

The Study on Competence - Based Curriculum Implementation in the Subject Home Economics and Technologies

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Abstract: In recent years, reforms which are related to the notions “competences” and “the learning outcome” in curricula are implemented in many countries. Starting with the year 2018, the implementation of Competence-based Curriculum has to be started also in Latvia. The new model of education aims at developing students’ competences which means - knowledge, understanding, skills, abilities and attitudes. This means that the role and tasks of teachers are also changing. Teachers will have to think not only about teaching, but also about the competences their students develop. Aim of the article: to evaluate and analyze which key competences, defined by European Council, can be developed in the curriculum of the subject Home Economics and Technologies. On the base of the acquired knowledge in the theoretical studies the content of the subject Home Economics and Technologies and the methodology used was assessed. Research base was Jelgava Secondary School N 4. 25 students from form 9 were involved in the study. They learned according to the author’s Home Economics and Technologies curriculum. The study was carried out using the Likert scale. The results confirmed then the most developed competences are: technology and digital competences and social, cultural awareness and creativity expression competences. Mathematical and natural science key competences are partially developed.

Key words: core skills, competences, subject Home Economics and Technologies, school education.

Introduction

Nowadays the development of a personality is taking place in unexpected, rapidly changeable situations that are hard to predict (Huitt, 1997). The goal of education is to prepare students for real life and successful carea in future. They need not only to acquire the knowledge and skills but also to develop the ability to use their knowledge effectively and responsibly, to develop the determination to continue their lifelong education. That is why during the recent years, reforms have been carried out in curricula in connection with the notions “key competences” and “the learning outcome”.

Competence is the base of the action carried out by a human being in the world into a specific branch, solving the problems in changeable and real life situations. It is the ability to use the learning outcomes adequately in a certain real life context in a certain action (Pedagoģijas terminu..., 2000, 83). In difference to ability or skill, competence is more complex. It includes knowledge, skills, abilities, and also attitudes. Until this, the above mentioned elements were also included into educational standards, but they missed an appropriate common link.

Within the reform, a complex curriculum structure is being built where the focus on the subject content is being partially replaced with practical skills and cross-curricular approach. However, the practical introduction of the reformed or improved educational curriculum is only at a very early stage.

In 2006, European Council and Parliament defined the core skills of a lifelong learning – competences that are necessary to EU citizens for their personal growth and development, social involvement, public activity and employment (Hozjan, 2009; Eiropas Komisija..., 2012). They are as follows: ability to communicate fluently and without an effort in the native and in a foreign language as well; mathematical ability; key skills in Science and Technologies, cultural intelligence and creative abilities.

In the result of education reform, young people would have been given the opportunity to work in decent jobs, in order to maintain themselves and their families as well as to contribute to the country's development and personal life by developing the key competences (Mūžizglītības galvenās..., 2007).

European countries have already made a significant progress in implementing reforms, developing guidelines and including them in the curricula documents and the syllabus (Eiropas Komisija..., 2012; Pamatkompetenču pilnveide..., 2012).

Also the Latvia Ministry of Education is initiating an ambitious project that is based on implementation of competence-based education this year. The framework of competences is built through the European Union recommendations "Key Competences for Lifelong Learning" (Key Competences..., 2006). The project is also based on Strategy Papers of Latvia (Sustainable Development..., 2010; National Development..., 2012), in which it is recognized that one's own personal competitiveness in the labor market and the country's overall long-term growth can only be provided by investing in his/her own and his/her children's education purposefully and wisely.

Education reforms are aimed at arising students' interest for knowledge and lifelong learning. These reforms should follow in the curriculum - what and how has to be taught, as well as in learning and teaching approach, and in learning and teaching evaluation.

Also the environment has got an important role in which the learner is settled, therefor in the process of learning where the student can realise him- or herself as a personality, to learn key values of life (Амоншвили, 2001), to provide free and creative activity, to learn how to use all the opportunities of the real life flexibly (Geidžs, Berliners, 1999; Krastiņa, Pipere, 2004).

In the center of students' learning there is the development of their competences; exchanges in students - teacher relationship and virtualisation of learning environment; use of the everyday experience in the process of learning; exchanges in overall organisation of school work; cooperative pedagogy; involving, safe and motivating learning environment (Eiropas Pamatprincipu..., 2007).

This means that the teacher's tasks in preparing for lessons are also going to be altered by thinking not only about what has to be taught, but also which competence of students has to be developed.

In the result of these improvements, students have to be able to use their knowledge in different life situations, to adjust to them. The new skills should be acquired by moving from fragmented knowledge in a specific discipline to understanding of things and phenomena in interconnection, from the information to competences (Jauna, kompetencēs..., 2015).

Implementing competence approach, the subject system will remain strengthening cooperation among teachers at the school level while planning teaching and implementation. The curriculum will be divided into six key and six cross-cutting competences. The key competences are already being implemented at the present moment as school subjects: language competence; public relation and citizenship; cultural intelligence and art competence; mathematical and IT competence; science and engineering; health and physical activity competence.

The project is being realised by the State Education Curriculum. For realisation of it, financial grants from EU foundations will be provided. Cooperative partners are taking part in the project: local governments of cities and regions of the Republic. More than 17003 teachers from 80 Latvian educational institutions are going to be involved in the approbation of the curriculum. Now planned education reform affects all school subjects, also Home Economics and Technologies. Simultaneously with the new settings – for determination of goals and objectives in order to implement the educational reform, the current situation should be evaluated critically – the plusses both in the curriculum and in the methodology.

Nowadays Home Economics and Technologies is a complex, intradisciplinary school subject that is tended to the future and multitude of branches of action (economics, public relation and culture) (Piorkowsky, 2003; Richarz, 2003; Von Schweitzer, 2006; Thiele-Witting, 2003). Understanding (knowledge and skills) the meaning and forms of organisation of home economics is the base of human action, quality of life and satisfaction of her/his life (Pridāne, 2009).

In the documents that explain the meaning of the education reform it is stated that the emphasis in the competence based curriculum will be put on students who are using the knowledge, learned in class, in different life situations: both in the learning situation of other subjects and in the real life. The above mentioned claim is not new. It is one of the key rules of the subject Home Economics and Technologies. However, in the real life situations students encounter some difficulty in attributing their knowledge to the contents of other subjects.

In the education of Home Economics, there is a regular necessity to check and use the knowledge and skills acquired at other subjects in real life. It is the only subject in elementary education where at least

75 % of the course time is devoted to learning the necessary skills for students' everyday life. The curriculum is aimed at building the understanding about one's own quality of life, environment, opportunities in providing healthy diet and lifestyle, responsible and effective use of resources and acquiring practical experience in handicraft, cooking and other technologies (Noteikumi par valsts..., 2014; Pridāne, 2009).

Besides that the subject Home Economics and Technologies as a part of the Standard of Elementary Education is included in the branch of "Personality and Society" the goal of which is to arise the student's independence and responsibility to him-/herself, his/her family, other people and his/her nation. The development of a personality and social responsibility, interaction with nature, social and culture environment of an individual is promoted. Also the understanding about the meaning of crafts in a wider social and cultural context is being built through emphasizing the historical and traditional aspects. In the lessons of Home Economics and Technologies students learn to respect everyday life norms and values, to act as responsible consumers (Pridāne, 2009).

Issues of modern curriculum and methodology were actualized also in the project "Further Education of General Education Teachers", realised by Latvia Ministry of Education State Examination Centre. It included also preparation of teachers' further education programme "Improvement of Home Economics and Technologies, House Keeping Teachers' Professional Competences". Handouts to teachers were worked out and aprobated, methodology for providing innovative and creative process of learning by using IT and modern handicraft technologies were offered to the teachers. (Pridāne, 2012).

Exploration of the curriculum in depth was conducted from the year 2000 to 2009 in author's doctoral thesis (Pridāne, 2009).

The existing curriculum was analyzed and suggestions for modern education curriculum and methodology that are appropriate to the needs of students, were prepared. Students should be motivated to recognise and to analyze their needs and the hierarchy of them, to choose subjectively and socially acceptable ways of satisfying their needs. M. Thiele-Witting (2003) observes the needs of satisfying existence and sustaining of a personality.

Criteria and indicators of life quality include the social life and culture aspects of a personality as well as the higher mental values which simultaneously are the promoters of the development of a personality. In the result, the student is able to build a specific strategy of reaching his/her goals of life. It manifested in a student's capacity-adequate, purposeful activities, where students use their full potential and given possibilities (Pridāne, 2009; Mūžizglītības galvenās..., 2007). It is therefore necessary to develop competences.

The aim of the research is to evaluate and analyze which key competences, defined by European Council, can be developed in the curriculum of the subject Home Economics and Technologies.

Methodology

The study was performed in two directions.

At first in order to implement the principle of the quality of life, thesis was prepared and approved at the author's programme. The implementation of it takes place by using multiple methods and giving the possibility to students to develop several core competences which are defined by European Council.

On the base of the acquired knowledge in the theoretical studies the used content of the subject Home Economics and Technologies and the methodology was assessed.

Key competencies characteristics defined by European Parliament are given in the Table 1. (knowledge, skills, attitudes) (Mūžizglītības galvenās..., 2007) and examples, how they are developed in Home Economics and Technologies lessons.

By author's opinion the most developed key competences are: social competences, IT and other technology competences, but less used are: business, mathematical and science competences in education of Home Economics.

Table 1

**Key Competences to be Developed and Examles of their Implementation in the School Subject
“Home Economics and Technologies” (Eiropas pamatprincipu..., 2007)**

Key competences	Knowledge	Skills	Attitudes	Examples of development of the competences in Home Economics and Technoloioes lessons
Communi- cation in foreign languages	Social knowledge, cultural aspects, knowledge about the use of language.	Ability to understand the text, communicate, read, understand, build texts according to the individual's needs. Ability to use the necessary additional materials.	Interest and curiosity in languages and intercultural communication	Information extraction and selection for working out project works on topics: food, housing, clothing. Handicraft technology acquisition through Internet programs Youtube and other videos.
Mathe- matical competence	Knowledge of the units of measu- rement and shape. Understanding of the basic tasks, terms and the concept of their use in Mathematics. Understanding of the questions to which answers can be offered in Mathematics.	Ability to apply mathematical principles and techniques in calculating both in real life and work. The ability to substantiate mathematically, provide evidence.	A positive attitude towards mathematics- based truths. The desire to look for reasons and to assess their validity.	Dress patterns design. Nutritional norms, product costs, housing costs, the quantity of materials and other calculations. Housing plan drawing, scale fixation.
Core compe- tencies in science and techno- logies	Knowledge of the basic principles of the natural world, technological products and processes, their impact on the world. Risk awareness in society at large (in relation to decision- making, values, moral cultural issues)	The ability to use and manage technology tools and devices that use scientific data to prove or achieve objectives and to draw evidence-based conclusions, to be able to discuss, justify conclusions.	Respect for security and sustainable de- velopment in the context of scientific and technological progress. Curiosity, criti- cal attitude towards personal life, family, commu- nity and global issues. Respecting and observing of ethical norms.	Impact of household activities on the environment, household waste. Effective and wise use of residential resources. Use of household chemicals and electrical devices. Devices in learning handicraft technologies.
Digital competence	The use of the main computer programmes. Knowledge about the information storage and	The ability to search for, to collect, process and to apply the information critically and systematically. To evaluate the role	Respect for security and sustainable development in the context of scientific and	Use of “Excel” for technical patterns, diagrams, mathematical calculations. Use of computer programmes “PowerPoint”, “Prezi”

Key competences	Knowledge	Skills	Attitudes	Examples of development of the competences in Home Economics and Technologies lessons
	<p>management. Understanding of Internet opportunities and potential risks of the information available, the validity and veracity of it, legal and ethical principles.</p> <p>Understanding how IST can support creativity and innovation.</p>	<p>of information, to distinguish the real from the virtual and be aware of the links. Ability to use tools to create, present and understand complex information access, search and apply online services. Ability to use ICT tools for critical thinking, creativity and innovation.</p>	<p>technological progress. Curiosity, critical attitude towards personal life, family, community and global issues. Respecting and observing of ethical norms.</p>	<p>for making presentations. “Smart Draw” and similar programs for drawing housing plans. Use of different programmes for obtaining information.</p>
Social competences	<p>Understanding the social and personal well-being, optimal physical and mental health provision, including own resources and their own family and their direct social environment.</p> <p>Knowledge of a healthy lifestyle and its promotion. Understanding the behavior and generally accepted code of behavior in different societies and environments.</p> <p>Understanding of individuals, groups, work organizations, gender equality.</p>	<p>The ability to communicate constructively in different environments, to be tolerant, express and understand different viewpoints, to feel empathy. Skills to cope with stress and frustration, to distinguish between personal and professional spheres.</p>	<p>Critical, weighed attitude towards the available information. Responsible use of the interactive media. Interest in contributing to communities and networks for cultural, social and / or professional purposes.</p>	<p>Healthy diet and lifestyle. Organization of work and security in the dwelling.</p> <p>Personal image development (clothing and behavior rules).</p> <p>Table cultural issues.</p> <p>Household disposable financial and other resources, the prudent and efficient use.</p> <p>Healthy diet, lifestyle. Organization and security in the dwelling.</p> <p>Personal image development (clothing and behavior rules).</p> <p>Table culture issues.</p> <p>Household financial and other resources, reasonable and efficient use of them.</p>
Sense of initiative and entrepreneurship	<p>Awareness of students’ own personal, professional and / or business activity opportunities.</p> <p>Understanding the economy and fair trade principles.</p>	<p>Ability to plan, organize, delegate, analyze, communicate, manage, take up the leadership. The ability to obtain and evaluate information. Ability to work both individually and in a team. The ability to judge and identify students’ own strengths and</p>	<p>Initiative, activity, independence and innovation in personal and community life activities. Motivation and determination to achieve goals (personal,</p>	<p>Learning handicraft, cooking technology as a resource for the individual business.</p> <p>Home economics profession to be acquired in the context of diversity (career opportunities).</p> <p>Consumer education issues, shopping.</p>

Key competences	Knowledge	Skills	Attitudes	Examples of development of the competences in Home Economics and Technologies lessons
		weaknesses, assess and take risks when necessary.	collective, work).	
Cultural awareness and expression	<p>Understanding the importance of local, national and European cultural heritage, their place in the world, the necessity to keep it.</p> <p>Understanding the importance of aesthetic factors in daily life.</p> <p>Understanding European public, multi-cultural and socio-economic dimensions of the national cultural identity and interaction.</p>	<p>Individual's innate capacities,</p> <p>Self - expression and evaluation. The ability to relate one's own creative and expressive points of views to the opinions of others, to identify and realize social and economic opportunities in cultural activity. The ability to develop creative skills for application of them in individual and professional context.</p>	<p>Students' own cultural awareness and sense of identity. Respect for the diversity of cultural expressions. Participation in cultural life.</p> <p>Creativity and willingness to cultivate aesthetic capacity. Awareness of the meaning of artistic expression.</p>	<p>Handicraft technology acquisition and use (from the idea to the realization of the object, the manufactured product quality evaluation).</p> <p>Housing interior.</p> <p>Positive personal image creation capabilities and role in society.</p> <p>Latvians and other nations', living in Latvia traditions, national meals - common and different.</p> <p>Positive personal image creation capabilities and role in society.</p> <p>Latvians and other nations' living in Latvia, traditions, national meals - common and different.</p>

In the second part of the study was organized a survey. 25 girls who were the 9th form students at Jelgava Secondary School N 4 and had acquired the content of the Home Economics and Technologies syllabus were involved in the research using the programme elaborated by the author of this article.

As the most appropriate to this study one of the most widely used discrete scales- Likert scale was selected (Kristapone, 2014, 213). It is easy to be prepared and well understood by students. The level of the above mentioned competence development was tested with the help of questionnaires. It contained 19 questions. The students were supposed to evaluate them on the 5 point scale (1 point -strongly disagree, 2 point- disagree, 3 point- partly agree, 4 point- agree, 5 point - completely agree).

The research data were used for processing the central trend indicators: median (Me) - The average result row of numbers in which all sets of elements arranged in ascending order and mode (Mo) - the most common sets of element value (Raševska, Kristapone, 2000, 67). In order to obtain as precise information on the set mode it has to be studied simultaneously with the arithmetic mean and the median.

Results and discussion

Table 2 shows the results of the survey. The results confirmed (Table 2) that in Home Economics education the key competences are the most developed now:

- 1) technology and digital competences: different sources of information have to be used in the learning tasks (Question 4), a variety of handicraft technology competences (Question 9) (Me-4, Mo- 4);

- 2) social and cultural awareness and expression competences: learning content related to real life (Question 1), knowledge and skills acquired in other subjects are used in lessons, schoolgirls know where they will be able to use the acquired knowledge and skills in lessons after graduation, teaching the content of the notion of Latvian folk culture, traditions; different handicraft technology skills are acquired (Question 9) (Me-4, Mo-4).

Table 2

Indicators of the Central Trend of the Student Girls' Survey Results (Me, Mo)

N	Question	Me Me	Mode Mo
1.	Curriculum is related to my real life.	4	4
2.	I use the acquired knowledge and skills in my everyday life and at home.	3	3
3.	I use the knowledge and skills acquired in other subjects (Computer Science, Foreign Languages, Maths, History, Visual Art) during the lessons.	3	4
4.	For completing the course tasks I have to use different sources of information (online resources, books, magazines).	4	4
5.	For completing the course tasks I have to use foreign languages.	2	1
6.	For completing the course tasks I have to use IT.	3	3
7.	Course tasks make me solve different problems that are related to the real life situations.	3	3
8.	Course curriculum forms my understanding of Latvian culture and traditions.	4	4
9.	In the lessons I can try different techniques of handicraft technologies.	4	5
10.	I use the learned handicraft techniques also at my free time. This gives me the opportunity to express myself creatively.	2	2
11.	The curriculum makes me to cooperate with my classmates in solving learning tasks.	3	2 and 3
12.	Learning tasks make me to search the information independently and do projects.	3	3
13.	The learning tasks seem to be interesting and useful.	3	3
14.	I know where I can use the knowledge and skills acquired after finishing the school.	3	4
15.	Curriculum has aroused my interest to my further profession.	1	1
16.	Curriculum builds my understanding of healthy lifestyle.	3	3
17.	Curriculum makes my understanding of my home environment improvement.	3	3
18.	I share the acquired knowledge and skills in lessons with my family members.	2	2
19.	Curriculum taught me how to save material, financial and other resources.	3	2

Replies with the central trend indicator (Me-3, Mo-3) points, that is partly developed in the basic skills in mathematics and science (2, 3, 6, 7., 12, 13, 16, 17th issue).

Unfortunately, girls do not see that the home economics education knowledge and skills could be used in their professional career (Question 15). They also recognize that foreign languages are not applied in learning tasks-(Question 5). 9. Although it was recognized that different handicraft technologies can be learned in lessons, they are not used at free time activities as a way of creative self-expression outside the classroom.

Conclusion

Education reform is aimed at encouraging students' interest in knowledge and lifelong learning. The changes will affect the educational content, the school environment, teaching approach and evaluation. It will also change the teacher's role in the context of competence development.

The key competences are already being implemented as study subjects in Latvia: language competence; socio-civic; cultural awareness, artistic; mathematics and computer science; science and engineering; health and physical activities.

Learning content developed in the competence approach will focus on ensuring that the knowledge learned by students in class, can be used in different situations: both in learning situations and in other subjects, as well as in real life. This setting is one of the main conditions for Home Economics education, where the learning content is aimed at building students' own quality of life awareness, as well as in gaining practical experience in handicraft, cooking and other technologies.

The study analyzed which key competences defined by European Council of are expanding in the context acquisition the content of subject Home Economics and Technologies.

The results confirmed then:

- 1) the most developed competences are:
 - technology and digital competences;
 - social, cultural awareness and creativity expression competences;
- 2) mathematical and natural science key competences are partially developed.

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