0.867) and good (Pearson Chi-Square p-value = 0.892) career counsellor competence not depending on

the place of residence (capital city, Republic cities or regions) in Latvia. This means that excellent and good career counsellor competence is equally good everywhere in Latvia.

However, analysing the frequency of respondents' responses of the need to improve career counsellor competence depending on the place of residence, it can be concluded that the frequency of respondents' responses is different in the capital city, Republic cities or region (Pearson Chi-Square p-value = 0.000).

Analysing the differences in frequencies of respondents' responses using the chi-square test, it can be concluded that both respondents of the capital city (p-value = 0.000 < 0.05, residual = 71.6) and respondents of regions (p-value = 0.000 < 0.05, residual = 69.2) need to improve *career counselling competence*. However, respondents of Republic cities (p-value = 0.000 < 0.05, residual = 46.2) need to improve *career service managing competence*.

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Development of Corporate Culture Based on Improving the Motivation System of the Bank's Staff

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Abstract: The relevance of the topic lies in the fact that the transition to innovative personal management is currently a global trend to improve enterprise management processes in the context of deep integration of the world market, high-tech industries, increased competition and improved uncertainty of the external environment in relation to the enterprise, considering the motivational system. The purpose of the research is to study the role of motivation and corporate culture as the basis for innovative development and improving the productivity of an organization. The database was used by a banking organization; for instance, during the study the approaches of scientists were studied and diagnostic methods for studying the components of corporate culture were selected. Based on the results, a model of practical implementation was formulated, and a sociological experiment was conducted. On this ground using results of the experiment, statistical data on labour productivity were obtained and methodological recommendations were made for using the model proposed in the article. The results obtained are presented as a diagnostic tool and used to include the contact centre management in the work process.

Keywords: corporate culture, team building, motivation system in bank.

Introduction

The desire of the sovereign Republic of Kazakhstan to take a worthy place among developed countries with a stable economy puts forward as a priority the improvement of the quality of human capital as the basis for the state's competitiveness in the world community. In the structure of interrelations of elements reflecting the system – integral nature of this quality, team building and its corporate culture, considering the motivation system, is a system-forming factor that ensures the life of society, social groups, and a particular person. E.H. Schein agree that culture is the main source of an organization's identity and reflects the beliefs and values of the founder (Schein, 2013); culture has become a popular concept leading to a wide variety of research and implementation by various organizations, the role of leadership varies with the age of the organization from founding, through mid-life to old age as cultural issues vary at each stage (Schein, Schein, 2016). Historically, corporate employees were portrayed as communities with a common consciousness, they could be imagined as an extended family, and later the idea of a brand community emerged (Heller, Rowlinson, 2020). Questions about the development of corporate culture became the object of universal research, and did not only involve traditional historiographical analysis, but also included a study of archives, correspondence, resolutions and other regulatory banking documents, from which a general idea of the corporate component adopted in a given banking organisation was constructed (Mooij, 2004, 21). A.E. Dabija (2019) mentioned that organizational culture influences the performance of banking organizations. It was found out that many times it is difficult to improve the performance of the bank and to increase the level of motivation of the employees, because it aims to make a short-term profit, without the decision-makers concerned about the satisfaction of the employees.

As noted in the study (Ivanova, Ignatjeva, 2018, 364), the consistency of personal values and organizational values allows us to determine the level of support and acceptance of organizational values by employees, and helps to determine, thus, whether the direction of development is sufficiently supported by employees, and allows us to assess the readiness of the organization for change and the level of organizational culture in general.

As J. Hellevig emphasizes, within a dynamic corporative culture that actively interacts with the market, the most important thing is new creative ideas about how new creative technologies can be used in the company's business processes (Hellevig, 2012, 4). Research evidence argues that there is a strong focus on using culture as a potential for leading change and enhancing innovation in organisations (Carretta et

al., 2006, 22). Management is considered by us as follows, based on the theory of team building, the implementation of innovation development management requires the creation of a special stimulating environment in the organization, in which the creative activity and initiative of people is realized (Dyer, Dyer, Dyer, 2007). O.A. Sergienko has developed a model for assessing the impact of employee motivation factors on the bank's performance, in which financial, social incentives and medical insurance are recommended as motivating components (Sergienko et al., 2018). By realizing their creative potential and getting satisfaction from their work, people form an innovative culture of the environment. Such an environmental culture, its innovative spirit, will provide employees of the organization with the self-confidence necessary to search for, offer original solutions, experiment, defend their position, and freely express their own opinions. A well-thought-out organizational management system that creates a flexible and adaptive management system contributes to the innovation of the environment. The environment formed under such conditions depends on the introduction of innovations, the attractiveness of motivational mechanisms, the ability to innovate, especially in the field of work or process, and affects the improvement of not only cohesion, corporate spirit, but also the competitiveness of the organization itself (Wheelwright, Clark, 1992, 9).Interestingly, the researchers also see corporate culture as a social norm, not just a management control strategy, and suggest that organisations should seek to manage in a culturally sensitive way rather than just managing culture. (O'Donnell, Boyle, 2008, 15). Adaptation of employee values can include both external and internal motivation. It has been shown that internal motives are formed under the influence of external motivation. To stimulate the work activities of employees, the staff of banking institutions use various methods of influencing the behaviour of employees, both tangible and intangible (Kuzmynchuk et al., 2020). In human resources management, each manager is faced with the fact that when choosing a staff that satisfies all criteria, they are dismissed. And it begs questions about how to save valuable human resources, whether the decision to dismiss depends on the level of motivation, and what to consider for the manager to work for pleasure.

Researchers' findings highlight the important role of national culture, and research has found that countries with greater workplace harmony will have lower loan interest rate differentials. It is important that the company has more research capacity and development intensity, this will ensure more productive work (Cheung, Tan, Wang, 2020). In practice, there are many tools that managers use in their working time, depending on the working conditions, individual characteristics of employees and, additionally, the management culture, which is directly related to updating knowledge and considering modern management trends. J. Davidova and I. Kokina (2018) acknowledge that the value of an organization can be increased if the use of information and knowledge is approached holistically. Organizational learning has become an increasingly important study area over the past decades (Argyris, Schön, 1995; Senge, 2006). The researchers found that *companies that invest more effort in achieving higher-level organisational learning gain in both financial and nonfinancial terms* (Arh, Jerman Blaézic, Dimovski, 2012, 379). Knowledge management is the art of transforming information and intellectual assets into a lasting value for the organization's value "Customers" and its people. According to A. Kibanov, the incentive system must be responsive and adaptable to changes of any order (Kibanov et al., 2015). Moreover, researchers have empirically proven that competition-oriented firms, by attracting competitive workers, benefit from strong internal competition among employees, which increases firm value (Barth, 2015, 28), as well as bank management should motivate employees through fair remuneration to reduce staff fear and anxiety (Padmavathi, Subrahmanyam, 2018, 527).

Employee intrinsic motivation refers to a category of psychological state of mind in which an employee possesses personality traits that enable them to perform effectively without administrative influence. People with higher levels of intrinsic motivation for certain behaviours are better able to perform the intended actions and maintain them over time (Ryan, Connell, 1989, 749). An example of intrinsic motivation is how an employee feels self-actualised as a result of doing a task well. The criteria for internal motivation of an employee are their interest in the company's mission and goals, in the company's success and results, and their desire to cope with difficulties and tasks, their intention to develop on the career ladder, and finally their satisfaction with the results of their work (Nasri, Charfeddine, 2012, 169). For large banking companies providing complex financial services, the issue of developing a unified corporate culture to guide the actions of all employees becomes a challenge (Thakor, 2016, 6).

The level of employee engagement is determined by initiative, the desire to actively participate in the life of the organization, there is a high level of proactivity in performing corporate tasks, the basis of a good development perspective in the future the employee intends to stay in this area for a long time, is ready to perform additional tasks, the employee is responsible for each task, strives to improve work processes, make small action but significant changes, is friendly to colleagues and open to innovation.

The purpose of the research is to study the role of motivation and corporate culture as the basis for innovative development and improving the productivity of an organization.

Methodology

The authors put forward the following hypotheses:
1. if you develop the level of corporate culture based on the motivational system, the organization's productivity will increase;
2. the motivational system for employees is effective not only when using material (monetary) incentives;
3. for employees of the call centre, the main motivating incentive is material remuneration.

Further research was conducted to prove or disprove our hypotheses. The research was based on a banking organization, namely, 51 employees of the call centre in the period from July 2020 to November 2020.

To diagnose the current state of labour motivation of the staff, the following methods were used: the employee engagement questionnaire Q12 by assessment of involvement in work (Tokareva, Baronene, 2019, 15) and the method of Yu.M. Orlov (the questionnaire "Need to achieve a goal" (Golovey, Rybalko, 2002, 512-513)) tested on 51 employees of the call centre Department, who presented us with the following results.

Results and discussion

According to the results of the questionnaire to identify the level of "need to achieve the goal", only 20 % of the call centre has increased "need to achieve the goal", 47 % of employees have an average "need to achieve the goal", and 23 % have a low need to achieve.

The level of involvement in the work of call centre employees is represented by the following results: 30 % have a satisfactory level, but not sufficient, and 70 % have a low level of involvement.

The current state of culture in the team has prompted us to create a model for influencing the level of employee engagement and internal motivation in general activities through teamwork.

A high level of future culture can be achieved by creating favourable conditions, introducing the principles of mutual support and assistance into the team, maintaining friendly relations with the leadership and having a common mission (Tikhomirova, 2014, 162-167). The authors of the article agree with this view.

As research by academics shows, banks are more focused on net profit in management, so employees set goals for earning bonuses and receiving bonuses and rewards. Understanding and accepting this fact will allow building an effective incentive system based on the bank's accepted norms (Bennett, Gopalan, Thakor, 2016, 22).

The teamwork model is based on the principle of a systematic approach, bearing in mind the specifics of the employee's tasks and the necessary competencies. The author's model reflects the objective of teamwork development, the principles and the algorithm for achieving results (Figure 1). The system of teamwork, which was built based on a reasonable distribution of work and rest time, an increase in moral support from the management and regular training of employees, was introduced and controlled by group curators.

Banking requires a qualified approach to work; continuous update of the content of the services provided, the introduction of new system processes, the replacement of banking procedures with various programs of independent use increases the need for employees to develop skills of rapid learning, multitasking skills, skills in clear analysis and developed logic in perceived information.

It should be noted that the comprehensive development of corporate culture, interconnected with the motivation of personnel to work, affects the results not only of each employee individually, but as a whole, affects the results of the entire banking organization. Based on the works of research scientists

who presented us with methods for organizing working time, stimulating personnel in moral and material ways, the authors have selected and applied several options for incentives.

Corporate culture development model using a motivation system

Goal: to increase the level of corporate culture through the development of teamwork.	**Methodological approaches**: activity-based, situational, personal **Principles**: development, unity of theory and experiment, universal connection

Areas of work

Direction of information education about corporate culture	Trainings	Consolidation of the acquired knowledge and skills in the process of performing official duties

Organization of team activities

Methods: diagnostics of work motivation and collective mood, training sessions, assignment of team tasks, meetings and informal meetings, creation of corporate values and staff missions.	Forms: techniques, means of developing team spirit through role-playing games, business games, group exercises, business cases, imitation of office situations, corporate events, contests and quizzes, an intellectual club.

Result: an evolving corporate culture and increased productivity

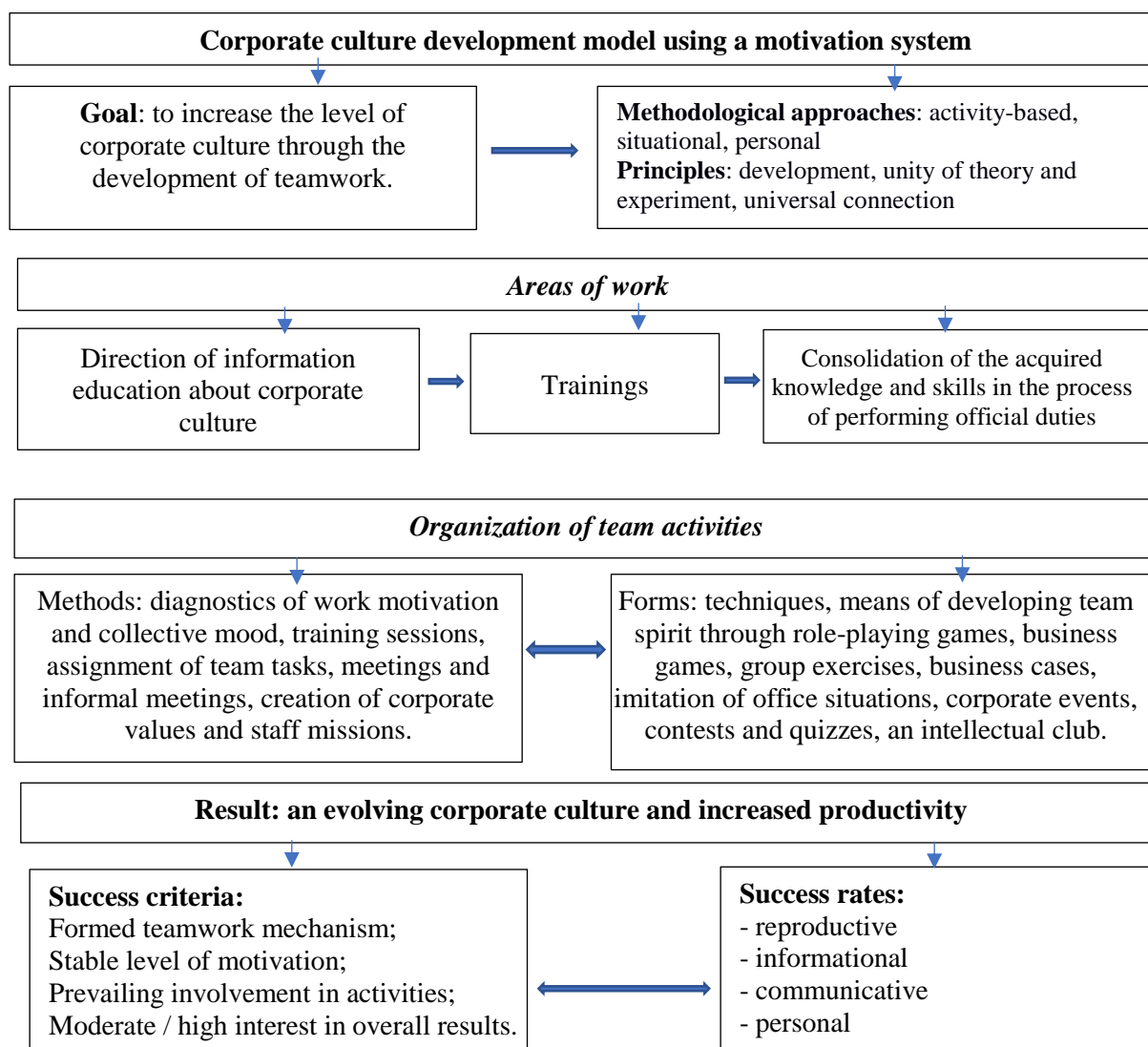| **Success criteria:** Formed teamwork mechanism; Stable level of motivation; Prevailing involvement in activities; Moderate / high interest in overall results.	**Success rates:** - reproductive - informational - communicative - personal

Figure 1. Corporate culture development model.

A more extended system of personnel motivation considered in the works of Z.M. Sadvakasova includes two motivation types: moral stimulation (involvement in management, in the composition of an expert group, granting the right to participate in commissions) and personal growth (referral to refresher courses, seminars, workshops not only in the country, but also abroad; provision of sabbatical inspiration comes; provision of methodological day); several methods of stimulating the quality of work: public recognition of the individual; public recognition of a group of people; personal recognition of merit, as well as types of motivation for intangible rewards: general corporate events; expressions of appreciation; workplace-related rewards; maintaining internal communications; career development and staff rotation; self-development of personality; delegation of powers (Sadvakasova, 2010, 193).

Scientists from different countries have proven the effectiveness of using the system for assessing Key Performance Indicators (KPI). According to the data presented, the authors once again proved the effectiveness of using this system, which helped us to quantify the company's results after the research.

To determine how the development of corporate culture based on increased motivation affected the results of bank productivity, the KPI system was used. KPI is a system for determining key performance indicators of organizations, which allows you to measure the degree of achievement of goals or the effectiveness of the process - effectiveness and efficiency.

The common KPI result is presented by the results of the assessment of certain tasks of the call centre for the quarter (July, August, September) and includes the average percentage of effectiveness (Table 1).

Table 1

KPI Results of Call centre

Months	SL	FCR	Percentage of lost calls	Percentage of lost calls at the operator level	Observation checklist CLN ≥80 %	Knowledge Testing≥80 %	Customer self-service rate ≥28 %
July	79 %	88 %	12 %	0.68 %	84 %	79 %	14 %
August	89 %	82 %	7 %	0.37 %	82 %	80 %	11 %
September	90 %	82 %	5 %	0.82 %	81 %	88 %	12 %
Average for the quarter	86 %	84%	8 %	0.62%	82 %	82 %	12 %

According to the KPI results, the call centre employees managed to maintain performance indicators and achieved success in the following areas of activity:

- SL – Service Level – service level which is an indicator of the activity of the call centre for processing calls;
- FCR – First Call Resolution – an indicator that determines the percentage of calls when the operator resolves the customer's question from the first call without ringing back;
- CLN – Observation checklist – assessment of the quality of work with clients, which includes an assessment of the duration of the call, the proactivity of the operator, the correctness of the provision of advice and cross-selling.
- knowledge testing is an indicator of the level of successful passing of weekly tests for knowledge of the Bank's product line, where 100 % success is 80 %;
- the level of customer self-service - an indicator of how much operators teach on the line of Customers to use self-service functions independently (they offer the use of Internet banking, self-checking the balance on a payment card through IVR (Interactive Voice Response) or other services.

Based on the personal assessment of each employee individually, the authors were able to calculate the performance results for cross-selling tasks (Table 2).

Table 2

Cross-selling report for the quarter

Month	Number of payment cards sold	Number of opened loan applications
July	84 pieces	1112 pieces
August	374 pieces	962 pieces
September	635 pieces	1200 pieces
Totals for the quarter	1093 pieces	3274 pieces

As a determination of the leading motive among employees as a criterion of success, the authors developed and used a model for the development of corporate culture using a motivation system, a test method was carried out, which determined the following results. Based on the employee motivation test, it is possible to identify which of the five motivational types is characteristic of the sample of bank employees: reward motive, social motive, process motive, achievement motive and ideational motive. The test consists of ten questions with five choices of answers. The researcher is asked to rank the answer options by assigning number five to the answer that is most correct for the respondent, number four to a less appropriate answer and so on up to number one. (Figure 2).

For 17 % of the interviewed respondents, the leading motive is the reward motive – when an employee works for money, profit and material benefits in the form of bonuses and allowances. As noted by 29 % of the respondents – motivated by social attitudes – for this part of the respondents, it is important to be approved by the management, reinforced with praise and respect from the team. This indicator tells us that the attention from the management has a positive effect on the employee's motivation and increases the importance of the tasks performed by the employee in the eyes of the employee. Pleasure from the work

process, enjoyment of one's own results are the leading motive for 22.4 % of the respondents. This motive for employees is an internal navigator for fulfilling the plan of tasks, which also compensates for the material side of motivation when an employee works not for profit, but for his own development. According to the research, 18.2 % of the respondents preferred the achievement motive – when the employee is striving towards the goal of self-assertion and self-realization, finding his own path, and paving the way to achieving high goals. To work and invest in achieving the company's common goals, together with the company's ideas to implement projects, became the leading motive for 21.4 % of the surveyed employees.
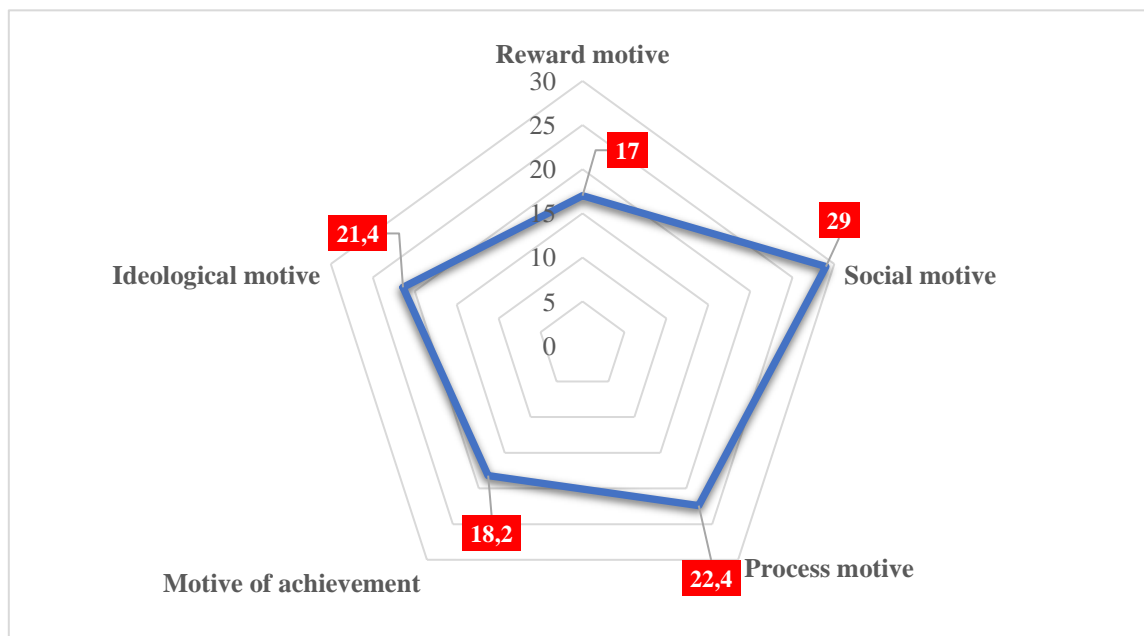
Figure 2. Determination of the "leading" motive among employees (%).

During the monitoring and implementation of the Global Motivation Fund, the authors agree with the A.A. Zhaitapova and Z.M. Sadvakasova (2019) proposals which should be followed while managing personnel:

- nonmonetary motivation of staff;
- nonmonetary incentive ideas for staff;
- inexpensive activities;
- corporate motivation.

Nonmonetary motivation of staff: help employees to see the results of their work and use their capabilities; offer interesting tasks during breaks and engage employees in their free time with useful activities; use as motivators titles such as "Best of ... month", "Best Department Specialist"; organise timely provision of complete and reliable information; organise providing autonomy (opportunity to choose ways of decision); allow participation in decision making;

What ideas it is advisable to adhere to the management of nonmaterial incentives for personnel: Praise employees for their work aimed at achieving the main objectives of the company; take an interest in the opinions of employees, involve them in developing ideas and making decisions; allow employees to independently manage their development; demonstrate trust in employees' honesty and sense of responsibility; demonstrate to employees that you are interested in their development; focus more closely on the individual approach to employees; Practice personnel changes; The most pronounced needs of experienced professionals are the need for reward, recognition and status. In this case, the stimulating factors will be appropriate material reward, honorary awards, personnel changes and a prestigious position. For less experienced professionals, the need for safety and accessories will come to the fore. Therefore, the best motivators for them will be a social package and participation in corporate events that provide for informal interaction and contribute to team building; maintain a positive emotional attitude; use entertainment as an incentive.

Low-cost arrangements: arrange for a parking space in front of the front entrance for a month; arrange for free cinema tickets (theatre, swimming pool); allow a prestigious car to be used to visit a major client; consider offering free handyman services when repairing an employee's flat, provided that the employee pays for the materials themselves; discuss providing one paid holiday for the employee at a time convenient to them without regard to the holiday schedule.

Corporate motivation: carry out corporate adaptation of new employees to inspire them to work; consider targeted use of corporate press (outlining corporate values and rules in brochures and messages); organise displaying texts that list corporate slogans, values and rules on the organisation's stands; introduce regular speeches by the management with the wording of corporate values, goals and rules; start 'pumping up' the staff every morning before work by singing anthems, leading employees' speeches with the wording of work goals; offer regular repeating of the values, goals and principles of the corporate culture for the employees to deeply assimilate them; to conduct business trainings with boarding house visits, conducted with a certain regularity (for example, one training per quarter) and aimed at increasing the professionalism of employees and developing their "common language" and common approaches to work; to offer teambuilding trainings aimed at creating common communication and emotional experience of participants, as well as reducing internal competition, reducing the level of conflict and optimising the social and psychological atmosphere in the organisation; having to arrange anti-stress trainings.

As a result, the development of corporate culture, including the use of the motivation system, is realized with the help of a systematically built model, and is not limited to the applied methods of organizing labour activity. Each block of the model requires clarity of execution and regular inclusion of elements of corporate culture in the workflow – planning meetings, organization of the workplace, collective meetings, minute praise and others.

Conclusions

Thus, the hypotheses that the authors put forward have been confirmed and rejected in our study.

Hypothesis №1, which assumes the development of the level of corporate culture based on the motivational system with the consequent increase in the productivity of the organization is confirmed, an increase in the fulfilment of the sales plan is visible.

Hypothesis №2, which states that the motivational system for employees is effective not only when using material (monetary) incentives was also confirmed, and it is visible that one of the winning factors of performance were the elements of the motivational system for increasing level of corporate culture.

Hypothesis №3, that the main motivating incentive for contact centre employees is financial rewards, was disproved and based on the final test to determine the leading performance motive, was confirmed: the reward motive scored the lowest and was last on the list.

The results of the study showed that in the studied organization the work process is weakly supported by the system of labour motivation and the level of corporate culture is at a low level. The results of the analysis served as an information basis for the development and substantiation of methods for improving corporate culture, whereas the motivational system.

For competent leadership of the team and corporate culture when forming a personnel motivation system, the authors recommend following the following steps:
1. diagnostics of the existing system of motivation;
2. formulation of goals and policies of the organization in the field of motivation;
3. development of a system of material and nonmaterial incentives;
4. development of internal regulatory documents that fix the system of motivation and incentives for personnel.

Thus, a study was carried out to study the motivation of employees in the context of the innovative development of corporate culture: an analysis of their mutual influence at the theoretical and practical level was carried out; based on the results of the constructed diagnostic study, a model for the development of corporate culture was developed using the personnel motivation system.

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Consulting Support of Technologization of Professional Practice of a Teacher

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Abstract: The article presents the results of experimental work on consulting support of professional practice of a teacher, which introduces local innovations. These innovations are initiated by teachers who need advice on developing a project to implement them in their professional activities. Innovative changes developed by the teacher infringe the order in the implementation of existing professional practice, which leads to the need for its technologization. The presented circumstances actualize consulting support as a form of teacher training directly at the workplace. The purpose of the research stated in the publication is to identify the impact of consulting support on the formation of competencies of consulted ones on the implementation of local innovations developed by them in their own professional practice. Consulting support of technologization by teachers-clients of their own professional practice, after the introduction of local innovative changes, was implemented in a mixed type, combining offline and online formats. The authors of the publication propose to evaluate the success of participants in consulting support for the products developed in its process: the project of technologization of professional practice and the program for its implementation. The obtained data were statistically processed using the parametric method of variance analysis. Statistical processing of the data obtained confirmed the effectiveness of this approach. Professional growth and motivation of educational institution specialists are regulated with statistical accuracy by consulting, which acts as an educational management practice. The consulting on the development of local innovations should be carried out continuously to support the teacher's strategically significant needs, and not just their fragmentary situational requests.

Keywords: continuing education of a teacher, technologization of professional activities, consulting support, consulting in education.

Introduction

The relevance of the research presented in this article is due to the exponential development of technologies, which implies the activation of the development of subjects in the field of education in the areas defined by the main trends of qualitative changes in modern society. Since the end of the last century, research in the field of professional education, that reveals the diversity and contrast of their interpretation and identifies the problems that arise in their implementation (Watkins, 1995; Niemi, 1985), has been intensified to find the forms of training specialists in their workplace. These studies continue throughout this century, revealing the issues that shape education based on the analysis of the main economic, political, social and technological trends as factors that have a significant impact on the preparation of society for the era of artificial intelligence (Briede et al., 2020; Smith, 2017; OECD, 2019;). One of the vectors of research in this area is the implementation of educational processes considering the values of joint leadership of managers and subordinates while introducing innovations into the professional practice of specialists (Otter, Paxton, 2017).

This case study analyses the practice of consulting support for the technologization of pedagogical activities of specific teachers who have completed a refresher course at the Federal State Budgetary Educational Institution of Higher Education «Smolensk State University».

When organizing and implementing consulting support, we were guided by the leading ideas of foreign colleagues who are engaged in the research on the impact of consulting on the client's experience (Parikh, 2015; Portere, Briede, 2019), opportunities for providing online consulting services (Garza, Mundy, Kupczynski, 2018; Urdzina-Merca, Dislere, 2018), analysis of the assessment of its consequences (Dislere, Vronska, 2020; Phillip, Trotter, Phillips, 2015), problems of forming technological literacy (Hasse, 2017) and technological culture of teachers (Adam, 2017).

Consulting support for the technologization of the teacher's professional practice after the introduction of local innovation was carried out according to the model which we developed (Lukashenia, Sianiuta, 2020), using gamification (Lukashenia, Levanova, Tamarskaia, 2020). The approach developed by us correlates with the conclusions available in scientific research on the productivity of simulation activities for the development of professional competence of specialists (Cook, 2018). We rely on the researchers' conclusions about the need to create communities of practicing teachers whose performance assessment necessarily includes self-assessment (Danielson, 2016; Offen, Sandretto, 2019).

The purpose of the research stated in the publication is to identify the impact of consulting support on the formation of competencies of consulted ones on the implementation of local innovations developed by them in their own professional practice. As visualized indicators that confirm the formation of the declared competencies of the consulted ones, we have accepted the success of their passing stages and procedures of consulting on the technologization of their own professional activities in the changed conditions. The products of visualization of these indicators in our research are the projects of technologization of the professional practice and the program of its implementation developed independently by the participants in the process of consulting.

Methodology

All 97 participants in the consulting events were divided into several groups: three groups (43 people) – full–time training and three groups (54 people) – part-time training in the direction 44.03.02 "Psychological and pedagogical education". Consulting support of technologization by teachers-clients of their own professional practice after the introduction of local innovative changes was implemented in a mixed type, combining offline and online formats, according to the program presented in Table 1.

Table 1

The program of consulting support of the professional practice of teachers.

Consulting event	Teaching consulting	Process consulting
Development of a model of innovative changes at the local level implemented in professional practice	Classification of innovations in the pedagogical sphere	Analysis of the innovative development strategy of an educational institution
		The procedure for correlating innovations initiated by the clients with the strategy of innovative development of an educational institution (SWOT-analysis).
Development of a model of professional practice modified at the local level	Educational technology and related categories.	Analysis of the implemented pedagogical system and its schematization.
	Technological characteristics of the didactic category "approach".	Design of an ideal system of intended pedagogical activity, in which innovations initiated by clients are implemented.
Development of the process of technologization of the changed professional practice at the local level	Possibilities of using pedagogical techno-logies based on the theory of learning differentiation in professional activities	Development of a project and program for technologization of the client's teaching practice, in which the innovation initiated by the client is implemented
	Possibilities of using pedagogical techno-logies based on the theory of developing learning in professional activities	
	Possibilities of using pedagogical techno-logies based on the theory of program-med learning in professional activities	Development of a project and program for technologization of the client's teaching practice, in which the innovation initiated by the client is implemented
	Possibilities of using pedagogical techno-logies based on the theory of gradual assimilation of knowledge and collective learning in professional activities	

The activity of implementing a consulting event is a closed cycle (normative ring), which consists of a system of consecutive types of activities: goal setting (G) – design (D) – action (E) – analysis as an awareness of a new situation that has arisen as a result of the action (A). While conducting consulting

support for the formation of the technological culture of participating teachers, we considered it sufficient to divide the normative ring into sixteen parts: at each of the stages presented above, participants carry out activities similar to their sequence. The states that participants in consulting events live in our study, moving along such a normative ring, are shown in Table 2.

Table 2

Stages of a closed cycle of consulting procedures

Type of activity	The name of the stage	Functions of the stage
GOAL SETTING	gG – motivation stage	encourages the client participant to engage in consulting activities to develop a project for making innovative changes to their own practice;
	dG – stage of forming ideas about the goal (goals)	independent formulation by the client participant of the tasks that are supposed to be solved during the implemented consulting procedure;
	eG – stage of direct goal formation	the client participant independently formulates and arranges the goals according to the degree of significance for the consultant;
	aG – stage of the analysis of consulting activity goals	reflexive understanding of the structure of the developed goals by the client participant for their compliance with the motive of their participation in consulting;
DESIGN	gD – stage of motivation to get involved in the activity of action design	encourages the client participant to engage in innovative changes in their professional practices;
	dD – stage of forming ideas about projecting	independent planning by the client participant in the design process of their professional activities;
	eD – stage of creating of the project of actions	independent design of the process of introducing local innovations in their own professional practice by the client participant;
	aD – stage of analysis of the developed project	reflexive understanding of the developed project by the client participant regarding its technological productivity;
ACTION	gE – stage of motivation to start acting	the decision making of the client participant to engage in game modelling of possible changes of an innovative nature in their own professional activities
	dE – decision-making stage for choosing a participation position	independent selection of a specific position ("spectator", "actor", "screenwriter") by a participant-client in game modelling;
	eE – stage of action implementation in gamification	the work of a client participant in the game modelling within a specific position ("viewer", "actor", " screenwriter»);
	aE – stage of situational analysis of the completed action	reflexive awareness of the process of participation in game modelling by the client participant;
ANALISIS	gA – stage of motivation to analyse actions performed in game modelling	formation of the client participant's motivation to analyse the results of the actions carried out in game modelling to make changes in their own professional activities at the level of local innovation initiated by them;
	dA – stage of understanding how to analyse actions per-formed in game modelling	designing the process of analysing completed actions by using project development activities as the basic process;
	eA – stage of analysis of actions performed in game modelling	analysis of actions performed by the client participant in game modelling: in compliance with the project created in the implement-tation of the "design" activities; to achieve the defined objectives; in the new situation arising as a result of undertaken actions;
	aA – stage of evaluating the ways of performing the analysis	reflection of the analysis process, generation, construction of new methods of analysis, goal setting, design and action.

The sequence of states, which are lived by actors as participants in consulting activities presented above, was included in the matrix reflecting the results of self-analysis upon passing these stages.

A similar matrix for each consulting subject was filled in by at least two experts on the base of direct observation or video recordings of the consulting event. A summary matrix of the stages of consulting procedures recognized as completed by each consulting client was accepted for statistical processing. It is compiled by correlation of the ranks of the corresponding symbols in the self-assessment and expert matrices (the corresponding symbol is assigned if it is present in the working matrix at least twice).

Next, the number of completed (n+) and non-completed (n–) stages of consulting procedures were recorded and the share of each of them in the total number accepted (in our case, n=16) was calculated.

As an indicator of the success of consulting procedures, we took the criterion of achievement of consulting participants (DK). It is calculated by dividing the total value of the achievement levels of each of them by the number of consulted levels (Formula 1).

$$DK = \sum_{i=1}^{N} D\,i/N, \qquad (1)$$

where N – number of client participants.

In its turn, the level of achievements of each consulted one (i) is represented by an indicator that reflects the number of stages of consulting procedures that are recognized as completed by them (n+):

$$Di = (n+)i/\,n \qquad (2)$$

The obtained data were statistically processed using the parametric method of variance analysis.

Results and Discussion

A summary matrix of the stages of consulting procedures for making a decision by a consulting participant to make innovative changes in their activities (up to the development of the project and program), which can be considered passed by each client during three consulting events in the framework of professional development of Bulgarian teachers, was processed using the computer program STATISTIKA 8. The results of the statistical processing of the results are presented below.

According to our methodology, the statistical data were processed using the analysis of variance, so when identifying the consistency of self-assessment and expert assessment, we took into account the indicators of the coefficient matrix of the Pearson rank correlation (Table 3).

Table 3

Consistency of self-assessment and expert evaluation of the consulting activities
(Pearson correlation coefficients)

	Self-assessment	Assessment of expert 1	Assessment of expert 2
Self-assessment	1.00	0.54	0.59
Assessment of expert 1	0.54	1.00	0.96
Assessment of expert 2	0.59	0.96	1.00

The obtained results visualize the coincidence of the expert assessment (r = 0.96) and the discrepancy between the self-assessment of the participants of consulting procedures. All obtained correlations are considered significant, since their values more than p = 0.001. However, for consistency of opinions, relationships of at least 0.9 are usually considered; in extreme cases, based on the definition of reliability in psychodiagnostics – from 0.75. The current situation has led us to the necessity to consider the assessment and self-assessment separately, while the expert assessments for further statistical processing were combined into one general assessment (the arithmetic mean is considered)

Conditionally, the participants of the consulting events (based on the results of expert evaluation of passing the consulting stages) were divided into three groups (players, viewers, scriptwriters), which together made up the first independent variable "group". The combination of self-assessment and expert assessment makes up the second independent variable "assessment" in our study. Using the formula ((Formula 2), we determine an indicator that reflects the level of achievement of each client participant through the number of stages of consulting procedures that they have passed. As a result, we have that

different samples are affected by different combinations of two factors. This circumstance suggests the need to use two-factor analysis of variance in our study, the results of which are presented in Table 4.

Table 4

Results of variance analysis of the results of the participants in the consulting events

	SS	df	MS	F	p
Group	0.81	2	0.40	33.002	0.000000
Error	1.15	94	0.01		
Evaluator (expert)	0.00	1	0.00	0.245	0.621998
Evaluator *Group	0.06	2	0.03	5.377	0.006149
Error	0.48	94	0.01		

The results of the testing for the normality (homogeneity) of variance (as the main condition for the analysis of variance) showed that not all variables in all cells of the dispersion complex are distributed normally. In this case, we adhere to the opinion of scientists about the stability of the F-test due to deviation from normality. In particular, we assume that the variances in different groups are the same (assuming that the variance is uniform). The module "analysis of Variance" contains a large set of statistical criteria that allow to detect heterogeneity of variance. However, H.R. Lindman shows that the F-criterion is quite stable with respect to violation of the assumption of uniformity of variance (Lindman, 1974, 33). If the number of observations in a cell is large enough, then the deviation from normality does not matter much due to the Central limit theorem, according to which the distribution of the average value for a large sample size is close to normal, regardless of the initial distribution (Alexander, Winne, 2009).

As can be seen from the table, the effect of the variable "assessment" indicates that the assessment of experts does not differ from the self-assessment of the consulting participants; the interaction of the variables "group" and "assessment" is significant and subject to interpretation. Comparison of all combinations of the levels of independent variables is possible using the Duncan a posteriori criterion, the calculations for which at this stage of processing the results of consulting are presented in Table 5.

Table 5

Duncan's a posteriori criterion (only statistical significance levels), calculated based on the results of the consulting support

Group	Evaluator (expert)	{1}	{2}	{3}	{4}	{5}	{6}
Players	self-assessment (%)		0.072081	0.083956	0.041500	0.000020	0.000011
Players	General assessment of the experts	0.072081		0.670102	0.447531	0.000011	0.000003
Viewers	self-assessment (%)	0.083956	0.670102		0.616139	0.000003	0.000004
Viewers	General assessment of the experts	0.041500	0.447531	0.616139		0.000004	0.000004
Scriptwriters	self-assessment (%)	0.000020	0.000011	0.000003	0.000004		0.002143
Scriptwriters	General assessment of the experts	0.000011	0.000003	0.000004	0.000004	0.002143	

According to the results of the table, expert evaluations for players and spectators do not differ (p=0.4475). Expert evaluation and self-evaluation did not differ for the players (p=0.0720) and viewers (p=0.6161), but the scriptwriters were more critical of themselves than the experts (p=0.0021). Evaluations of the group of screenwriters indicate their absolute leadership in the process of successful completion of the consulting procedures.

To clarify the assessment of the success of the participants in the consulting process, we used the results of descriptive statistics (Table 6).

Table 6

Descriptive statistics for three groups of participants-clients of consulting support

Group	Evaluator (expert)	average result	Standard error	trust interval "-95%"	trust interval "+95%"	N
Players	self-assessment (%)	0.81	0.01	0.78	0.84	50
Players	General assessment of the experts	0.77	0.01	0.75	0.80	50
Viewers	self-assessment (%)	0.76	0.02	0.73	0.79	35
Viewers	General assessment of the experts	0.75	0.02	0.72	0.78	35
Scriptwriters	self-assessment (%)	0.93	0.03	0.88	0.99	12
Scriptwriters	General assessment of the experts	1.00	0.03	0.95	1.05	12

The results of the table demonstrate the absence of significant differences of opinion on the assessment of the success of the participants-clients of consulting procedures by experts with their self-assessment. According to the results of the table, all groups of participants in the consulting support of the technologization of the teacher's professional practice have successfully passed all its stages.

Conclusions

The presented results of an experimental study of consulting support for the technologization of a teacher's professional practice confirm the assumption that consulting on the development of local innovations should be carried out continuously to support the teacher's strategically significant needs, and not just their fragmentary situational requests.

The obtained results allow us to conclude that it is possible to use the indicators of its productivity tested in consulting in the form of:
1) the project of technologization of professional practice of a teacher, changed in accordance with the implemented innovation, which they also developed;
2) programs for implementing the process of technologization of the teacher's changing professional practice.

The combination of self-assessment of these consulting support products with their assessment by experts not only increases the reliability of the assessment, but also helps motivate teachers to develop and implement local innovations in their own professional practice.

The results of the experimental study confirm our assumption that consulting support of the technologization of teacher's professional practice are:
1. a form of continuous learning that helps to eliminate problems of insufficient information content;
2. means of actual innovative transformation of professional activity of a teacher in accordance with the needs of external society and the needs of the subjects of educational activity;
3. means of preparing for professional and personal development in the implementation of professional practice in changed conditions, leading to a high-quality compliance of their activities with the requirements of the professional standard;
4. a rational possibility of sustainable preservation of previously formed professional and personal quality of teachers to establish a stable implementation of professional practice at a new (innovative) level of educational activity.

Professional growth and motivation of educational institution specialists are regulated with statistical accuracy by consulting, which acts as an educational management practice.

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Somatic Health Level Assessment Importance in Military Personnel Group

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Abstract: Topicality of research is indicated by importance of somatic health level assessment of military personnel that is a basement for fulfilling military tactical tasks and developing future military career. Physical endurance capacities develop during military training and have impact to the body composition parameters, health capacity level. Medical specialists carried out the assessment of health capacity of military personnel annually. The aim of the study is to evaluate the somatic health and its components in military personnel group that includes cadets from 1st till 5th study year in National Defence Academy of Latvia. The evaluation of somatic health level carried out according H.L. Apanasenko methodology that is a complex approach taking in count anthropometric parameters, physiological measurements, and tests` results in standard physical exercises. The statistical methods were used for analysis of data in SPSS version 20. There are fixed statistically significant correlation between somatic health level and anthropometric parameters (body mass, body mass index value) as well physiological parameters (systolic blood pressure value, hand muscle force, pulmonary vital capacity). The significance of the results is that the level of somatic health level connects to the parameters of body composition and functional parameters. Physical endurance capacities are based on somatic health level assessment, individuals with higher body mass index level, with higher blood pressure parameters, with lower vital index value as well with, longer restoring interval after standard physical exercise had lower somatic health level value. The changes of somatic health level in study group showed the impact of military training duration that important for future military career.

Keywords: military personnel, somatic health level, anthropometric parameters, physiological parameters.

Introduction

Health capacity of military personnel is essential for fulfilling military tactical tasks. Medical specialists assessed annually health capacity of military personnel by from various points of view and aspects. The assessment of somatic health level was provided by using H.L. Apanasenko method that includes combined anthropometric methods, physiological methods, and tests with standard physical exercises. That is known that such factors as the age indicated changes of anthropometric parameters (body mass value, waste circumference and waste and hip circumference ration) and physiological parameters (arterial blood pressure) as well in military personal selection (Neves, 2008; Wenzel, Souza, Souza, 2009; Guziy, Romanchuk, 2016; Prontenko et al., 2018; Plavina, Karklina, 2018). Stressful military surrounding had impact on hypertension incidence in military personnel population comparing data of arterial hypertension incidence to civil population group (Lee et al., 2018).

Analysis of health status and health problems in military personnel group revealed that individuals with higher body mass index (BMI) value as well had higher rate of arterial hypertension (Burley et al., 2018). There are various risk factors correlated to arterial hypertension rate: age, overweight, adiposity and professional activities. The level of health capacity is crucial for manifestation of functional disorders, musculoskeletal pathological changes and diseases also in military personnel group (Platsas et al., 2014; Ashnagar, Sartang, Habibi, 2017). Topical problem in modern society is overweight and high adiposity rate (Yumuk et al., 2015). Overweight problems have found in military personnel group despite to their higher physical activity rate and physical endurance level and dietary habits (Plavina, Gegere, 2019). Evaluation of body composition parameters and indices like Body Mass Index, fat mass value undergone periodically assessment.

Adiposity problem has fixed for 14 % participants in military personnel selection group as well the increasing of BMI value and free fat mass % (Durán-Agüero et al., 2017; Fajfrová et al., 2016). Military training is important for support and development physical endurance of military personnel. It has

impact on the body composition parameters and, cardiovascular response (Looney et al., 2018). Therefore, it is important to use objective methods for precise evaluation of body composition with its connection to the somatic health level. It also allows to escape wrong interpretation analysis of BMI value and changes of body composition in cases when body mass and BMI value exceed standard (Heinrich et al., 2008, Aandstad et al., 2014). Purposeful physical training brought changes of physical/sport tests` results and body composition parameters. Individuals with higher value of BMI shown increasing of running time in exercises (Pierce et al., 2017), but individuals with BMI over 30 (with adiposity) shown lower sports` results than individuals whose BMI was below 30 (Sanderson et al., 2018).

Trauma risk factors in military field are higher level than in civil life, but analyses of incidence traumatic injuries shown that the age, and anthropometric parameters (higher value of BMI) have not expelled influence on injuries rate (Rappole et al., 2017). Epidemiologic studies of health problem (diseases rate) in military personnel group revealed that incidence of metabolic syndrome is ten times less than in civil population (Weber, 2018; Schulze et al., 2017).

Importance of correct evaluation of impact the professional training to anthropometric and physiological parameters was essential for management preventive measures and support health capacity. The aim of the study is to evaluate the somatic health and its components in military personnel – cadets' group in the National Defence Academy of Latvia.

Methodology

The study was conducted on military personnel (n=177) in aged from 19 years till 30 years, of both genders (male (n=160) and female (n=17) in National Defence academy of Latvia; the study group included cadets from 1st till 5th study year. To assess the somatic health level, data collected by using morpho-functional methods that included anthropometric measurements and tests with standard physical exercises were used. The evaluation of somatic health level was carried out according H.L. Apanasenko. The following anthropometric and physiological parameters are determined: body mass (kg), body height (cm), dynamic hand flexor muscle force (kg) by using hydro-dynamometer SAEHAN, pulmonary vital capacity (ml) by using spirometer, heart rate in rest and recovery time after standardized physical load (in 30 s); blood pressure by using electronic manometer A&D Medical.

The assessment of systolic blood pressure data was done according European Guidelines about arterial hypertension (Williams et al., 2018). Skin folds thickness fixed by using calliper (SAEHAN) in four places (in bicipital, tricipital, subscapular and supra-iliac regions), and measurements used for calculation body fat mass (in %). Analysis of following indices are completed: body mass index (in points) that calculates as ratio of body mass (in kg) and squared body height (in m); vital index (in points) that calculates as ratio of pulmonary vital capacity (in ml) and body mass (in kg); power index (in %) that calculates as ratio of hand dynamometry (in kg) and body mass (in kg). Robinson index (in %) is calculated to multiply heart rate per min to systolic blood pressure (mm Hg column). All indices value summarized, and total sum has evaluated according somatic heath level scale in five levels (low (< 3), below moderate (4-6), moderate (7-11), above moderate (12-15), high (16-18).

Statistical analysis shows that only body mass and body height correspond to the normal distribution, accordingly Spearman correlation was used for nonparametric data analysis. Statistical analysis has been done by using SPSS version 20.

Results

The analysis of the somatic health level in study group had shown that among the respondents in groups from 1st till 5th study years have not revealed significant changes (Figure 1). The average moderate somatic health level (7-11 points) occurred in 44.6 % (n=78) respondents of study group; the high somatic health level found for 2.8 % (n=5) respondents. The individual variants of Somatic health level have influence on developing physical endurance during military training process, also have impact on physiological and anthropometric parameters level.
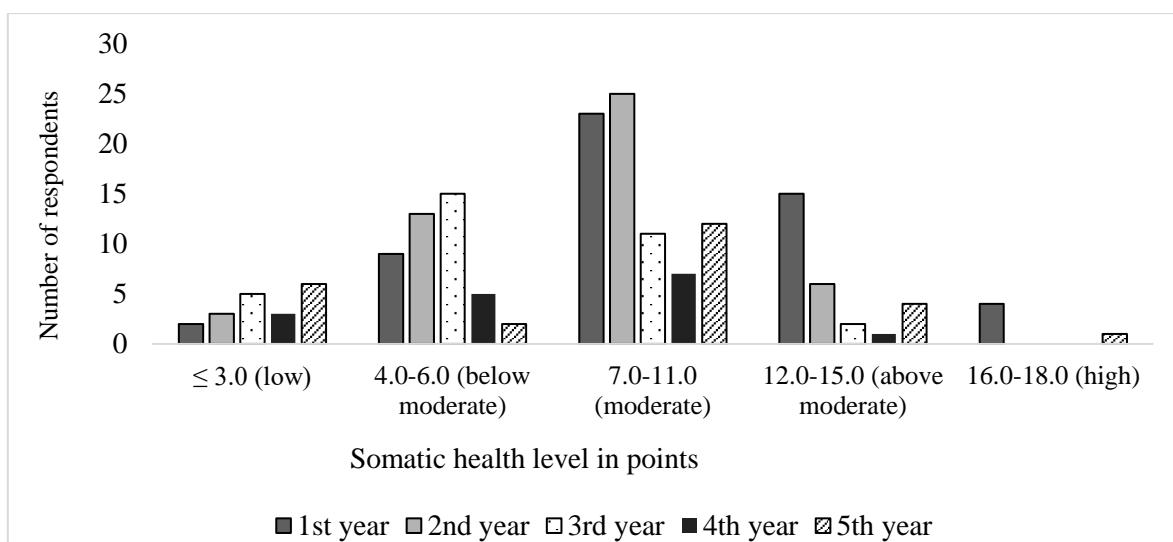
Figure 1. Distribution of respondents of the study group (from 1st till 5th study year) according somatic health level value.

Anthropometric parameters

Average value of Body mass in study group was 80.18 ± 11.72 (SD) kg. The largest number of respondents of study group (35.5 %, n=63) had body mass value in the interval from 71 kg until 80 kg (Figure 2). Body mass value increased with age, and the negative statistically significant correlation was found between body mass and somatic heath level (r = −0.432, p<0.01).
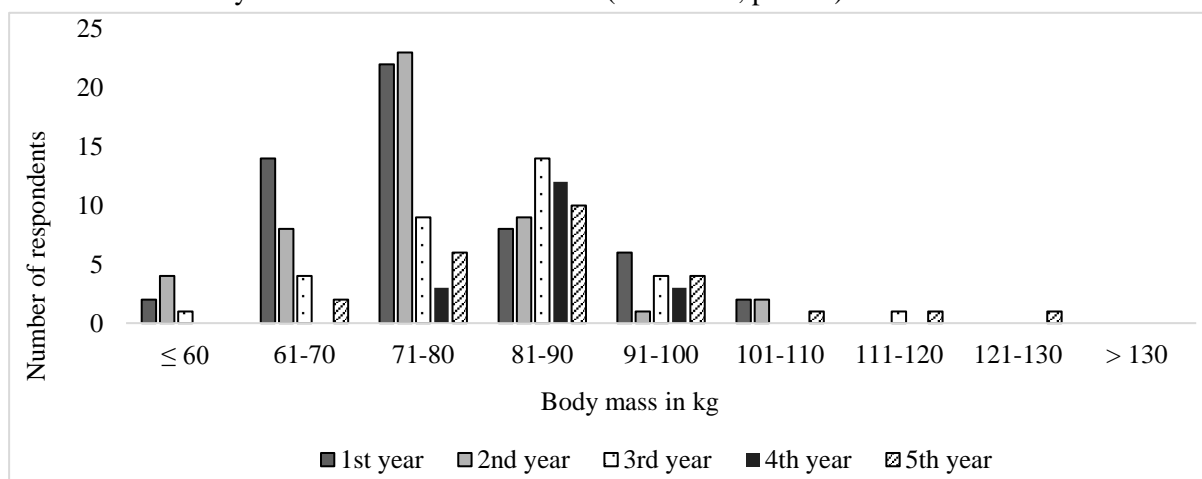
Figure 2. Distribution of respondents of the study group (from 1st till 5th year) according Body mass value.

Average value of body height in study group was 180.04 ±7.44 (SD) cm. The largest number of respondents of study group (45.8 %, n=81) had body height in the interval from 181 cm until 190 cm. Male respondents composed 90.4 % (n=160) in study groups. The value of body mass index in 61.25 % (n=98) male respondents corresponded to standard (from 20.1 until 25.0). The overweight problem with BMI value corresponded to interval from 25.1 until 28 was determined in one fourth of male respondents (25.6 %, n=21), but the pre-adiposity stage with increased BMI value above 28 were fixed in 13.13 % (n=21) of male-respondents. Female respondents composed 9.6 % (n=17) of study group. The value of BMI in female respondents group corresponded to standard (from 18.1 until 23.8) in 76.5 % (n=13), but some female respondents (n=3) had BMI value into interval 23.9 till 26 that evaluated as overweight and for one respondent BMI value was above 26. The negative statistically significant correlation was determined between value of BMI and somatic health level (r=-0.433, p<0.01). There were gender differences in standard value of body fat %. Analysis of body fat mass in study group show that the moderate body fat mass (that corresponded to 18.0-24.9 %) fixed in 63.1 % (n=101) of male respondents of study group, but

the body fat mass level in 42.9 % (n=9) of female respondents of study group corresponded to low level (from 10 till 13 %). The negative statistically significant correlation is fixed between body height and fat mass (r = -0.336, p<0.01). The statistically significant correlation is found between thickness of sub-scapular skin fold and BMI value (r=0.498, p<0.01) and thickness of supra-iliac skin fold and BMI (r=0.566, p<0.01). The negative statistically significant correlation is revealed between somatic health level and sub-scapular skin fold thickness (r=- 0,197, p<0.01) and between somatic health level and supra-iliac skin fold thickness (r=-0.206, p<0.01), as well between somatic health level and BMI value (r=-0.479, p<0.01).

Physiological parameters

The evaluation of physiological measurements included following parameters: systolic blood pressure level, hand muscle force level, pulmonary vital capacity value and calculated Robinson index, vital index, power index. The analysis of systolic the blood pressure level in 33.3 % (n=59) of respondents of study group corresponded to standard level (120-129 mmHg), in 17.5 % (n=31) of respondents of study group the systolic blood pressure level was below the standard interval, that assessed as standard (norm) according European Guidelines (Williams et al., 2018). The analysis of individual variants of systolic pressure data revealed that in 28.2 % (n=50) respondents of study group the systolic blood pressure level was higher and included into interval 130-139 mmHg, but it assessed as standard. The systolic blood pressure level in 18.6 % (n=33) respondents have determined and assessed as the 1st level of hypertension found (into interval 140-159 mm Hg), but in 2,3 % (n=4) the systolic blood pressure value was higher and included into interval 160-179 mm Hg. The positive statistically significant correlation was revealed between systolic blood pressure value and body mass value (r=0.477, p<0.01) and between systolic blood pressure value and body mass index value (r=0.335, p<0.010).
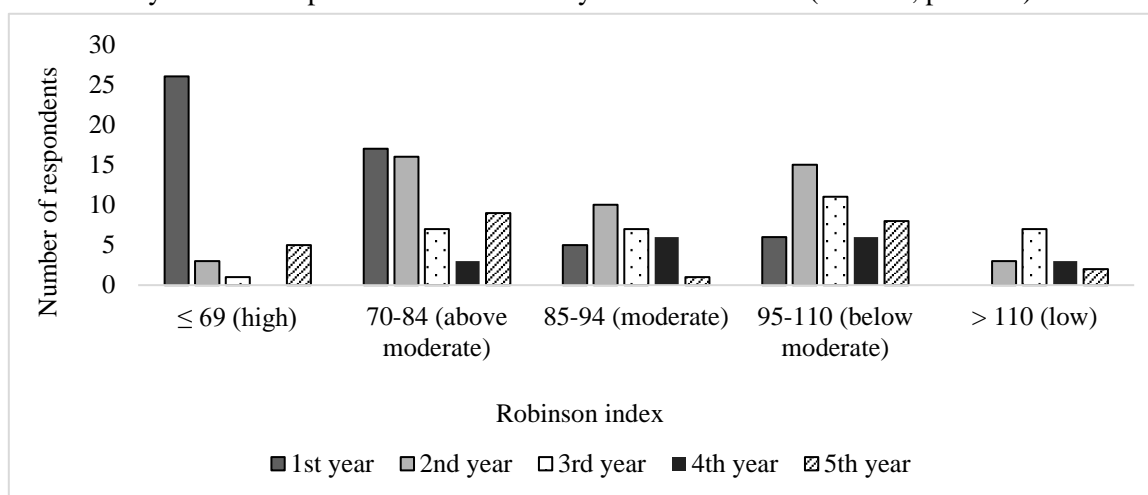

Figure 3. Distribution of respondents of the study group (from 1st till 5th year) according Robinson index value.

Robinson index reflects cardiovascular system functional capacity. Evaluation of Robinson index value shown that in 65.5 % (n=116) of respondents have had parameters that corresponded to optimal level (moderate, above moderate, and high) (Figure 3). The analysis of restoring period of heart rate after standard physical load shown that in 92.5 % (n= 161) of respondents the results were excellent until 60th that indicated the cardiovascular system economization. The negative statistically significant correlation has determined between heart rate restoring time and somatic health level (r = –0.192, p<0.01).

The respiratory capacity of respondents was assessed by using data of pulmonary vital capacity (in ml) and pulmonary vital index. The analysis of individual data of pulmonary vital capacity revealed in 22.5 % (n=36) male respondents pulmonary vital capacity value corresponded to interval 3501-4000 ml and in 58.8 % (n = 10) female respondents the value of pulmonary vital capacity fitted into intervals 2501 – 4000 ml.

The evaluation the pulmonary vital index value individual variants shown that the vital index was observed in 61.8 % (n=99) into male group at interval above 51 (Figure 4).
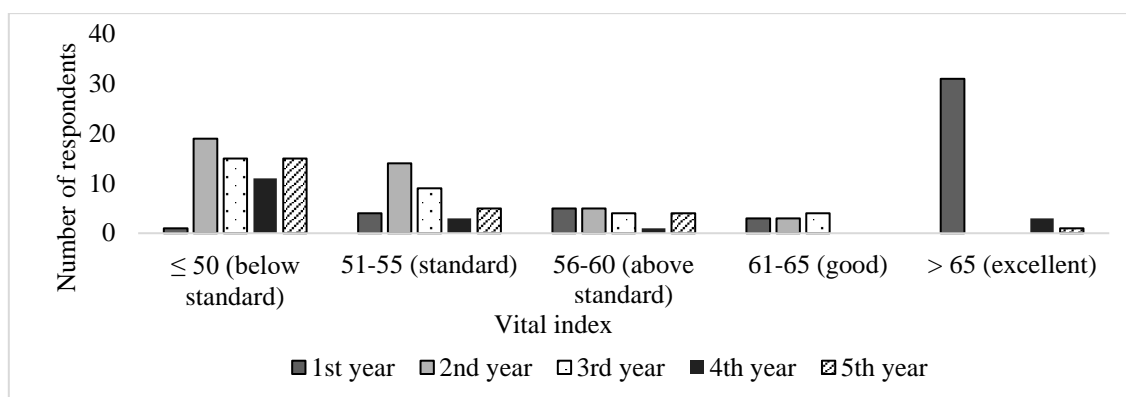
Figure 4. Distribution of male-respondents of the study group (from 1st till 5th year)
according vital index value.

Analysis of the data revealed the statistically significant correlation between somatic health level and vital index value ($r= 0.327$, $p<0.01$).

There was wide individual variation range of dynamic muscle work capacity. The analysis of individual variants revealed that that in 78.1 % of male respondents dynamic muscle force value are included into interval from 41 until 60 kg and in 52.9 % of female respondents dynamic muscle force value are included in the interval from 31 till 40 kg, the analysis of individual variation of power index represented on the Figure 5.
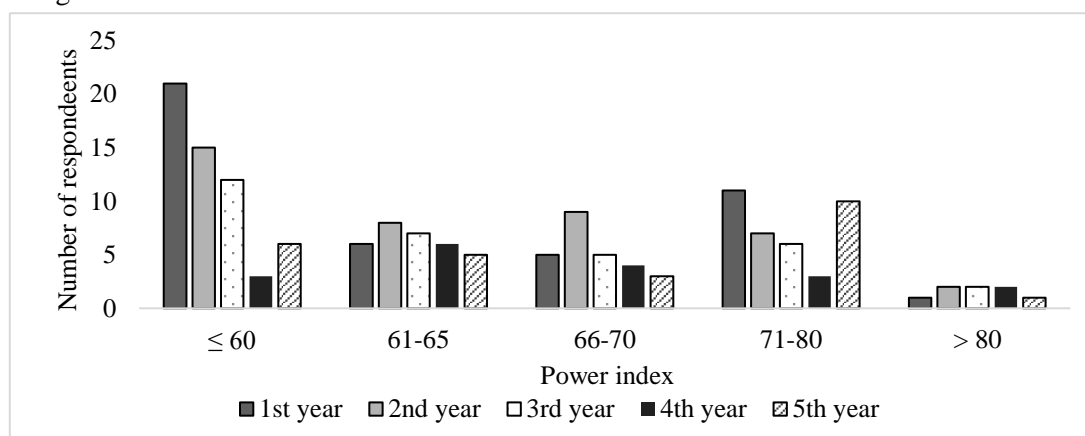
Figure 5. Distribution of respondents (%) of the study group according dynamic muscle work capacity.

The positive statistically significant correlation is found between power index and somatic health level ($r=0.332$, $p<0.01$). Somatic health level increased from with the training of physical skills, endurance, to the body composition and to physiological and anthropometric parameters.

Discussion

Physical training process had impact on body composition of respondents, it induced increasing the body mass that related to increasing muscle mass and decreasing body fat level concerning skin fold thickness diminishing. Assessment body mass value, body height parameters, and calculation body mass index revealed that about 40 % of respondents of study group had BMI value above standard level (according H.L. Apanasenko method), but evaluation physiological parameters shown that body mass connected to increasing muscle force dynamic parameters, vital capacity value. The statistically significant correlation has revealed between systolic blood pressure level and body mass value, between systolic blood pressure level and body mass index value. According European Guidance for assessment BMI value (Yumuk et al., 2015) in 60.7 % (n=108) respondents BMI value corresponded to standard (from 18.5 until 24.9). There were 34.8 % (n=62) of respondents with BMI value into interval from 25.0 until 29.9 that evaluated as overweight. Small number of respondents (4.5 % (n=8) had BMI value that were into interval from 30.0 until 34.9 and were evaluated as adiposity. Assessment of various physiological parameters revealed that

systolic blood pressure level in 20 % of respondents of study group were above standard, calculation of Robinson index indicated cardio-vascular problems for one third of respondents of study group. Dynamic muscle force parameters in 78.1 % of respondents corresponded to optimal level, but the study has shown that respondents with low level of dynamic muscle force parameters, that indicates physical fitness and endurance problems (low physical fitness level, low muscle mass value or increased body mass/ body mass index value). Physical fitness training had impact on anthropometric and physiological parameters of respondents and on somatic health level, that is supported by revealed correlation between somatic health level and anthropometric parameters (body mass index value and skin fold thickness). The statistically significant correlation has found between somatic health level and anthropometric parameters (negative correlation with body mass index value and skin fold thickness). Somatic health level evaluation according H.L. Apanasenko method used as assessment method of military training impact.

Conclusions

- Physical training process had impact on body composition of respondents, it induced increasing the body mass that related to increasing muscle mass and decreasing body fat level concerning skin fold thickness diminishing**.**

- Assessment of body mass value, body height parameters, and calculation of body mass index revealed that about 40% of respondents of the study group had BMI value above standard level, but evaluation physiological parameters shown that body mass connected to increasing dynamic muscle force parameters, vital capacity value.

- Evaluation of functional parameters revealed increasing blood pressure level over standard value in 20.9% of respondents that to statistically significant lowering of somatic health level.

- Physical fitness training had impact on anthropometric and physiological parameters of respondents and on somatic health level. There is found correlation between somatic health level and anthropometric parameters (body mass index value and skin fold thickness). Somatic health level evaluation according H.L. Apanasenko method has been using for assessment military training impact.

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Students' and Teachers' Opinion on the Possibilities of Improving Students' Research Skills in Biology Lessons

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Abstract: Acquisition of students' research skills in the learning process is one of the main goals in the educational process. The aim of the study was to clear out the opinion of students and teachers on the possibilities of improving students' research skills in biology lessons. The survey of the 10th, 11th and 12th-grade students about their opinion on the importance of research skills, the level of their research skills and possibilities of improving students' research skills in biology lessons were carried out in three secondary schools of Latvia. Altogether 142 students were surveyed. Three biology teachers were interviewed as well. The results of the research showed that most of the surveyed students appreciate the benefits of acquiring research skills. The majority of the surveyed students rate their level of research skills as average. Most of the students usually do not have problems with research activities. Students consider that the most difficult of the stages is nomination and justification of the hypothesis. The majority of surveyed students consider that most of the methods used in lessons have a middle or big influence on the development of research skills. Students consider that laboratory work has the greatest impact on the development of research skills. Students evaluate the teacher's activity in the learning process and consider that different activities used in Biology lessons promote the development of research skills. The surveyed biology teachers rate the students' research skills as good. Teachers are convinced that one of the most important preconditions for the development of research skills is the formation of interest in the relevant topic. Successful cooperation between teachers and students plays a crucial role in the development of students' scientific skills.

Keywords: research skills, secondary school students, teachers, biology lessons, teaching methods.

Introduction

There is a lot of discussion in education about the type of skills that young people will need to find a good job and thrive in the 21st century. In order for students currently in education to be able to integrate into the society of the future and to be competitive, it is necessary to pay attention to what knowledge, skills and attitudes students will acquire upon graduation. Digital skills, the ability to lead and work in a team, communication skills, analytical and creative thinking are considered important skills for the specialist in the 21st century (Van Damme, 2014). Special emphasis is also placed on such skills as the ability to see opportunities and identify problems, to be master in your own field, to come with new ideas and solutions and the ability to critically evaluate information. Many of these skills are closely connected to the acquisition of research skills. The task of the learning process becomes not only to acquire knowledge but the ability to apply it in different situations. The new competency approach in the science curriculum of Latvia requires students to acquire and use research skills to solve scientific and interdisciplinary problems (Regulations Regarding…, 2019). The use of research methods in the process of acquiring biology subjects ensures the creative use of the theoretical knowledge acquired by the student and develops the ability to independently plan and perform experimental activities, as well as to use the acquired research skills in other subjects.

According to international policy and curriculum documents, the acquisition of research skills is an important objective of secondary education. Scientific reasoning skills are not just for researchers but they are also increasingly relevant for making informed decisions in our everyday lives (Engelmann, Neuhaus, Fischer, 2016). However, learning to conduct qualitative research is a complex endeavour. Secondary school and college students should and they can conduct research to strengthen different skills including critical thinking. Acquisition of students' research skills promotes critical thinking but critical thinking is one of the major goals to achieve the educational goals (Mantaniari et al., 2020). Some of these recommendations for developing critical thinking are to include increasing the diversity of research types and choosing more precise data analysis techniques (Susetyarini, Fauzi, 2020).

Research also has great potential to increase students' engagement if they choose research topics that resonate with their curiosity and interests (Scherff, Rush, 2019).

Research is based on the use of previously accumulated knowledge, optimal methodology and technical equipment, which results in the acquisition of new knowledge, facts and ideas, which is the main goal of the research process (Kalniņa, 2012). Information literacy – obtaining, evaluating and using information – is a key element of scientific literacy. Information literacy depends on general information management skills as well as on domain-specific knowledge. Studies indicate that most students are able to identify information but show little concern for the reliability and validity of the information they locate (Schiffl, 2020). It is necessary to help the student to acquire the ability to work with various information and distinguish real information from false information (Anspoka, Kazaka, 2019). One of the tasks of pedagogues is to promote students' information literacy. Information literacy includes the search of information, identification of research questions, search for answers and appropriate use of information. Findings indicate that information literacy training could result in substantial improvements in basic literacy skills and that leads to the improvement of the quality of science fair projects in which students are engaged (McPherson, Dubé, 2016). An effective learning process necessitates the development of strategies that promote the effective use of information and communication technologies (ICT) for both students and teachers as well (Vronska, 2016). ICT gives positive impact on the different stages of the study process. The use of ICT helps students better involve in the study process, giving them possibilities for better acquiring new information and better communication during the study process (Porozovs, Dudkina, Valdemiers, 2019).

One of the methods for developing students' research skills is to improve their decision-making skills. The development of students' research skills is closely linked with inquiry-based learning, which in turn can improve the acquisition of students' metacognitive skills (Nunaki et al., 2019). Studies show that the involvement of students in solving socio-scientific problems by making informative and systematic decisions improve their decision-making skills (Nurtamara et al., 2020). Students should know not only how to perform experiments, but also the reasons for performing them. Having the concept of conducting research by integrating various techniques is especially important (Zhang, 2008). Research shows that students' scientific thinking and acquisition of research skills could be facilitated by organizing a science fair and collaborating with scientists (Grinnell et al., 2018). Students who receive scientific support find it easier to get research ideas, they can have more access to articles in books and journals that stimulate interest in science. Students' interest in science could be promoted by the transition from short-term to long-term science experiments (Chirikure, 2020). Long-term science experiments could be developed as group work. This would encourage student collaboration and reflection among students. Students would have no time constraints; they could go in work deeper and repeat the research if necessary. Cooperation of schools with higher education institutions in scientific work can promote the development of students' scientific skills and the formation of interests in science (Aizsila, 2013).

The success of the work of the teacher depends on the implementation of student-active approach, where the individual is considered a stakeholder, which itself determines the nature of the activity and communication (Zhanguzhinova, Magauova, Nauryzbaeva, 2016). An important role in achieving high learning outcomes and developing scientific skills has cooperation between the student and the teacher. The achievements of the learning process could be enhanced by the formative assessment and effective feedback between the teacher and the students. The teacher describes, explains or demonstrates the concepts or skills being taught or instructs students to carry out an investigation (Brookhart, 2010). During the formation of feedback between the student and the teacher, answers to questions about the learning process, completion of tasks, opportunities to lead oneself to the set goal and achievement of the planned results are given and received (Čakāne, 2018). It is important that the assessment of the work is useful for the student and that he/she will be able to use this information to improve the work.

The aim of the study was to clear out the opinion of students and teachers on the possibilities of improving students' research skills in biology lessons.

Methodology

The study was performed in three secondary schools (one Riga secondary school, one Riga district secondary school and one Kurzemes region secondary school). The survey of the 10th, 11th and 12th-grade

secondary school students about their opinion on the importance of research skills, the level of their research skills and possibilities of improving students' research skills in biology lessons were carried out. Altogether 142 students were surveyed (40 students from Riga secondary school; 52 students from Riga district secondary school and 50 students from Kurzemes region secondary school). 50 tenth grade students, 51 eleventh grade students and 41 twelfth grade students were surveyed. All surveyed students studied biology as a separate subject. The Likert scale was used in some of the survey questions. 3 biology teachers – one from Riga secondary school, one from Riga district secondary school and one from Kurzemes region secondary school were interviewed as well. A semi-structured interview was used in the research. The aim of the interview was to find out the opinion of biology teachers on issues related to research skills and opportunities for their improvement in the teaching process. The research was carried out in 2020.

The research question was: do students understand the importance of research skills and what is their opinion about the possibilities of improving research skills in biology lessons?

Results and Discussion

The majority of surveyed students (73 % of respondents) agree with the statement that research skills are one of the most important skills of the 21st century (Figure 1). Only 6 % of respondents do not agree with this statement but 21 % of students do not have an opinion on this issue. The obtained results show that most of the surveyed students highly appreciate research skills. One of the reasons may be that many of the surveyed students plan to link their future profession to one of the fields dominated by exact subjects. Although research skills are developed in all subjects, they are more directly related to the exact subjects in which research work is required. Students' opinions can also be influenced by the media, which notes that it is necessary for people to be able to evaluate situations to distinguish truth from lies, thus increasing the importance of research skills not only in the life of the student but in the life of any person.
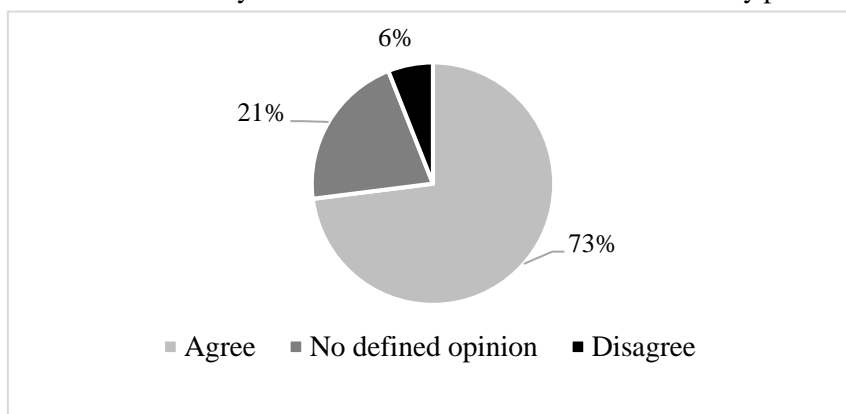

Figure 1. The opinion of secondary school students on the importance of
research skills in the 21st century (in % of the number of students in the group).

The majority of surveyed students rather agree (30 %) or completely agree (34 %) with the statement that using methods for the development of research skills makes lessons more interesting (Figure 2). The majority of students also agree that using methods for the development of research skills helps to acquire knowledge and skills that will be useful in real-life situations (35 % of surveyed students completely agree and 39 % of students rather agree), develops the ability to work independently, improves learning topic and encourages interest in the subject.
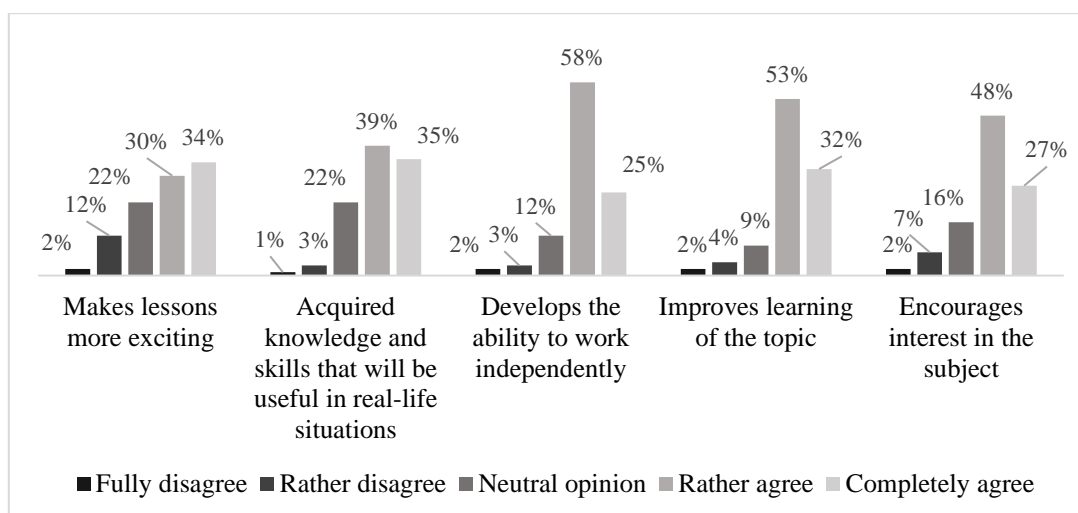
Figure 2. The opinion of secondary school students' on the benefits of using research methods in the lessons (in % of the number of students in the group).

Most of the surveyed students rated their level of research skills as average (Figure 3). Eighteen percent of students consider their level of research skills to be high and only 2 % rate it as very high but 10 % of surveyed students think that their level of research skills is low. It is possible that students have underestimated the level of their research skills. Such results could be related to the incomplete knowledge of students about the formative assessment methods. Another reason for such results could be the student's lack of ability to evaluate his or her own work and achievements.
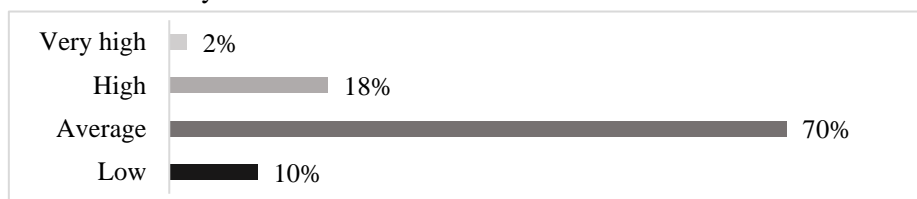

Figure 3. The opinion of secondary school students on their level of research skills (in % of the number of students in the group).

The largest number of students who have assessed their level of research skills as high is in Riga Secondary School (Figure 4). Eight percent of surveyed 10th-grade students, 8 % of 12th-grade students and 17 % of 11th-grade students have assessed their research skills as high. It is possible that this school pays more attention to the development of students' research skills, or that students are better taught how to assess their skills. Usually, students work out their scientific research work in 11th grade, which contributes to the development of research skills.
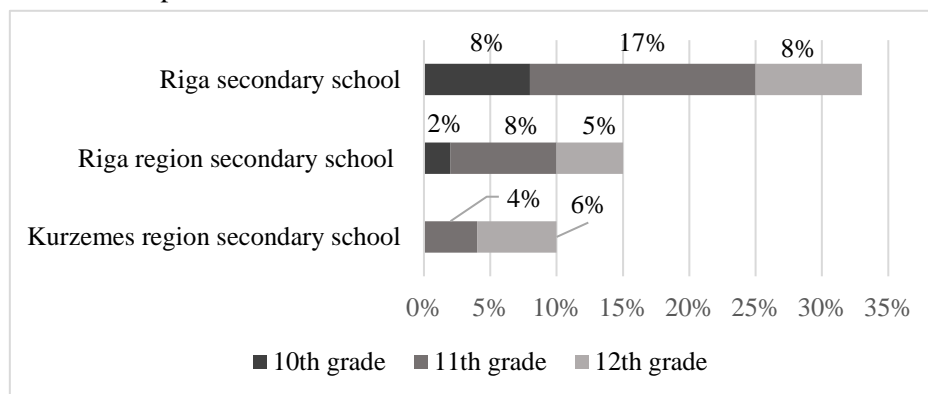

Figure 4. Distribution of secondary school students who rated their level of research skills as high by schools and class groups (in % of the number of students in group).

The answers provided by the respondents regarding the stages of the research activity show that students usually do not have any problems with research activities (Figure 5). According to the respondents, the most difficult of the stages is nomination and justification of the hypothesis, 5 % of the respondents consider this stage to be difficult but 23 % of the students consider this stage to be rather difficult. Students also consider acquisition and compilation of information to be a rather difficult stage (17 % of the students consider this stage to be rather difficult). Many students consider the making of conclusions to be the easiest stage (45 % of students consider it a rather easy stage, but 13 % consider it a very easy stage). The obtained survey data allow estimating of the research skills that students would need to develop the most. If students find it difficult nomination and justification of the hypothesis, then the skills to put forward and formulate a hypothesis need to be improved.
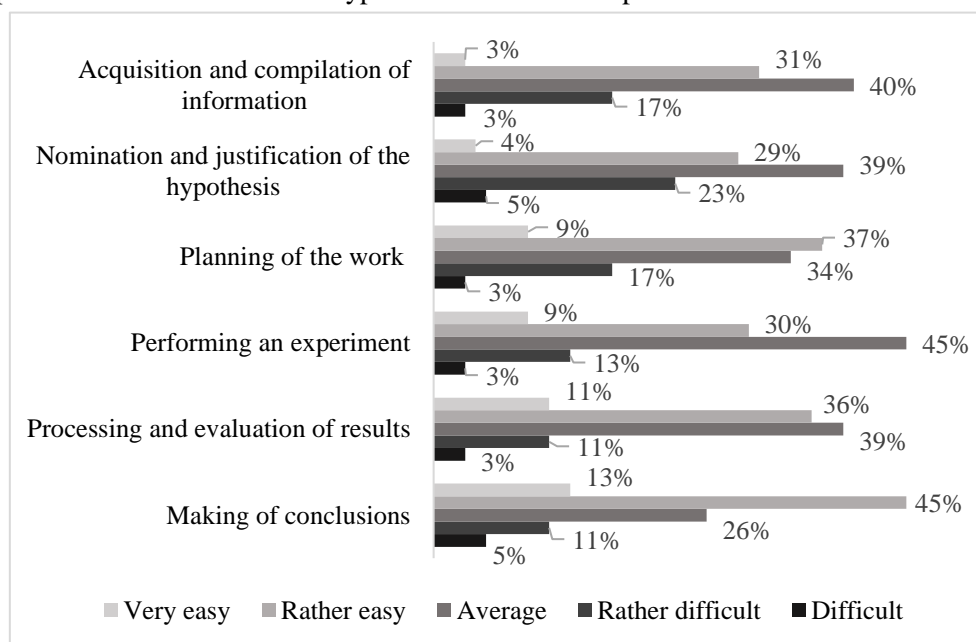

Figure 5. The opinion of secondary school students about the difficulties of the research stages (in % of the number of students in the group).

The results of the survey show that the majority of students consider that most of the methods used in lessons have a middle or big influence on the development of research skills (Figure 6).
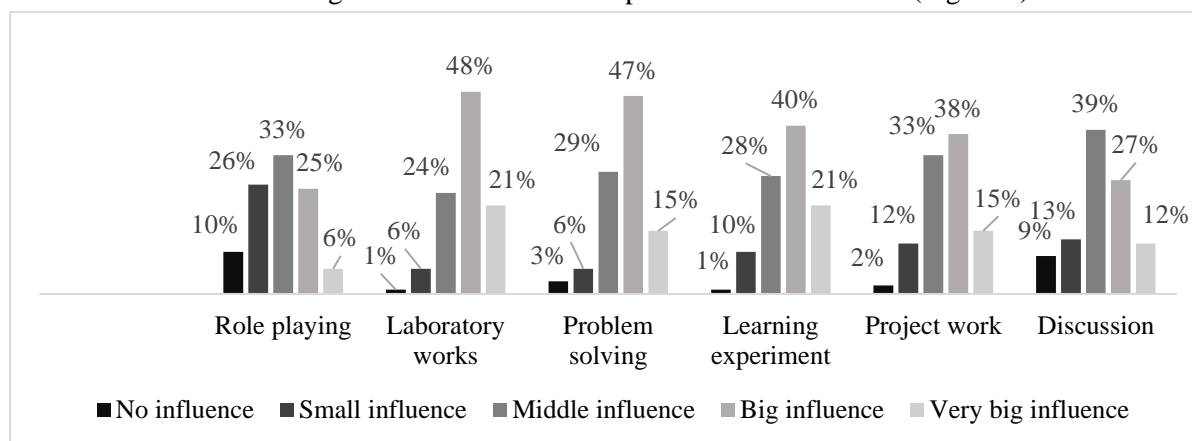

Figure 6. The opinion of secondary school students on the impact of teaching methods on the development of research skills (in % of the number of students in the group).

Forty-eight percent of surveyed students consider that laboratory works have a big influence on the development of research skills and 47 % of students consider that problem solving has a big influence on the development of research skills. Many students have underestimated the impact of role-playing on the development of research skills (26 % of students consider that this method has a small influence on

the development of research skills but 10 % of surveyed students answered that role-playing has no influence on the development of research skills).

The surveyed secondary school students consider that different activities used in Biology lessons promote the development of research skills (Figure 7). The largest number of students (38 %) completely agree that the use of different teaching methods in Biology lessons promotes the development of research skills. Many students completely agree (32 % of students) or rather agree (40 % of students) the opinion that planning and management of lessons is an important factor for the development of students' research skills. Students consider that solving real-life examples and challenges in Biology lessons, asking questions that help students understand the research problem and other methods helps to develop students' research skills. The survey data confirm the students' opinion that the activity of teachers and the ability to organize lessons play an important role in the development of students' research skills.
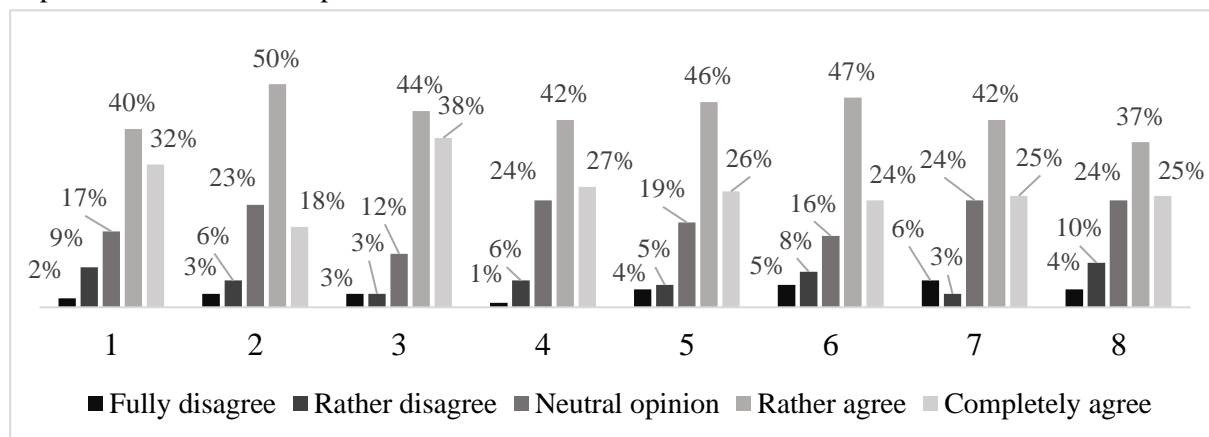

Figure 7. The opinion of secondary school students about the activities of teachers that promote the development of research skills in Biology lessons (in % of the number of students in the group).

Explanation of symbols for Figure 7: 1 – Planning and management of lessons. 2 – Promotion of students' cooperation. 3 – Use of different teaching methods in lessons. 4 – Encouraging the application of what has been learned to explain new ideas. 5 – Solving real-life examples and challenges. 6 – Asking questions that help students develop an understanding of the research problem. 7 – Paying students' attention to the connections between the acquired knowledge and previous experience. 8 – Interviews with students to assess their understanding of the topic.

In interviews with biology teachers, teachers said that they use different methods to develop students' research skills such as learning experiments, laboratory works, work with literature and various learning games. Students are offered to do project work. The frequency of the used methods depends on the topic of the intended lesson and the availability of materials. Some topics are very suitable for laboratory work and experiments, as well as for organizing interactive games on the subject. Interviews with biology teachers showed that such methods as role-playing, problem-solving tasks and debates are less commonly used, however, these methods also could be important in promoting the development of students' research skills.

The surveyed biology teachers rate the students' research skills as good. Some students have problems at different stages of the research, such as gathering information, formulating conclusions, but the teacher always tries to discuss the problem, which makes confusion and solve the problems together. Teachers pointed out that some students have low self-esteem, so they are not able to assess their knowledge and skills at the appropriate level. Teachers believe that students engage with interest in practical activities, which not only make lessons more interesting but also promote students' collaboration skills and develop students' research skills. Students prefer practical activities that are closely related to students' current problems, such as laboratory work on body balance. The answers given in the interviews show that the teachers have understood that the active participation of students in the learning process and perhaps the learning achievements are very closely related to the students' personal experience and interest in the task. Teachers are convinced that one of the most important preconditions not only for the development of research skills but also for the whole process of developing students' knowledge is the formation of interest in the relevant topic. An important role of the teacher in the development of students' research skills is the promotion of students' independent activities. The cooperation of a competent teacher, who

can always be asked questions with the student, is one of the most important factors that promote the development of students' learning achievements and research skills.

Conclusions

- Most of the surveyed students appreciate the benefits of acquiring research skills. The majority of students agree with the statement that using methods for the development of research skills makes lessons more interesting, helps to acquire knowledge and skills that will be useful in real-life situations, develops the ability to work independently, improves learning topic and encourages interest in the subject.

- Most of the surveyed students rate their level of research skills as average. The largest number of students who have assessed their level of research skills as high is in Riga Secondary School. The majority of students usually do not have problems with research activities. Students consider that the most difficult of the stages is nomination and justification of the hypothesis.

- The majority of surveyed students consider that most of the methods used in lessons have a middle or big influence on the development of research skills. Students consider that laboratory work has the greatest impact on the development of research skills but many of them underestimate the role of role-playing on the development of research skills.

- Students evaluate the teacher's activities in the learning process and consider that different activities used in Biology lessons promote the development of research skills. As the most important activities that promote the development of research skills students consider succession planning and management of lessons, solving real-life examples and challenges, and asking questions that help students develop an understanding of the research problem.

- The surveyed biology teachers rate the students' research skills as good. Some students have problems at different stages of the research, but it is possible to develop them by promoting interest in the relevant topic. Teachers are confident that one of the most important preconditions for the development of research skills is the formation of interest in the relevant topic. The cooperation of a competent teacher with the student is one of the most important factors that promote the development of students' learning achievements and research skills.

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Applying a Metaphorical Method in Career Counselling

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Abstract: The present paper presents the research results on the role of choosing the metaphorical method for career counselling. The research aims to analyse the results of applying the metaphorical method in career counselling. An analysis of relevant theories and the results of an assignment completed by students of professional education institutions was performed to achieve the aim. The study involved 19 students aged 18-30. The research found that metaphors stimulate the imagination of young individuals and allow them to creatively approach career investigation by using their potential for a complex understanding of career-related phenomena and thinking about their career development. The research results could contribute to the understanding of the role of applying metaphorical methods in career counselling and give an idea of young individuals' creativity and imagination in connection with their career development. Career counsellors, teachers as career counsellors and personnel selection specialists could use the findings in their career counselling practice.

Keywords: metaphors, metaphorical methods, career counselling, career counsellor.

Introduction

Career education as systematic cooperation between educational institutions, parents and the public provide support to young individuals to choose their career paths independently. Career support, which is implemented through various activities, includes information, career education as well as both group and individual counselling. Career counsellors help young individuals to develop themselves and make informed career choices (Dislere, Vronska, 2020; Briska, Dislere, 2018; Racene, 2013). The activity of a career counsellor in professional education institutions is appreciated and supported, thereby reducing the number of young individuals who are unable to find suitable jobs for themselves.

Individuals use three types of instruments to get results when they interact with other individuals, which are as follows (Vygotsky, Luria, 1994):
1) psychological (symbolic) instruments;
2) technical instruments;
3) intermediaries (identity as an instrument).

Identity is a component of the individual's psyche, which both manages and regulates the individual's aspirations, wishes and interests, as well as reflects the performance of this manager and regulator.

Psychological (symbolic) instruments are called mental instruments. From a socio-dynamic perspective, all man-made instruments are called cultural instruments, which could be divided into two types of instruments: technical and mental (Vygotsky, Luria, 1994).

Any mental (or psychological) instrument is symbolic; therefore, mental instruments also include all phenomena of language: individual sounds, alphabet, words and sentences, as well as very complex instruments, such as stories, texts, charts, maps, musical scores, plays and literary works. They are also man-made; therefore, they could also be considered to be cultural artefacts.

A technical instrument refers to a non-symbolic object, such as a computer, a chair, an engine, a pencil, a cup and a radio. Many technical instruments are complex and consist of technical parts that are combined in one larger instrument. All technical instruments are man-made; therefore, they are cultural artefacts (Peavy, 2004).

It is important to perceive words as instruments, and individuals use words to achieve something. Career counsellors use both technical and mental instruments in their daily practice. Technical instruments, such as a computer, telephone, pencil, paper sheet, chair and dictaphone are important in the work of a modern counsellor, yet mental instruments – words, sentences, ideas, metaphors, stories, intonations, texts, pictures, diagrams, maps and models – are even more common.

Metaphors are human inventions that are used as instruments of mind to describe and re-describe identity, social interaction, human activity and society. Individuals use instruments to do something. The instrument points to a specific function or set of functions. The term instrument partly replaces the term psychological technique (Peavy, 2004).

A career counsellor plays an important role in contributing to the development of personal skills in accordance with labour market needs and the socio-economic development of the country, as the counsellor works directly with young individuals. In order for young individuals to choose professions that suit them, it is important to choose career counselling methods that would let the young individuals make the right career choices.

An individual's creative abilities emerge not only from his/her ability to judge logically but, to a large extent, also from his/her intuition and subconscious thinking. Any individual thinks at the verbally logical, figurative (Agejevs, 2005) and abstract levels.

A metaphorical method could be employed by career counsellors for different categories of clients to solve a specific situation or problem. There is a growing interest in the use of metaphor in counselling (Lyddon, Clay, Sparks, 2001).

The choice of a method and the interpretation of the results could encourage the client to make a career decision according to his/her wishes, and the counsellor can offer alternative employment paths, assist in drawing up an individual career development support plan, help to understand the world of employment, promote individual choices and get better integrated into society and professional life. Using a metaphor helps career counsellors to better inform the young individual and understand his/her needs. In the field of professional education, the role of career guidance is growing.

The aim of the study is to analyse the results of applying the metaphorical method in career counselling.

Methodology

A metaphorical method assignment was given to students, and the results were analysed to achieve the aim of the research. The study was conducted at professional education institutions during career counselling sessions, giving the metaphorical method assignment to young individuals aged 18-30. The study involved 19 students and it was conducted from 1st January 2020 to 30th June 2020.

A questionnaire was developed using a questionnaire template available at the website www.visidati.lv to make it easier and more convenient for the respondents to fill it in. The results were processed using the grouping method, descriptive statistics and MS Excel (Arhipova, Bāliņa, 2003). Using the MS Excel descriptive statistics tool, it is possible to compute the statistical indicators of the participants who participated in the survey.

The research aims to analyse the results of applying the metaphorical method in career counselling.

To achieve the aim of the study, the following specific research tasks were set:
1. to theoretically discuss theories on metaphors;
2. to analyse the results of the metaphorical method assignment.

Theories on metaphors and metaphorical methods were analysed to perform the research tasks and achieve the aim. For a statistical data analysis, descriptive statistics was employed using MS Excel. The metaphorical method assignment was analysed, which is described below. The location of conducting the study: a professional education institution with students who did the assignment online.

Results and discussion

Development of the concept of metaphorical thinking

Career metaphors express both the expectations and frustrations felt by the client. Exploring these elements becomes important in the career research process. Metaphors are not only a form of expression but also a way of structuring the mindset. They depict reality in familiar terms, allowing individuals to see events from a specific perspective (Jigau, 2007). A number of scientists have researched the use of

a metaphorical method in career counselling, e.g., C.A. Storlie, V. Giegerich, T. Stoner-Harris, J. Byrd (2018), D. Tay, J. Huang, H. Zeng (2019), A. Creed, S. Nacey (2020), N.K. Ozdemir (2020), D. Tay (2020), and their findings could be used in the work of career counsellors.

Metaphors are communication instruments that are often used to conceptualize the complex phenomena that surround us (Mignot, 2004). Applying the metaphorical method in career counselling was begun recently and has affected at least two things: one is the conceptualization of the career counselling process and the other is the development of the process itself (Holland, 1997). The second thing involved an overlap of personal and professional features, given that the main goal of career counselling is to find the most suitable career for the individual. This paved the way for the use of metaphors that increased the role of rapid and creative adaptation to changes in social and professional environments. The purpose of career counselling is considered developing a proactive attitude to one's career, which requires flexibility and good opportunity management.

Career counselling is focused on cooperation and an examination of the special role of an individual's career or the so-called "subjective career". A metaphor is not just a "figure of speech." Scholars of the relationship of language to thought advise us that metaphor is more than an affectation, more than a smart way of talking, and more than a means of persuasion: It is a representation of how we think. People's metaphors embody and betray their internal images of the world around them. Using metaphors in our speech, we influence others to share our pictures of the world, and by listening to others' metaphors, we modify our own internal images and develop new ones (Metaphors for careers…, 2020; Inkson, 2002; Inkson, 2004). In addition to other instruments used in career counselling (narratives, exercises for entering into the spirit of imaginary characters, graphical career representations), the metaphorical method helps counsellors and clients to creatively approach career research by using their potential for a complex understanding of career-related phenomena.

In view of the economic, social and cultural transformations that characterize the modern age, the search for meaning and the exploration of personal careers, as well as its connection with other segments of life, are becoming important dimensions of the counselling process (Peavy, 1997; Savickas, 2000, 2001).

Metaphors are common areas of everyday career-related imagery, and metaphors commonly use vivid and familiar characters, thereby giving events a special and personal perspective. The use of metaphors in career counselling can help to reduce the gap between theory and practice and perceive individual aspects of career counselling. The "truth" of the story of career is less important than what it reveals about the client's thinking. K. Inkson categorised nine metaphors of career as inheritance, construction, cycle, matching, journey, encounters and relationships, roles, resource, and story and in later research explored boundaryless and protean careers. Such metaphors may facilitate and highlight alternatively, bias and obscure the understanding of client, practitioners, or both. (Amundson, 1997; Inkson, Amundson, 2002; Inkson, 2006; Creed, 2018).

From a career counselling perspective, metaphors as a way of experiencing reality through aspects common to other situations allow for a deeper career analysis by integrating complex information about these phenomena into a simple image. In career counselling, metaphors create a research context that is beneficial to the individual and allows for the discovery of personal, career-related features (Jigau, 2007). Colour photo cards could be used for metaphors to visualize career situations. Using metaphors, career counselling aims to provide a description of relevant experience, not to give a theoretical interpretation. R.V. Peavy actively supported the idea of transformative energy that emerges when individuals engage in dialogue. Dialogues, including words, symbols, images and metaphors, are useless if they are viewed in isolation from the context in which they emerged. Truth is not born in the head of an individual, as well as not found there; it is born among individuals who seek together a variety of truths through dialogical communication (Peavy, 2004). I. Soika also calls for the use of a diverse dialogue in career counselling, which is a purposeful conversation aimed at a conscious, successive and cognitive activity. It is important to stimulate both the internal dialogue of a young individual and the external dialogue with his/her support persons (Soika, 2015; Soika, 2017).

A metaphor in career counselling is a kind of play that points to:
   1) players (counsellors and advice seekers),
   2) moves (functions and tactics such as listening or mapping are the moves),

3) instruments that counsellors use to make moves (e.g., a metaphor is used to change levels of meaning, or computers are used to access information). Moves and instruments are often closely related or even identical, e.g., asking is a move and a question is an instrument. The purpose of career counselling is to bring together on behalf of the advice seeker results such as clearer understanding, feedback, formulation of experience, critical judgments, capacity building initiatives, solutions, self-esteem, plans, need fulfilment, relief from suffering, social support and greater capacity to participate in public life activities (Peavy, 2004).

Metaphors are very often used in socio-dynamic counselling, where counselling is like a learning process, a process of co-construction, a process of life planning and a way to expand one's vision, opportunities, capacities, opportunities and therefore personal freedom. From a socio-dynamic perspective, counselling is primarily a language play. Counselling in a certain way means using a special vocabulary that guides and inspires the counsellor or makes him or her think and act in this way and not otherwise. Maintained relationships and the populated public space are co-constructed by using symbolic and linguistic means. A sentence is said, a metaphor is used, a tone of voice is defined, a word is spoken – all these and countless other linguistic actions are moved in language play in which the meaning is constructed, and symbolic interaction occurs. Human life is associated with language. In everyday life, as well as in counselling, the basic instruments for problem solving are language (intellectual) instruments. Counselling and any solution found during counselling is the result of an interaction that the advice provider and the advice seeker have achieved through interpersonal negotiations. The advice provider and the advice seeker always create a counselling relationship together owing to linguistic and emotional responsiveness and joint conversations (Peavy, 2004).

When a career counsellor tries to understand and describe human actions and unpleasant situations by applying the socio-dynamic approach, irony and caution regarding a literal understanding are preferred. An ironist's way of thinking and expressing him/herself is dialectical, as it tries to contrast the new with the old by using metaphors, figurative sense and humour to expose stagnant ideas and approaches that limit the progress of life.

It is important to use specific examples and metaphors, especially when repeating what has been said, because for many individuals, sayings or metaphors that are common in everyday speech could be expressed much better than technical, abstract or professional terms. It is important to use metaphors to learn different meanings – a metaphor itself is the conveyance of meaning (Peavy, 2004).

Metaphor assignment analysis

The study was conducted from 1 January 2020 to 30 June 2020. During individual and group career counselling sessions, an assignment was given to 19 professional secondary school students.

As shown in Table 1, the study mainly involved students aged 18 to 30 years, the age range was 12 years, the number of participants was 19, the mode was 28, the median was 24 and the arithmetic mean was 24.10.

Table 1

Age parameters of the young individuals who participated in the study

No.	Sample parameter	Value
1	Mean	24.10
2	Mode	28
3	Median	24
4	Range	12
5	Minimum	18
6	Maximum	30
7	Total number of respondents	19

The mode is the number appearing most often in a data set (Arhipova, Bāliņa, 2003). Most of the students who filled in the questionnaire were aged 28. The distribution of the respondents by gender was as follows: 78.95 % women, 21.05 % men.

In the study, the career metaphor "Theatre" was used to depict one's career aspirations (Amundson, 2009). In sociology and in many sources of organizational literature, the career metaphor "theatre" views a person as an "actor" in a play of work and life (Amundson, 2009).

There are at least four types of theatre (Amundson, 2009) that could be defined as follows:
1. Street theatre. A person plays alone or with others, using the street as a stage.
2. Improvisational theatre. A person performs alone or in a small group, using the instructions of the audience. For example, viewers say three words (dirt, pencils, and the royal family) and actors have to perform a play involving those words.
3. Stage. A person works in a larger group, in accordance with the scenario. Each is assigned a specific role, and the play is performed regularly.
4. Film. A group of individuals come together to implement a specific project, and they stay together until the film is completed. It is possible to shoot one frame several times and use special effects.

Doing this exercise, some phrases are said, which are used by individuals to explain why they have chosen a certain type of theatre as the first one.
1. Street theatre: confidence, control, marketing, governance, freedom, independence, creativity, flexibility.
2. Improvisational theatre: cooperation, inspiration, support, adaptation, quick thinking, talents, creativity, imagination, focus on the present, a good sense of humour.
3. Stage: teamwork, coordination, hard work, character building, empathy, magic, energy.
4. Film: teamwork, limited contact with the audience, impression, possibility to re-film, control, heritage, following instructions, material remuneration.

This method is an interesting activity that engages and encourages individuals to reflect on personal and work life values and choices (Amundson, 2009).

A metaphor could include the idea of diverse roles. The person plays several characters at the same time (e.g., an employee, student, parent, friend, association member) and has to play all roles assigned or chosen voluntarily. Counselling can help the person to test and analyse the relationship between the roles played (Jigau, 2007).

The conditions for the assignment given were as follows:
1. Choose one of the pictures that describes your imaginary career (Figures 1, 2, 3, 4).
2. Explain why you chose this picture?

The images for the theatrical metaphor given in the assignment are shown in Figures 1, 2, 3, 4.

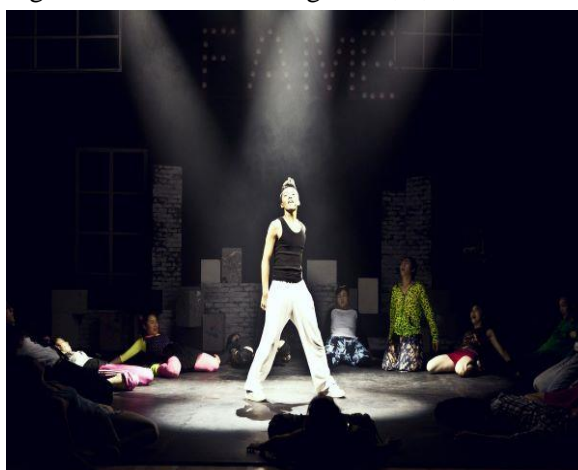Figure 1. Road Street Scene. Puppet Theatre (Road Street…, 2020).

Figure 2. Dance, People, Theatre, Monologue (Dance…, 2020).

Figure 3. Ballet Don Quijote. Theatre, Performance, Stage, Actors (Ballet Don…, 2020).

Figure 4. Camera, Cameraman, Job, People, Filming, Man (Camera…, 2020).

According to the results of the study, 36.8 % respondents had chosen Figure 2 and Figure 3, 15.8 % had chosen Figure 3 and 10.5 % had chosen Figure 2 to describe their potential careers (Table 2).

Table 2

Percentage breakdown of the figures selected by the respondents

No.	Figure No.	Number of respondents	%
1	Figure 1	2	10.5%
2	Figure 2	7	36.8%
3	Figure 3	7	36.8%
4	Figure 4	3	15.8%
Total		19	100.0%

Respondents' answers to the question _"Why did you choose this picture?"_:

Figure 1:
- *the work is interesting, but not active;*
- *I do not know why.*

Figure 2:
- *because it had only one character;*
- *I want to be respected in my workplace;*
- *because I only want to progress in my life;*
- *the central character in the image seems strong, bright and confident;*
- *I want to be the centre of attention;*
- *because I like being on stage;*
- *I do not know why.*

Figure 3:
- *I liked it more than the others because it reminds me of support to me;*
- *because I have always had a job where teamwork plays an important role, yet at the same time the work done is individual (for five years I have worked as a journalist in two companies);*
- *because there are a lot of individuals in the team, and everyone is fighting for their place;*
- *because it is teamwork;*
- *successful career development will require cooperation, support and communication with a variety of individuals.*

Figure 4:
- *I never liked the dance, art and theatre industry; therefore, I prefer technology-related things;*
- *I am not in a hurry and, at first, I look at it as if doing it from the side;*
- *it has to be important to me, but I am not a hard-working person and not a clown.*

The author concludes that the use of metaphor assignments in career counselling helps young individuals to:

- creatively think about a career;
- get to know and understand themselves, i.e., what is important, what is less important;
- easily adapt to the demands of everyday life at work and in the group;
- identify the causes of professional dissatisfaction;
- learn the environment and imagine the way they would like to work.

Career counsellors have an opportunity to use metaphor assignments as a career method online. This method allows counsellors to work with clients who are introverts, as well as it helps to identify the client's wishes and the first requirements for career choice at the "ice-breaking" stage. Online tools in career counselling are easy to use as interactive cooperation assessment tools to help clients make career decisions. They could be particularly useful in tailoring the counselling process to clients' needs and helping the clients to acquire the key decision-making and digital competencies needed in our knowledge society (Racene, Dislere, 2014). During career counselling sessions, young individuals give answers and are spontaneously involved in the use of metaphors in their exercises. The counsellor's duty is to present the diagnostic results in an understandable way and to explain that the results of the assignments done only show a trend, and therefore it is necessary to interpret the results in a neutral way (Racene, 2017).

The traditional forms of counselling are characterized by adherence to a long-established vocabulary, which is aging and, to some extent, losing its usefulness. Society is changing rapidly, and as the society changes, individuals are changing and so does the vocabulary and methods they use to describe life experiences. For counselling to remain relevant and meet the needs of those seeking advice in today's society, it should also change, both in terms of words and methods used. Therefore, the method of using metaphors online is very relevant today, as new ideas are needed in career counselling to start a new communication play that will be accepted by the next generation of counsellors and clients. The unpredictability and changing nature of today's society means that new types of counselling are needed, and the career metaphor "Theatre" for portraying one's career aspirations is a great way for career counsellors to work with clients online.

Conclusions

- The metaphorical method gives an idea of young individuals' creativity and imagination in relation to career development.
- The metaphorical method helps counsellors and clients creatively approach career research, using their potential for a complex understanding of career-related phenomena.
- For some clients, sayings or metaphors that are common in everyday speech could be expressed much better than technical, abstract or professional terms.
- The career metaphor "Theatre" is an interesting activity that engages and encourages individuals to reflect on personal and work life values and choices.
- The career counsellor can create new, unique assignments adapted to his/her target audience.
- The metaphorical method is suitable for applying it both in person and online.

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Benefits of Career Guidance for Secondary Vocational School Students – Evaluation of a Pilot Program

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Abstract: Although career guidance in the Czech Republic is officially perceived as a priority of the education system, guidance support is not provided equally at all types of schools and on all levels of the education system. For example, we register insufficient support for students at secondary vocational schools. As previous research by the authors of the article has shown, it seems that once a young person decides to pursue a career, the effort of the school system to pay further attention to career guidance will also decrease. This paper is aimed to suggest a new program for career education, counselling and training, afterwards to pilot it at three secondary vocational schools, and with the help of action research to collect and to evaluate experience from the school practice. The empirical part of this article consists of three research phases. First, a baseline analysis was performed using mixed data resources (questionnaire survey among students, interviews with school counsellors and document analysis). In the second phase, a new career guidance program was proposed. Finally, the program was tested at three vocational schools in the years 2019 and 2020. Using action research design, the researchers gathered evidence and identified the benefits of new counselling activities. Based on these results, proposals for further improvement and implementation of career guidance and education at secondary vocational schools were submitted.

Keywords: career guidance, vocational education, training program, action research.

Introduction

There are many ways for scientific description of career decision-making processes and the progress of young people on their way of choosing their future profession. Because career development is a complex phenomenon (Patton, McMahon, 2014) that involves "*the total constellation of psychological, sociological, educational, physical, economic, and chance factors that combine to influence the nature and significance of work in the total life span of any given individual*" (Engles, 1994, 2), also the relevant career guidance practice should integrate as widely as possible all interpersonal and intrapersonal factors involved and the links with the different levels of the environment (micro-, meso- and macro-level). An example of a comprehensive approach is offered, among others, by the social cognitive theory of career development, which is based on the concept of self-efficacy (Bandura, 1986). It describes career development using five interconnected models: interest development, choice-making, performance and persistence in educational and vocational domains, a model of satisfaction and well-being in educational and vocational contexts, and a model of career self-management (Lent, Brown, 2013; Lent, Brown, 2019). Similarly, a holistic approach prevails in other contemporary concepts of career education. M. Savickas, for example, divides counselling activities into knowledge about oneself, knowledge about the profession, decision-making, planning and problem solving (Savickas et al., 2009). The holistic approach is also evident in his concept of career construction. If we apply these theories with such complexity to the practice of career counselling, it is clear that counselling should not only take just a few areas into account (development of interests and goal setting, for example) but it should seek to develop skills important for students' understanding of self-concept and career planning. However, the question is how the counselling system can cope with this task, or how an ideally compiled, comprehensively and integratively designed program might look like.

In this study the authors focus especially on the situation at upper vocational schools. From existing experience with career guidance and education it is clear that the support offered to students is not so complex and effective as would be expected. The dominant approach is still based on informing, instruction is organized in large groups with transmissive kinds of communication without more personal involvement of students (Jirsáková, Herout, 2017). Newer research pointed out that – with regard to future success of students – there are many methods that can aim effectively to develop the whole student personality and their career management skills (Soika, 2017; Rutina, Soika, 2020; Hirschi, Zacher, Shockley, 2020). Training tools are often based on the holistic view of trainee personality and its social development. For

example, some authors recommended dialogical methodology (Soika, 2017) or strategies connected with experiential learning and on-the-job training (Guzman, Choi, 2013; Stan, 2016). Interpretation of recent research results from the Czech Republic (Jirsáková, Herout, 2017; Jirsáková, Votava, Urban, 2020) as well as from other European countries (Draaisma, Meijers, Kuijpers, 2018; Meijers et al., 2017) worried that the school system usually considers student decision processes as already completed on the upper secondary level. Therefore, most guidance activities are reduced to recommendations how to find a job or what to do in case of unemployment. There is very low motivation of counselling practitioners to support career exploration and career planning in the broader sense (David et al., 2020). The aim of this paper is, on the grounds of previous investigations, to suggest a new program for career education, afterwards to pilot it at three secondary vocational schools, and with the help of action research to collect and to evaluate experience from the school practice. After consideration of evaluation results the tested program will be improved and disseminated to other secondary vocational schools, teachers and counsellors. The overall intention could be summarized in two main research questions: What is the starting point in the field of career guidance and career education at three selected vocational schools? What experience did the pilot testing of a new career guidance program bring and what recommendations did arise out of this trial?

Methodology

To achieve the goals, the methodology of action research was chosen. This approach is recommended, for example, in the case of verification of a new educational method or program in the real environment (Cohen, Manion, Morrison, 2018). According to J. McNiff and J. Whitehead, action research should be divided into four following steps: evaluating existing practices identifying what needs to be improved, designing innovative practices, and testing them with subsequent evaluation. Another important feature of this strategy is the continuation of the investigation with additional adjustments and recurring evaluation: research in action (McNiff, Whitehead, 2010, 58). Another reason for choosing action research methodology was the possibility to combine different sources of input data (quantitative, qualitative) and to treat the personal experiences of researchers who participate in the experimental program as trainers (Kemmis, McTaggart, 2003). Action research also makes it possible to work with living, evolving and as yet unfinished pedagogical reality (Ivankova, Wingo, 2018). Repetitive feedback between actions helps to develop and to test the new end product.

In total, the research was divided into three parts. First, the initial state of career counselling in three selected secondary vocational schools was described (baseline analysis). These institutions belong among application partners of the project and have agreed in advance with the pilot testing of the newly developed methodology. The description of the initial situation in the three secondary schools included results of a questionnaire survey among final year students, information obtained from career counsellors through interviews, an analysis of school documents, and a description of the structure of the offer of educational programs. The state of career counselling was assessed at the level of an individual institution and based also on a comparison of three institutions with a larger sample of secondary vocational schools (benchmarking). Second, on the ground of the baseline assessment, a pilot career guidance program was designed and prepared for the check. In the third phase of the action research, the realisation process and results of the pilot program were evaluated to estimate the effects of performed guidance activities and to propose the necessary modifications of the new methodology for its future application. The evaluation of individual activities was carried out based on a reflective diary of lecturers and on the feedback gathered from students through reflective written and oral communication after each activity or at the end of the whole piloted module. The feedback was also provided by teachers (career counsellors).

Results and Discussions

Baseline – description

Three upper secondary vocational schools took part in the action research. These institutions are further in the text labelled with the letters A, B, C. All three schools are public institutions, established by a regional government ("kraj"), and all three offer education at ISCED level 3. The school attendance is completed by a school-leaving examination or an apprenticeship certificate. The school focuses on the automotive industry and information technologies (IT). In 2019, it was attended by 736 students. The team of the school counselling centre consists of four internal employees who, in addition to career

counselling, focus, for example, on the prevention of risk behaviour or the support of individuals with special educational needs. The school cooperates with an external psychologist. A career counsellor has been working in education for 16 years, of which he has been involved in career counselling for 10 years. He is not qualified for career counselling, but he has a pedagogical education. In addition to career counselling, he teaches economics. During the school year, he spends an average of 3 hours a week on career guidance. He uses practically all methods of career counselling. He cites coaching interviews as proven, while he considers giving advice ineffective. The counsellor organizes extensive cooperation with employers, organizes a career day at school, and includes topics related to career counselling in his teaching. School B specializes in teaching art disciplines. In 2019, it was attended by 439 students. There are two employees in the school counselling centre, one specializing in career counselling, in which he spends an average of 2 hours per week. This person has been working in education for 25 years, of which 13 in career counselling. The counsellor has obtained qualification for career guidance through specialized study. In addition to counselling, he teaches mathematics, information and communication technologies and vocational subjects. In 2019, School C was attended by 395 students studying gastronomic disciplines and other specializations. School counselling is provided by three employees, one focusing on career guidance. He has the qualification of a school psychologist. He has been working at the school for one year. Apart from counselling, he does not teach any other subjects. According to his estimate, he devotes 21 hours a week to school counselling, of which one hour is spent on career guidance.

The research team was interested in the extent to which career guidance and education are provided in three schools. One of the first sources of information was the results of a questionnaire survey, in which a total of 43 schools in the Czech Republic participated. The data relevant for the whole sample are displayed in the column titled "All schools". Respondents mostly attended the last years of upper vocational schools. It was therefore possible to assume that they should have already engaged in career counselling and education. To assess the baseline, relevant results from three pilot schools were selected and compared with the whole sample. Table 1 shows that there is insufficient overall awareness of career guidance opportunities. Only about a fifth of respondents (even only 4 % in one of the pilot schools) know who is responsible for career guidance. The similar result is about knowledge of the concept of career counselling.

Table 1

Awareness of career guidance (%)

	A	B	C	All schools
Do you know, who in your school is in charge of career guidance?	15	26	4	22
Have you ever heard the term career guidance in your school?	22	19	7	18

The questionnaire also mapped students' experiences of various forms of activity, which are usually part of career guidance (Table 2, for description of the Czech system of career guidance and education, see also Jirsáková, Votava, Urban (2020)).

Table 2

Students´ experience with career guidance activities (in %)

	A	B	C	All schools
Presentation of companies / employers at your school	74	35	72	63
Practical training outside of schools (on-the-job training)	55	26	51	50
Excursions to companies	43	26	13	39
Participation in job fairs and exhibitions	36	26	12	36
Programs at your school realized, for example, by a labour office or a pedagogical-psychological counselling centre	19	21	5	33
Psychological testing	17	21	5	32
Group activities in instruction, focused on choosing a profession	16	16	3	25
Programs organized outside your school (in a labour office, counselling centre or other institutions)	9	9	3	25
An individual interview / consultation with you and a counsellor	7	7	3	15

Students have most often experience with presentations of employers, they take part in excursions to various companies, and get ideas about their future profession during internships at contracted workplaces. There are obvious differences in the students' experiences: in schools A and C contacts with employers were more frequent than in school B. The reason may be that school B offers mainly artistic disciplines, in which training occurs mainly in school workshops and not outside. In schools A and B, less than a fifth of respondents encountered psychological tests or group forms of guidance, in school C it is even less so, which may indicate a different approach and strategy of services offered, but also less overall support for career counselling by the school management. Surprising is the very low incidence of individual forms of guidance and counselling, such as a counselling interview – in schools A and C around 7 %, in school B only about 2 % of students gained such experience. These numbers may indicate that there is insufficient staff capacity in career guidance, or that school counsellors prefer more frontal work with the whole class or they just distribute information.

As the next part of baseline analyses results from a diagnostic battery of twenty-one questionnaire items were processed. These items investigated which areas of career guidance and education the students from three pilot schools already encountered during their school attendance and in which areas they need to develop further. The diagnostic battery contains three basic categories of topics: further education, labour market and soft skills.

According to the students' answers, all items were lined up in two rows. The first sequence corresponded with the occurrence of each topic in the school education (for example, practically all students have already created a PowerPoint presentation). The other one was lined up according to the interests of students to learn more in these areas. By comparing the two rows, we determined the following four types of topics from the perspective of students:

- **frequently taught topics, high motivation of students** (for example, how to start a business, recognition of own strengths and weaknesses, preparing for a job interview, presentation in public (e.g., how to speak in front of others));
- **poorly taught topics, high motivation of students** (opportunities to study abroad, opportunities to work abroad, stress management; how to learn effectively);
- **frequently taught topics, low motivation of students** (what to do in case of unemployment, searching for job offers via the Internet, how to find a job in the profession which I study, what to do if I do not like my current direction, requirements of employers in the field what I study, my rights and responsibilities as an employee, what can I do to overcome learning difficulties, writing a CV, preparation of a presentation);
- **poorly taught topics, low motivation of students** (how to determine which field of further education would be suitable for a student, how to plan further education (where and how to continue with education) and what ideas do students have about their future life.

It follows that students in all three schools prefer to develop certain areas of soft skills (such as job preparation, stress management, or learning to learn effectively) because they assume that they will need them when applying for a job. They lack support for foreign mobility in the field of further study or employment. The fourth group of topics is interesting. It seems that neither the school nor the students need to learn more about their future careers, about their further education, or about life plans and the future in general. However, this does not mean that this area of counselling does not make sense, but, likely, counsellors, teachers, and students did not have the opportunity to try it out and assess its possible benefits. The results also show differences between schools. School A, which focuses on the automotive field, highlights the students' need to learn how to start a business but does not feel the need to help them find a future job, as there are plenty of job offers in this sector. We could also assume that students from A are more pragmatic and confident.

Overall, awareness of career guidance at the three pilot schools is low. Students most often have experience with presentations of companies that cooperate with schools or attend trade fairs for job opportunities and educational offers. Schools lack methods focused on decision-making processes and career planning (individual and group activities, self-knowledge activities). Students themselves often take a pragmatic approach; they would like to focus on some areas of soft-skills in their learning. On the contrary, they are not interested in topics related to career planning and ideas about future life, which,

however, does not exclude that these topics may also be important. It is also clear that there is not enough time allocated for career guidance.

Project of a new Career Guidance Program

The pilot study at three secondary vocational schools was the first test to show the advantages and disadvantages of the counselling techniques and approaches used to guide students' further career adaptation and development. The experience from the pilot verification will help to fulfil the intention of the whole project, thus to prepare a range of counselling activities for secondary vocational schools in the future, which should correspond to knowledge and theories about career development, secondary vocational school environment, and career maturity of pupils at different stages of training.

The pilot validation had to respect school regulations and work capacity of the research team. To test in the given time as many activities as possible, the pilot of the new program was divided between schools A, B, and C and among pupils of different grades. The pilot program was focused mainly on students with specialization in IT, multimedia communication, artistic processing of wood and metals, and breeding of exotic animals. Types of study direction were intentionally different. Three lecturers in cooperation with the school career counsellor, who always participated in the program and had access to all materials, oversaw the preparation and implementation of the counselling activities.

Thematically, the pilot verification was divided into three parts – self-knowledge and knowledge of others (identification and naming of their own abilities and skills, self-presentation and personal branding), employers' expectations and labour market requirements (how and where to look for work), "elevator pitch" training and job interview. The topics of self-knowledge were used mainly by second-year students. Third- and fourth-year students paid more attention to preparation for the labour market, their own self-presentation, and methods of finding a job. For example, the following methods were used in the pilot program: working with mentoring cards, photographs, video, working with a story, role-playing, worksheets. Thanks to the activities, students should be able to identify their abilities, learn how to prove their competencies, think about work values, consider what they expect from work, and how work should fulfil them. Pupils eventually tried to connect their competencies with job positions. They deepened their self-knowledge with the help of a personality questionnaire.

Results of the program evaluation

In school A, five modules were implemented with the extent of three to four teaching hours among students of the second year with a specialization in multimedia. A total of 18 teaching hours were held in this class from October to December 2019. These were mostly activities for self-knowledge, revealing and naming strengths, self-promotion, completing the personality typology test, and individual analysis of test results. All activities were subsequently discussed with the pupils during follow-up lessons with a career counsellor. In the third and fourth year of the study direction IT and multimedia communication classes were held in February, early March, and September 2020. There were between 15 and 22 persons in the class. In this case the program contained a reduced part of self-knowledge activities. More attention was paid to information about the labour market, to activities of HR specialists, and to procedures of employee selection, including training in a job interview and writing a CV. Students also had the opportunity to visit a company operating in information technologies and thus obtain knowledge about the use of information technology in the retail chain. They got acquainted with the course of recruitment to an international company, with the requirements for IT positions, and finally they could try out the assessment centre. Students saw the benefit of the piloted program mainly in getting to know their classmates in individual activities. They greatly appreciated the opportunity to participate in such activities and think about themselves and their future, although most do not yet have an exact idea of where they want to enter the labour market. They also acknowledged the personal analysis of the completed tests. In the reflection, for example, the students stated: "*I am glad that we were able to have these activities, I enjoyed it and it gave me a lot of things for the future.*" "*I learned something new and found that my direction was right.*" "*I know more about myself and I know what to expect from work.*" "*I learned a lot about my character.*" "*I know what's right for me and I know which way to go.*" "*I enjoyed mumbling about myself for one and a half minutes, I didn't expect it to be that hard.*"

Students from school B completed the same type of activities, but these were the third and fourth years of the artistic fields of carpenter, blacksmith, and woodcarver (autumn 2019 and winter 2020). There

were always between 15-20 students in the class. Modules were taught during a project week focused on the employment of students, which included both our activities and visits to various employers at the school. The feedback from the participants showed that the activities of the first block focused on self-knowledge were unusual for them. They had to open up to themselves and to the group of their classmates, which caused problems for some of them. Gradually, they gained confidence, and activities earned meaning for them. It was obvious that this type of exercise was new to them. In the second block, which focused on finding a job and building a career, the students already cooperated, they were active, because they themselves were already looking for part-time jobs and opportunities for further study, and they were already partially oriented in this issue. The first block of activities brought them specific information about the labour market, introduced them to activities of HR specialists, and to procedures of employee selection. Students understood the complexity and interconnectedness of the world of work. In contrast to school A, these students in most cases have a clear idea of their employment. In this case, the intention was rather to show them in the individual activities why it makes sense to do the activity and what new they will learn from it. There was a greater focus on practical advice and tips for entering the labour market. They did not show as much interest in self-knowledge activities as students from schools A and C. "*I'm thinking what I really want from my job.*" "*I hate to talk about myself, but it gave me something.*" "*I didn't know the career web pages of companies and how to read it.*" "*Something could be shorter; I would add more advice for practice.*"

In school C, verification occurred in the autumn of 2019 in the extent of three meetings in the second year of the study program breeding exotic animals. During the pilot verification, it was known that there were 30 students in the class, which turned out to be more demanding for this type of teaching in terms of organization and implementation of activities. On the other hand, it was mostly a girls' class, so they may have become more actively involved, appreciating self-knowledge activities and learning about their classmates. Further pilot verification was stopped due to school closures caused by the Covid-19 pandemic. The only thing that could be maintained was online analyses of personality questionnaires, which we conducted both online and by phone.

All activities were always attended by the career counsellor of the school, who had the opportunity to observe tasks, assignments and reflective discussions. The project team also made all materials accessible for school counselling professionals. The efficiency and effectiveness of tested activities were discussed after each module so that it would be possible to adjust all activities in the next school year.

As an example of how the program was evaluated by the career counsellors themselves, we would like to mention the statement of one of them: "*The students enjoyed the lessons a lot. They were especially happy about the opportunity to complete the personality questionnaire. If they just filled in this questionnaire, got the results and that ended it, it would not make much sense to them. If you really go through the questionnaire with them, then the benefit is considerable. What was fascinating for me was that I and other students in the class learned a lot of interesting things about schoolmates only in the 4th grade. Therefore, it was also a great benefit for me as a teacher. I can clearly say that I wish there would be more projects of this type in schools and there would be more people working on similar projects with such enthusiasm.*"

Conclusions

The present epoch is favourable for the development of career guidance. It seems to be necessary to support young people in developing their career management skills. The "Corona crisis" has shown that it is essential to be prepared for changes in the labour market, to be able to respond to current social and economical conditions, and to be able to adopt both new and flexible scenarios in one's own career path. This opinion corresponds to the need to develop further career guidance activities not only in primary education but also in secondary schools. The substantial part of this task aims to activities that can go deeper in the trainee personality (avoiding just distribution of information) and can be more complex (covering all components and phases of career development).

Students at secondary vocational schools have, so to speak, chosen their direction, they are already preparing for their future profession. They take part in professional internships, participate in competitions, projects, and practical training in companies. However, do they really know what they want to do in the future? Where and how will they be able to apply what they learned in school? Are

they ready for the reality of the labour market? The mission of secondary vocational schools should be to offer conscious preparation for the chosen profession. Schools should show the pros and cons of a future career, motivate students for the profession, and launch a new workforce prepared both professionally and socially. To reach this aim, schools should be helped by a functionally set career guidance strategy, which each school should tailor itself according to its own conditions. The school should answer the question of who its graduate is, which competencies should this graduate possess, how to use acquired competencies in practice and which competencies are required by the labour market.

Therefore, at the beginning of our project, we conducted both a quantitative survey among students and teachers and subsequently a qualitative survey (interviews) with career counsellors at our three pilot schools. It was found that awareness of career counselling is very low among students, a small percentage had the opportunity to try individual counselling. It turned out that schools lack an overall strategy for the development of career counselling at school, although they have more or less support of school management, most counselling activities are based primarily on their time options and enthusiasm of each individual counsellor.

The pilot study clearly showed that students of various disciplines do not have much experience with career counselling. For this, they are willing to think about themselves and their future employment, they want to know themselves better and they are willing to try new activities that will help them see not only themselves but also their classmates in a new light. They also greatly appreciated the individual consultations and the analysis of the personality questionnaire. There was also a difference between schools and classes, especially in their gender composition and number. The ideal number of pupils is between 15 and 20 for the effective implementation of activities. If boys predominate in the class, the emphasis on the practicality and applicability of the acquired knowledge and skills has increased, including the justification of the benefits of the activity. The feedback from career counsellors and, in fact, the students, showed that they were happy with an external form of teaching, it was easier for the students to establish a relationship and to be more open than they would be in case the program was provided only by a schoolteacher. It has been verified for us as instructors that it is necessary to know the school environment, educational programs of individual fields and to establish cooperation with the school management and the career counsellor.

In the next year of piloting, due to the COVID-19 pandemic and the limited regime of secondary vocational schools, we are also preparing online variants of activities and online materials for career counsellors in schools so that they have all necessary information and materials together and available.

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Gamification and Using It in Organisational Consulting

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Abstract: Gamification has been a topical item in education, marketing, human resources management, business, and organisational consulting in the past decade. Nowadays, companies have a wider range of available organisational consultations: organisational supervision is developing, coaching is popular, and there is a wide offer of business training sessions. This study aims to research gamification in organisational consulting, analyse the differences in the opinions regarding the use and availability of gamification in the professional activities of coaches, supervisors and business trainers. The survey developed by the authors of the study consisted of four sets of items (Information about Gamification, Application and Availability of Gamification, Believing Gamification Methods, Team/Group Responsiveness to Gamification) and two additional statements for the purpose of confirming the responses given by the respondents regarding their beliefs in gamification as an effective method and their readiness to use it. The associations related to the game and gamification were also researched. The questionnaire about gamification in the professional activities of supervisors, coaches and business trainers was sent electronically to professionals practising in Latvia. Questionnaires from 85 respondents were received and processed. The results demonstrated no statistically significant differences in the opinions of coaches, supervisors and business trainers regarding the use of gamification in organisational consulting. It was found out that the concept of gamification has not been sufficiently explained and there is still no common understanding regarding it in Latvia. More than half or 55 % of the 85 respondents in the survey do not know where to acquire gamification. At the same time, 91 % of the respondents in the survey specify that they are willing to acquire the methods of gamification. The authors of the study believe that it is important to proceed with the research in organisations to find out the experience of the organisations in gamification and to develop gamification training programmes for the organisations.

Keywords: gamification, organisational supervision, coaching, organisational consulting.

Introduction

Gamification has been a topical item in education, marketing, business and organisational consulting in the past decade. Nowadays, more than 40 % of the top 1,000 organisations in the world use gamification as the primary mechanism in the transformation of their business operations (Hayward, 2017). As anticipated by some future strategists, gamification has constantly increasing impacts on human life not only within organisations, but also outside them (How to Succeed…, 2018; Schnell, 2010). Y.K. Chou also specifies that, over the past few years, gamification has reached a social breakpoint and is starting to emerge in every aspect of life from education, work, marketing, upbringing of children, sustainability to even the healthcare sector and scientific testing (Chou, 2019). The international gamification market was 5.5 billion US Dollars in 2018, already 7.17 billion in 2019, and a substantial growth is still being anticipated to reach 12 billion US Dollars in 2021. It is largely rapid due to the technological innovations, particularly the tremendous number of mobile devices already being manufactured with a wide base of settings adapted to the needs of the gamification market (Joy, 2020). The increase is also being experienced due to the fact that gamification systems are becoming increasingly acknowledged as suitable in the formation of human behaviour for the purpose of supporting innovation, engagement and productivity (Gamification market…, 2020).

The simplest and most widely published definition of gamification reads as follows: gamification is the application of game design elements in non-game contexts. (Deterding et al., 2011). Other, more detailed definitions are also available. For example, gamification is taking the most essential from a game and applying it for real business targets (Saran, 2015). Or, for instance, gaming expert K.M. Kapp believes that gamification is the use of game-based mechanisms, game design and game thinking to engage people, motivate action, facilitate learning and solve problems (Kapp, 2012). Gamification is a simple concept for making non-game systems or processes more attractive by using the principles of a game (Bishop, 2014). Generally speaking, the aim of gamification is to change something in a game so that the behaviour is

changed or, in other words, a game becomes more than just absolute entertainment (Hayward, 2017). Gamification offers the best tools mankind has ever invented to create and maintain engagement of people in work (Zichermann, Linder, 2013). The size of the organisation is of no significance, the biggest challenge is the engagement of the employees in work (Padgett, 2013). The significance of engagement in work is also emphasised by B. Bruke, who provides the following definition for gamification: "Gamification is the application of game mechanisms and design experience for the purpose of digitally engaging and motivating people to achieve their targets" (Bruke, 2014). Highlighting the substantial role of gamification nowadays, B. Bruke has said: "Gamification creates entirely new work engagement models by reaching new communities of people and motivating them to achieve targets they even might not have been aware of!" (Bruke, 2014). The author also specifies that gamification is a powerful, goal-oriented approach in the engagement and motivation of people while, in the meantime, pursuing the aims of the organisation. Gamification can be used to motivate people to change their behaviour, develop skills, and guide innovation. A key factor of success in gamification is engaging people on emotional level, by motivating them to attain the set targets (Bruke, 2014). Engagement of employees covers everything – with own engagement in work, with the management and leaders, with anyone else, and with the organisation (Zinger, 2014). Nowadays, gamification is mostly applied in training sessions and education by encouraging innovation and increasing the performance of the employees, focusing on the areas with clear targets, including sales and other support areas (Mathieson, 2017). One of the gamification trends is that it is more frequently applied in corporate learning, business training, partially or fully gamified systems which meet most of the corporate training needs are used (Pandey, 2019). Gamification is used in many more professional fields, including pedagogy (Lukashenia, Levanova, Tamarskaia, 2020).

A survey of the situation in Latvia, i.e., the gamification practices and experiences, the most frequently used games and their elements, leads to a conclusion that organisations have little information. However, a doctoral thesis on the impact of gamification on employee engagement in a complex system of human resource management processes (Ērgle, 2020) was defended very recently. The Educational Games and Methods Association has been operating in Latvia since 2018 and unites the authors of games and other interested parties. The most well-known event in the organisation of which the Association has been participating several times in collaboration with the developers of games is The Carousel of Methods during which the interested parties and anyone using gamification in organisations (including supervisors, coaches and business trainers) can learn information about the latest games and attend seminars and workshops. Company *Tavas Metodes* has also been operating actively in the area of games and methods. The organisation offers interactive and gnostic methods as well as games for professionals for working with personal and professional growth of people, relationships, and emotions (Par mums, 2018). Additionally, the benefits.lv internal communication platform for the engagement and evaluation of employees is operating in Latvia. The company provides employers with personnel engagement and motivation tools to use as rewards to the employees for their loyalty, allowing them to choose the benefits they are interested in, to create positive motivation and facilitate engagement and work productivity. It helps companies to become better aware of the needs and interests of their employees, whereas the employees gain access to a personalised account where they can manage the benefits awarded to them (Ceļā pie laimīgiem…, 2020). A similar platform is efectio.lv which offers a digital micro learning platform supplemented with elements of gamification to give an opportunity to educate, engage and unite company employees with a modern human resource management approach (Efectio programmu piedāvājums…, 2020).

The aim of the study is to research gamification in organisational consulting, analyse the differences in the opinions regarding the use and availability of gamification in the professional activities of coaches, supervisors and business trainers.

Research questions: Are gamification methods used in organisational consulting in Latvia? What information about gamification is available in Latvia? Are there significant differences in the opinions of consultants of various types (coaches, supervisors, business trainers) regarding the use of gamification?

A tendency observed in Latvian companies is that they purposefully plan and introduce elements of a game not only as a bridge between the clients and the services/product of the company, but also as a tool in the personnel management processes, including learning, in the so-called onboarding processes and elsewhere (Rūsa, 2016). The summary leads to a conclusion that there are some organisations in Latvia which make games, there are Internet platforms based on gamification solutions as offers to organisations, games are

developed or adapted by various learning and business training enterprises. However, there is no vision of the overall development of this area, and there is also no such information. Therefore, it is important to explore the opportunities available to supervisors, coaches and business trainers (henceforth referred to as consultants) for the use of gamification. The research in the practical part is also based on analysis of the experience of the professionals from these three areas in the use of gamification.

Methodology

Study procedure. The primary data have been obtained using a questionnaire developed by the authors of the research study. The questionnaire about gamification in the professional activities of coaches, supervisors, and business trainers was sent electronically to coaches, supervisors and business partners practising in Latvia. The questionnaire was sent to 130 supervisors, 100 coaches and approximately 80 business trainers, including the companies representing them. A link to the questionnaire was also created on specialised websites where the direct target audience can be reached, such as *Linkedin*, specialised websites on *Facebook*, including the page *Latvijas kouči* (*Latvian Coaches*) and others. The contact details of most of the supervisors whom the questionnaire was sent to can be found on the website of the Latvian Association of Supervisors. The research study was conducted between January and May 2020.

Participants. As a result, correctly completed questionnaires from 85 respondents were received and processed. 41 or 48 % supervisors, 31 or 37 % business trainers and 13 or 15 % coaches took part in the survey. Most or 29 % of the respondents have been operating in organisational consulting for up to five years, and a very similar amount, i.e., 26 %, of the respondents have experience of 6 to 10 years. 21 % of the respondents have just started their professional career, 13 % of the respondents have long-term experience of 11 to 15 years, and 11 % have been operating in this area for more than 16 years. Most or 46 % of the respondents in the research study represent the age group of 40 to 49 years, the next largest group with 27 % of the respondents is 30 to 39 years, followed by the age group of 50 to 59 years, represented by 22 % of the respondents. The groups represented the least are 60+ years and below 29 years, represented by 1 % and 4 % of the respondents respectively. The vast majority of the respondents are females (84 %), and 16 % are males.

Instrumentation. The aim of the survey was to find out the opinions of organisational consultants (coaches, supervisors and business trainers) about the use of gamification in organisational consulting. The questionnaire developed by the authors of the research study consists of the following parts: the first question determines the area of consulting, namely, whether the respondent is a coach, a supervisor or a business trainer. If the respondent has several roles, the questionnaire has "Mark the main one" as an option. The further completion of the questionnaire should be based on this main role. The questionnaire begins with two questions regarding associations: the first one is about a single word the respondents associate with the concept 'Game', and the second one is about what they associate 'Gamification' with. The questionnaire consists of 4 sets of items or scales with statements, with the responses to them provided in a Likert scale of 1 to 4 where "1" is 'disagree entirely', "2" is 'rather disagree', "3" is 'rather agree', and "4" is 'agree entirely'). The statements of the first scale are regarding the information available to the gamification consultants, it comprises seven statements (Information About Gamification). The second scale refers to the application and availability of gamification in terms of games and in the context of costs, and it comprises five statements (Application and Availability of Gamification). The third scale is about the belief of the consultants in the gamification methods, it comprises 10 statements (Believing Gamification Methods). The fourth scale is about the participants in gamification and their responsiveness and engagement in it, and it comprises 5 statements (Team/Group Responsiveness to Gamification). There are also two additional statements whose purpose is to additionally confirm the responses given by the respondents regarding their belief in gamification and readiness to use it. They are the following: 1. I believe gamification as an effective method in organisational consulting (Q1); 2. I am planning to apply gamification methods in organisational consulting within the nearest year (Q2). The respondents had to rate the last two statements on a Likert scale of 1 to 7, where "1" is 'disagree entirely' and "7" id 'agree entirely'.

Data processing methods: methods of descriptive statistics and methods of conclusive statistics were used for the processing of the data. The statistical analysis was carried out using the IBM SPSS 23.0 statistical data processing software. Research study restrictions: the research study restrictions relate to an insufficient study sample. Additional research studies need to be conducted to research the given problem with a larger study sample.

Results and Discussion

The reliability of the internal content of the survey was verified using the Cronbach's Alpha coefficient. The total value is 0.896, and this suggests that it is good, close to excellent. The Kolmogorov – Smirnov test (K-S test) has been performed, and the data show that only one scale, Believing Gamification Methods) corresponds to the normal distribution, because it is the only one with sig ≥ 0.05.

Since one of the questions in the research study is whether there are statistically significant differences between various types of consulting (coaches, supervisors, business trainers), the non-parametric analysis method was used for a comparison of three and more groups using the Kruskal-Wallis test. As shown in Table 1, the four principal scales and the two additional questions have a sig ≥ 0.05, and this means that there are no statistically significant differences between the types of consulting. Although, regarding Q2, the study sample has no statistically significant differences between the groups (sig = 0.078), the significance is pretty low, and this means that, potentially, a larger number of respondents would result in significant differences.

Table 1

Kruskall-Wallis test results for the determination of the differences between the groups of respondents

		Information About Gamification	Application and Availability of Gamification	Believing Gamification Methods	Team/Group Responsiveness to Gamification Methods	Q1	Q2
Coaches	*Mean rank*	47.73	43.42	46.08	37.46	46.54	44.31
Supervisors		42.48	38.11	39.23	40.77	40.07	37.26
Business trainers		41.71	49.29	46.69	48.27	45.39	50.05
	Asymp. Sig.	**0.745**	**0.158**	**0.393**	**0.241**	**0.542**	**0.078**

The calculation of the correlation was done using the Spearman's correlation coefficient determination test (because the data do not correspond to the normal distribution). There is a weak correlation between the following scales: Information About Gamification and Team/Group Responsiveness to Gamification, where the correlation coefficient is 0.269. There is also a correlation between: Team/Group Responsiveness to Gamification and Q1 and Q2 (or two additional questions), 0.360 and 0.343, respectively. A statistically strong correlation, characterised by a coefficient of 0.6 to 0.8, is between the following scales: Information about Gamification and Application and Availability of Gamification, which is logical; and means that the more information there is, the more opportunities are sought for and the more gamification is used among the consultants, and between: Believing Gamification Method and Q1 and consequently, the higher the Belief in Method scores, the higher the score on the two additional questions, and this confirms belief in and readiness to use gamification in organisational consulting within the nearest year (Table 2).

Table 2

Correlation between the principal scales of the questionnaire and the additional questions

Information About Gamification	Application and Availability of Gamification	Believing Gamification Methods	Team / Group Responsiveness to Gamification	Q1	Q2
1.00	0.626**	0.507**	0.269*	0.443**	0.493**
	1.00	0.690**	0.431**	0.580**	0.780**
		1.00	0.505**	0.675**	0.621**
			1.00	0.360**	0.343**
				1.00	0.587**
					1.00

** Correlation is significant at the 0.01 level: p (sig) <0.01
* Correlation is significant at the 0.05 level: p (sig) <0.05

The first scale is about the information available to the consultants regarding gamification. More than half or 55 % of the respondents disagree or rather disagree with the statement, that they know where to learn gamification methods in Latvia and 46 % disagree or rather disagree that organisations in Latvia

have information about the possibilities of using gamification. At the same time, 91 % of the respondents indicate that they are willing to acquire the methods of gamification, and 80 % would use gamification more often if they had acquired them (Table 1).
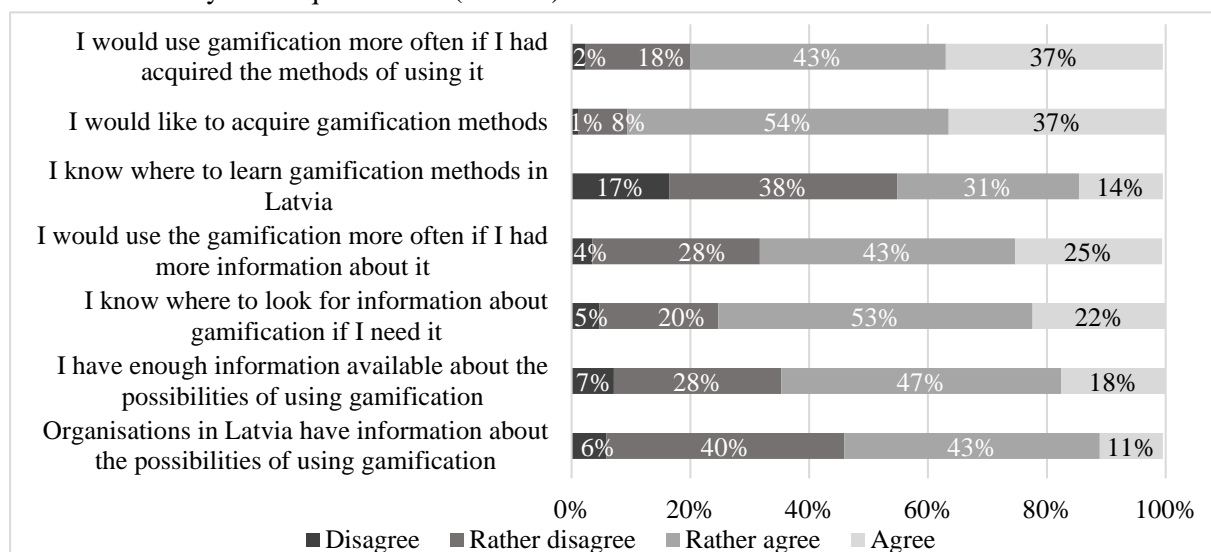

Figure 1. Summary of the responses provided by the respondents for the Information about Gamification scale (n=85).

The second scale is about the application and availability of gamification among the consultants. Most of the respondents (74 %) rather disagree or disagree with the statement that gamification is a frequently used method in organisational consulting in Latvia, with only 1 % indicating that they agree with this statement. 81 % indicate that they would use gamification more often if a wider range of games and their elements was available. At the same time, 66 % of the respondents have gamification tools available for organisational consulting. To the fourth statement, which is about whether the consultants apply gamification in organisational consulting, 60 % of the respondents have provided responses that they rather agree or agree with the statement. Respectively, the response to the first research question (whether gamification is used in organisational consulting in Latvia) is yes (Figure 2).
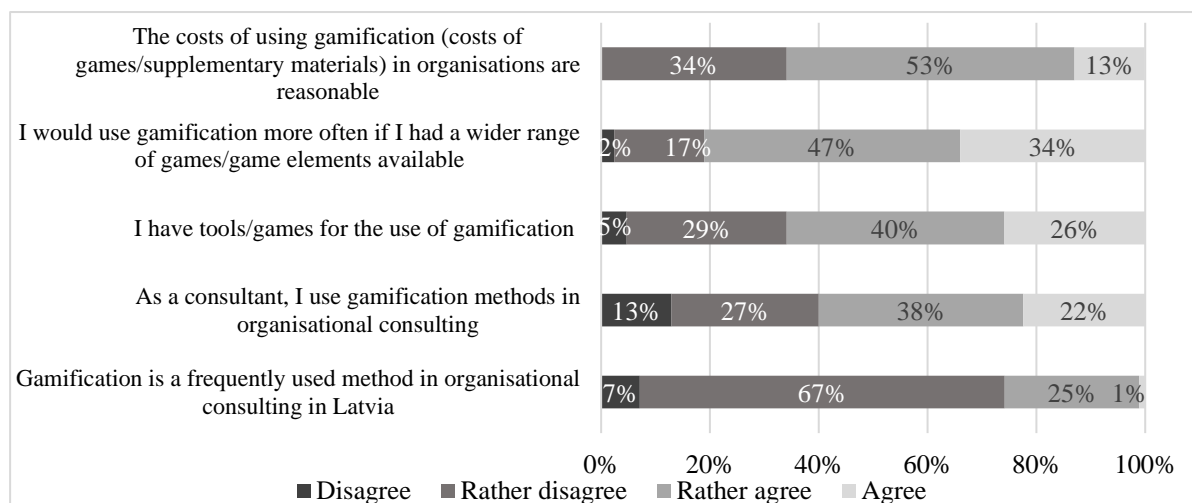

Figure 2. Summary of the responses provided by the respondents for the Application and Availability of Gamification scale (n=85).

When viewing the scale's responses by the groups of respondents, the most substantial difference among the consultants is for the availability of games/tools, where 46 % of the supervisors respond with 'disagree' or 'rather disagree'. For the coaches and business trainers, this score is 15 % and 34 % respectively, and this is comparatively lower. The third scale is about believing the gamification methods as efficient methods in organisational consulting. The statements of this scale have practically no 'disagree' responses. An exception

is the reversibly analysed statement that gamification is just a tool for entertaining the team/group with no significant impact on the result, as 77 % of the respondents either disagree or rather disagree with this statement. The highest 'rather agree' and 'agree' score, which is 100 %, is for the statement that the use of gamification facilitates engagement of the participants (Figure 3). The respondents believe the positive effect of using gamification, which is also 100 %, the statement "I like Gamification" also has a high score (98 %), and the score for the "The use of gamification facilitates openness of the participants" is 97 %
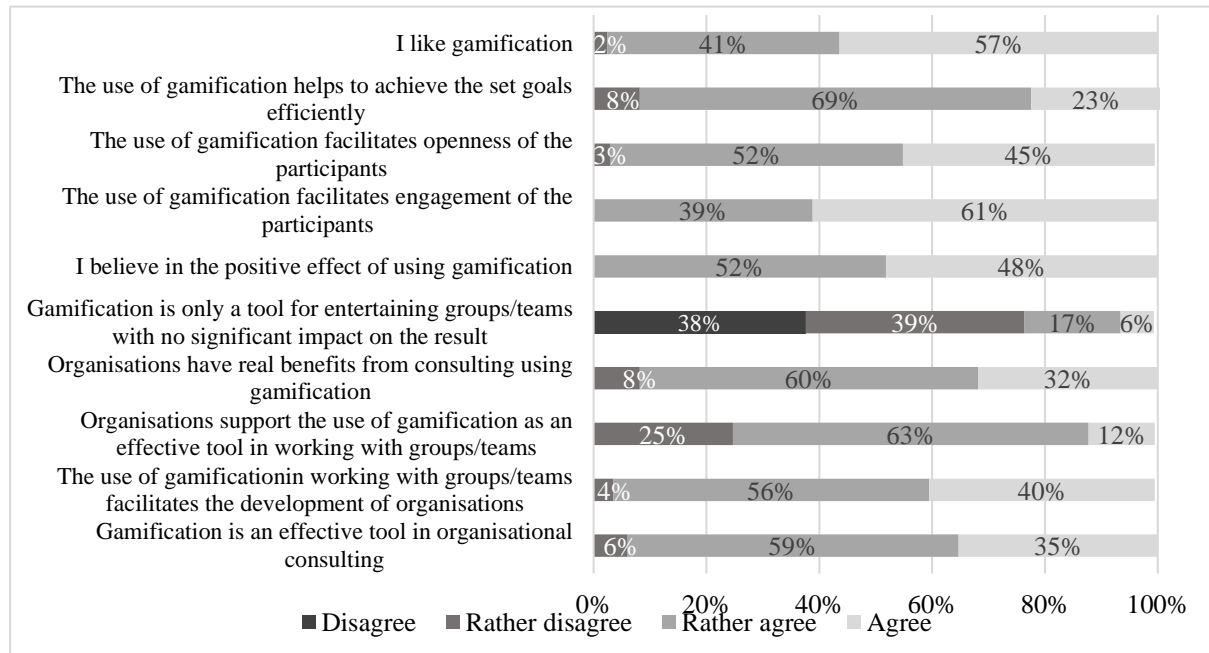

Figure 3. Summary of the responses provided by the respondents for the Believing Gamification Methods scale (n=85).

The fourth scale is about the participants in gamification and their responsiveness to gamification. It comprises 5 statements, with two of them to be analysed reversibly. No 'disagree' responses have been received to the last three statements of this scale, and there are also few 'rather disagree' responses. 9 % of the respondents have provided 'rather disagree' responses to the statement about the positive perception of gamification, and 13 % of the respondents have responded with this to the engagement of the teams/groups in the gamification process. The results suggest group and team interest, openness and engagement in the process of gamification (Figure 4).
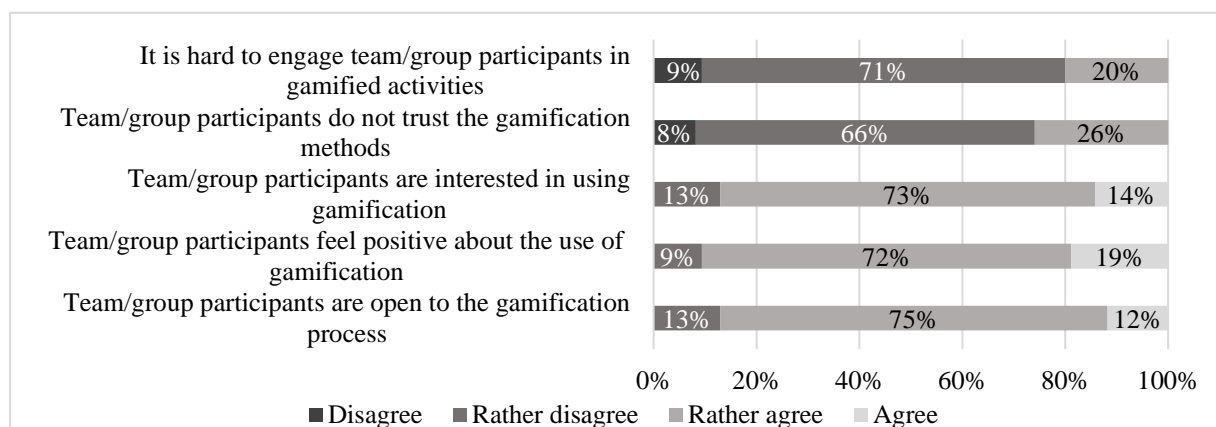

Figure 4. Summary of the responses provided by the respondents for the Team/Group Responsiveness to Gamification scale (n=85).

As mentioned previously, the questionnaire includes two questions regarding associations: the first one is about a single word the respondents associate with the concept 'Game'. The second one is regarding what they associate with 'Gamification'. The first associations were summarised for the word 'Game'.

The results suggest that the most frequent (15 times) association appearing in the responses provided by the respondents can be characterised by the word 'interesting'. The further words are: fun, joy and cheerful (repeated in the responses 13 and 12 times respectively). Frequently mentioned associations are excitement, fascinating, creativity, competition, childhood, rules, easy.

For demonstration purposes, the associations with the word 'Gamification' are shown using a cloud of words (Figure 5). The words most frequently mentioned by the respondents for their associations with the concept Gamification' are: interesting, fun and excitement. In addition to these specific associations with gamification, different from the associations with a game, there are words like team, learning, engagement. It should be noted that, in the context of gamification, in contrast to a game, there are negative associations as well – disbelief, manipulation, not till the end, resistance, artificiality, non-Latvian, cunning and others. There were about 80 unique associations for the word "Gamification", only the most frequently mentioned are included in the cloud of words (Figure 5). For the word "Game" there were mentioned more than 100 unique associations.

Figure 5. The cloud of words for association with the concept 'Gamification' (n=85).

These results are similar to the results of other conducted research studies where gamification has been recognised as one of the increasingly frequently used methods in corporate learning and business training where partially or fully gamified systems are used to meet most of the corporate training needs (Pandey, 2019), and it is considered to be an innovative solution to facilitate motivation (Dulskaia et al., 2017). By using gamification in training, organisations can improve the engagement of the employees, increase productivity and improve operational performance (Gamification…, 2012; Zichermann, Linder, 2013; McCormick, 2013; Bruke, 2014; Dulskaia et al., 2017). Similar results have been obtained in Latvia as well, where two groups of participants responded to the same questions in a survey about gamification. The survey shows that 89 % of employees believe that they would be more productive if they had more tools with game elements, such as collaboration or inner communication tools. The results of the research study show that learning with gamification provides significantly higher motivation (by even 83 %), compared to the score of 28 % without gamification, boredom drops from 49 % to 10 %, and only 3 % of the respondents feel non-productive in learning with the use of gamification (Dudko, 2020). Therefore, it is essential to proceed with research studies to find out the experience of organisations in gamification. For example, whether gamification is used in organisations, to what extent and what games, for what purposes and what the short-term and long-term benefits the organisations have from gamification.

Conclusions

The results of the research study show that gamification is applied in organisational consulting, but 74 % of the respondents still mention that gamification is not a frequently used method in Latvia. The level of belief in gamification as an effective method in organisational consulting is high, and 73 % of the respondents have specified that they are planning to use gamification in organisational consulting within the nearest year. The theory and the results of the research study lead to a conclusion that organisations see substantial benefits in the use of gamification, because 75 % of the respondents have responded positively to organisational support to the use of gamification as an effective tool in working with teams or groups.

The concept of gamification has not been sufficiently explained and there is still no common understanding regarding it in Latvia. There is very limited information regarding the theoretical approaches to gamification,

the views of various globally renowned experts, or successful game designs. In the meantime, new companies are emerging and offering gamification platforms for organisations and employees, and this suggests that gamification is developing in Latvia. Organisational consultants have insufficient information about the opportunities for acquiring gamification and methods of gamification. This is suggested by some of the results of the research study, such as the low levels of knowledge about the opportunities for the acquisition of gamification and its methods (more than half or 55 % of the 85 respondents do not know where they can be acquired). At the same time, 91 % of the respondents indicate that they are willing to acquire the methods of gamification, and 80 % would use gamification more often if they had acquired them. This suggests that game developers have vast opportunities in this field. Although only approximately 34 % of the respondents indicate that do not have the necessary tools/games for using gamification, 81 % of the respondents state that they would use gamification more often if they had a wider range of games available.

There are no statistically significant differences in the opinions of the coaches, supervisors and business trainers regarding the use of gamification in organisational consultation. Nevertheless, business trainers and coaches plan to use gamification within the nearest year more frequently than supervisors. Although statistically insignificant, there are differences in the availability of games: 46 % of the respondents have responded 'rather disagree' or 'disagree' to the statement "I have tools/games for the use of gamification", whereas this score is not that negative for coaches and business trainers (15 % and 34 % respectively).

The authors of the study believe that it is important to proceed with the research in organisations to find out the experience of the organisations in gamification and to develop gamification training offerings and programmes for organisations.

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