Innovations in the Improved Curriculum Content of the Competence Approach: a Case Study in Latvia

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Abstract: Innovations in education are particularly important as education plays a crucial role in developing sustainable future. Innovation resembles mutation, the biological process that keeps species evolving so that they can compete better for survival. Innovations should therefore be considered as a necessary and positive tool of changes. Any human action (e.g., industrial, business or educational) requires constant innovation to be sustainable. Education is foundation of our economy. What (and how) we learn at school determines success throughout our lives. It affects how we solve problems, how we interact with others and how we look at the world around us. Education in the world of modern innovation economics becomes even more important to develop the future generation of innovators and creative thinkers. The purpose of the article is to theoretically analyse innovations related to significant changes in the competency – based teaching/learning content. The study, through document analysis, has selected the most substantial changes in the improved teaching/learning content of the basic education curriculum. The primary education content has been chosen because this stage of education lays foundations for the life and personal growth of every young person. Three domains of the education content have been selected for the analysis, namely Languages, Science and Civic domain. Innovations have been defined according to four criteria – promotion of cooperation in the acquisition of the curriculum content, the usage of information and communication technologies as a platform for developing reasoning and solving problem, experiential learning, which focuses on the process of discovery, and discussion-based learning, that positions knowledge in a political and cultural context. It has been stated that the curriculum content improved within the competence approach includes a number of innovations, among which the cooperation of teachers in planning the curriculum content and the selection of strategies, the use of information and communication technologies for developing judgment, the learning not only from the personal experience but also purposeful formation of learners' experience should be specifically mentioned.

Keywords: innovation, improved curriculum content, competence approach.

Introduction

The top priority of the European education policy makers is to ensure that every child attains his/her potential. In order to achieve this goal, the education systems should become more flexible and dynamic supporting the learning and teaching innovative approach to enable schools and their systems to follow the rapid social and economic transformations and to introduce a high-quality education as reality for everyone (Study on supporting…, 2018). The requirement of innovations in education has become especially important. Social and economic wellbeing of countries get increasingly dependent on quality of education of their citizens, the development of the knowledge society, the transformation of sources of information and media, and the ever-increasing specialization requires a high level of skills and knowledge, and competences (Cornali, 2012).

The understanding of the term "innovation" is very diverse. Innovation is usually understood as "the *successful* introduction of a new thing or method" (Brewer, Tierney, 2012, 15). Actually, "innovation seems to have two subcomponents. First, there is the idea or item which is novel to a particular individual or group and, second, there is the change which results from the adoption of the object or idea" (Evans, Leppmann, 1970, 16). The study performed by the DG of Entrepreneurship and industry of the European Commission "Innovation Management and the Knowledge-Driven Economy" offers the following definition for the term "innovation": Innovation is a successful production, inclusion and implementation of a novelty in the economic or social field. Innovation covers actions related to practical application of knowledge and implementation of skills in order to produce better products and more full-fledged services (European Commission, 2004). Thus, innovation needs three main steps: the idea, its implementation and a result which emerges as the outcome of implementing the idea and causes changes (Serdyukov, 2017).

Innovations in education can appear as a new pedagogical theory, methodological approach, a teaching/learning strategy, a study aid, a teaching/learning process or institutional structure which, being implemented, brings about essential changes in teaching and learning to promote better learning in general. Thus, innovations in education are envisaged to increase the efficiency of teaching/learning and the effectiveness, and/or to improve the quality of teaching/learning, to increase the learners' competence. However, innovation in the classroom isn't fostered by feeding teachers with techniques (Paniagus, 2018). Curriculum innovation may take many forms, determined by many different factors and special interests (Williamson, Payton, 2009; Katane, Laizāne, 2012).

New technologies and transformation of society have a noticeable impact on innovations in education. Analysing modern innovations, we can conclude that an overwhelming majority of them is tangible – they are either technological tools (laptops, iPad, smart phones) or they are technology-supported teaching/learning systems and materials, e.g., teaching/learning management systems (e-class), education software and network resources. Technologies have always been both the driving force of innovations and the tool in any sphere of human activity (Serdyukov, 2017). The introduction of technologies in the pedagogical work, if it is not the aim of itself but the means of personality development, also becomes the innovation if the implementing of technologies is gradual, planned and follows a particular aim and serves the development of the learners' independence (Šteinberga, 2018). Then it is natural to expect that innovations, based on the IT application can improve teaching and learning:

- technologies allow delivering lessons faster and more effectively in the classroom and learning at home;
- technologies reduce the need for textbooks and other printed works, decreasing the expenses of schools and learners in long term;
- technologies make the cooperation easier. Learners, teachers and parents can communicate and cooperate more effectively;
- technologies help to form the technology-based skills promoting pupils' independent learning, and the use of different new IT tools.

Although technologies have a great advantage, they are not the only or the chief source of modern innovations (Cuban, 2015). All innovations after all are directed towards the change of qualitative and/or quantitative factors of learning outcomes (Serdyukov, 2017):

- qualitative factors: better knowledge, more effective skills, important competences, character development, values, disposition, effective placement of work and work outcomes;
- quantitative factors: improved teaching/learning parameters, e.g., test results, scope of the acquired information, quantity of developed skills or competences, number of learners enrolled in the college, measured performance of learners, retention, the level of graduation, number of learners in the class, expenses and time efficiency.

Definite features allow recognizing innovations in the teaching/learning content and methods. They are: blended learning, where a classroom is seen as a place to apply the content and deepen one-to-one interactions whether with a teacher or through peers collaboration; a gamification, which is an engagement through play and pedagogies of games; a computational thinking, which addresses mathematics as a coding language and looks at information and communication technology as a platform for developing a problem-solving reasoning in students; experiential learning, which focuses on the process of discovery; embodied learning, which focuses on the non-mental factors involved in learning and that signals the importance of the body and feelings; and multiliteracies and discussion-based teaching, which situates knowledge in the political and cultural context (Paniagus, 2018).

The topical issue today in Latvia is the introduction of the new curriculum content based on the competence approach in all stages of education. The aim of the improved curriculum content and approach is to foster a competent pupil, who wants and is able to learn all his/her life, who is able to solve challenges of a real life, to create innovations, to develop different personal qualities that help to become a happy and responsible personality (Skola 2030, 2019). Globalization, the development of information technologies and diversity of values characterise the world nowadays thus, the human activity in the most diverse areas expands and becomes more unpredictable. Pupils have to learn to live in the world that undergoes constant changes and should be ready for unpredictable circuit of economic, political, social and cultural environment

in the future. The idea of the new content is simple and at the same time complex and innovative. Pupils themselves seek and analyse information, the right answers no longer can be found only in the textbooks. It requires more active involvement in each lesson so that pupils' competences, skills to apply knowledge in diverse situations get developed. An innovation in the competence approach is the fact that while preserving the fundamental knowledge, understanding and key skills in the diverse fields of human actions, the curriculum content is supplemented with transversal skills and habits that are value-based so that the pupil would learn to learn all lifelong and would act in his/her everyday life in accordance with personal values. Such skills as critical thinking and problem solving, innovation and entrepreneurship, cooperation, civic participation, digital skills permeate through the whole curriculum content. The focus is laid on responsibility, diligence, courage, honesty, wisdom, sincerity, empathy, temperance, self-possession, solidarity, fairness and tolerance as the most important values and virtues (Skola 2030, 2019).

The aim of the article is to analyse innovations in the intrinsic changes in the improved curriculum content that has been developed in the competence approach aspect.

Methodology

The study, using the document analysis, has selected the intrinsic changes in the improved curriculum content of basic education in the competence approach. The basic education content has been chosen because this stage of education lays foundations for the life and personal growth of every young person (Skola 2030, 2019). Three domains of the curriculum content have been selected for the analysis, namely, Languages, Science and Civic domain. Innovations have been defined according to four criteria – the promotion of cooperation in the acquisition of the teaching/learning content, the use of information and communication technologies (ICT) as a platform for developing reasoning and problem solving, experiential learning, which focuses on the process of discovery, and discussion-based teaching, which situates knowledge in the political and cultural context.

Results and Discussion

The improvement of the curriculum content and approach in Latvia takes place in order to develop pupils' competence in areas significant for human action, reducing fragmentation and homogeneity in curriculum content; and promoting consistency and integrity. Languages, Sciences and Social and Civic domains are very important in the curriculum content in the education of each pupil as they are most directly related to the formation of values and virtues, the development of relationships and attitudes towards the surrounding social and physical environment. The knowledge and competences acquired in these areas of the curriculum content are important for any further path of the professional career.

The most important emphasis is the need for cooperation between teachers of different subjects in the implementation of the improved curriculum and innovation in the analysed domains. The teacher in the new curriculum content is the leader of the acquisition process who not only gives knowledge but leads pupils to obtain the answers instead of giving them. Equally important is the teachers' mutual cooperation and joint planning of the work. Through cooperation teachers improve the curriculum of the subjects, teaching goals, share the experiences, and support each other in developing their own competences and elaborating innovative strategies for developing pupils' competences (Anspoka, Kazaka, 2019). Only the Social and civic domain places emphasis not only inn teachers' cooperation but also on promoting pupils' cooperation. The current practice, indeed, paid less attention to the teachers' cooperation because the main focus has been on promoting the pupils' cooperation (Table 1). Analysing the application of information and communication technologies (ICT) as a background of developing reasoning and problem solution, we can conclude that the Language domain accomplishes the analysis of diverse texts, including, texts of social networks in order to make judgments. Social and Civic domain provides a critical analysis of historical and information sources in order to form judgment, to develop thinking strategies. Here we can understand that information sources are the ones that can be found with the help of ICT, however, there is no direct indication. It is even less directly indicated in the Science domain, in terms of the development of engineer-technical thinking and transferring of the science regularities. Thus, this innovation can be linked more to Linguistic, Social and Civic domains which are mainly intended to use ICT in the formation of pupils' judgment, reasoning and problem solving than in Science domain (Table 1).

Table 1

Innovations in the improved curriculum content in the competence approach

Innovation Domain of the curriculum content	Promotion of cooperation in the acquisition of the content	The use of information and communication technologies as a platform for developing problem solving and reasoning	Experiential learning, which focuses on the process of discovery	Discussion-based teaching, which situates knowledge in the political and cultural context
Language domain	According to the improved approach about the acquisition of the language one should think interdisciplinary, which means **a greater cooperation of teachers** in the frame of their teaching/learning domain and with the teachers of other domains.	The emphasis is put on the diversity of texts (advertisements, product names, documents, maps, diagrams, charts, etc.), including texts in **social networks**. On purposeful work to develop text literacy, the skill to understand faster and deeper the main idea and purpose of the text.	Great importance is given to that stage of the teaching/learning process when pupils **gain new knowledge and new experience– listening, reading and observing**. The more pupils will hear, read and notice (at school, on the street, in the theatre, museum, industrial enterprise, etc.), the more content-rich and diverse will be his/her created written and oral text.	The pupil develops the sense of language and thinking (reading, listening, observing, analysing information, training the perception and forming the attitude), creativity and **the skill to express in words in writing and speaking**, to create a text as well as the digital skill.
Science domain	It is important that **teachers** of different subjects **cooperate** to develop a common learning conception in the science domain and, e.g., agree on how they will teach terms that are common to several subjects and how the transfer of knowledge from one subject to another will be facilitated.	Enhanced emphasis on **engineer technical thinking and the transfer of science regularities** in order to get acquainted with the engineer-technical solutions.	The direction started in previous years in improving the teaching/learning approach in the science field continues, emphasizing the **development of pupil's inquiry skills** and the formation of profound understanding through practical activities, experimenting, modelling and seeking regularities.	Analyses and evaluates the data, **expresses personal opinion and arguments in different ways** and draws conclusions from the data.
Social and civic domain	It is important to **develop cooperation and participation skills**, thus developing stable social habits and orienting on the result that requires everyone's participation.	It is important both in history and social science to develop concrete skills and thinking strategies important for history science: **critique of history and information sources**; **analysis of history and information sources**; defining causal relations; the skill to provide arguments, chronological thinking.	It is important to offer each pupil the **teaching/learning process in different environments** – surrounding nature, cultural environment, museums and local municipality provides the possibility to **get immediate experience from primary sources**.	It is important both in history and social science to develop concrete skills and thinking strategies important for history science: critique of history and information-tion sources; analysis of history and information-tion sources; defining causal relations; **the skill to provide arguments, chronological thinking.**

The use of information and communication technologies in forming judgment, in reason is related to the development of media literacy. Media literacy is developed in the whole new basic education curriculum. Media literacy is understood as the ability to access, analyse, evaluate and communicate messages in a variety

of forms as well as the ability of individuals to access and understand information through different means, such as television, radio, print media, the Internet and digital technology (Andersone, Helmane, 2019).

The School 2030 website, where is provided developed curriculum based on competency approach, points out to innovative support for introducing new content. It is being prepared the digital teaching / learning resource repository; it will include examples of subjects' curricula, free teaching / learning aids developed by the project and available to students, methodological materials, examples of colleagues' tutoring that could stimulate the exchange of ideas and experiences (Skola 2030, 2019). However, it cannot replace student behaviour with ICT as a basis for reasoning and problem solving.

Experiential learning, which focuses on the process of discovery, means learning from experience or learning by doing. Experiential learning first immerses learners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking (Lewis, Williams, 1994). Experiential learning is envisaged in the Language domain as the acquisition of pupils' knowledge and new experience by listening, reading and observing. The developers of the new content indicate that the more pupils will hear, read and discover at school, on the street, in the theatre, museum, industrial enterprise and other places, the richer and more diverse will be their learning experience (Skola 2030, 2019). Experiential learning in Science domain focuses on the process of discovery and is connected with the development of pupils' inquiry skills, which are developed through practical activities, experimenting, modelling and searching for regularities. Pupils in the Social and civic domain are encouraged to get an immediate experience from the sources, organizing the teaching/learning process in different environments – the surrounding nature, cultural environment, museums, local municipality, etc. (Table 1).

Discussion-based learning, which situates knowledge in the cultural context, is an innovation in the implementation of the new curriculum content. The construction of knowledge is group work in which the participants share, use, improve, discuss and criticise the knowledge (Stahl, Hesse, 2009). It can be observed in the Language domain when pupils through discussions develop their skill to express themselves in written and oral form, in Science domain when pupils learn to express their opinion and provide arguments in different ways, in Social and civic domain when pupils learn to identify the causal relations, to develop the skill of argumentation and chronological thinking (Table 1). The expected learning outcomes in the Science domain point out that pupils participate in discussions and other activities that leads to making socially responsible decisions and their decision-making is based on scientific ideas, values, economic considerations and the needs of the humankind (Skola 2030, 2019). Thus, the cultural context is emphasized.

Conclusions

Globalisation, the development of information technologies and the diversity of values depicts the world of today, thus the human action in the most diverse spheres expands and becomes unpredictable. Contemporary pupils have to learn to live in the world that is constantly changing, in which innovations are intrinsically important. Therefore, any changes in the content of education and school practice should be assessed from the point of view of their innovative character.

The improved curriculum content developed in the competence approach in the three most important domains of the curriculum content – Language domain, Science domain and Social and Civic domain – comprises several important innovations.

Innovations that have been most vividly expressed in the Language domain are the following: teachers' active cooperation in promoting the acquisition of the curriculum content, its mutual coordination; the selection of the teaching\learning strategies; the use of ICT as a platform for developing reasoning and problem solving; the analysis of diverse texts, including the texts in social networks; experimental learning as the acquisition of knowledge and new experience by listening, reading and observing in the most varied environments and situations at school, on the street, in the theatre, museum, industrial enterprise, etc.; discussion-based learning, which situates knowledge in the cultural context, when pupils develop their skill to express themselves orally or in writing in the discussions.

Innovations in the Science domain are expressed as teachers' mutual cooperation and common planning of work with teachers from other domains; experimental learning, which focuses on the process of discovery, is connected with the development of pupils' inquiry skills, that are developed through

practical activities, experimenting, modelling and searching for regularities; discussion-based learning, which situates knowledge in the cultural context as the pupils' involvement in discussions and other activities for making socially responsible decisions. Besides, the decision making is based on scientific ideas, values, economic considerations and the needs of the humankind. Innovation in the Science domain is also the emphasis on developing the engineer-technical thinking and the transfer of science regularities.

Innovations in the Social and civic domain are seen in teachers' mutual cooperation and common planning of the curriculum content and promoting of pupils' diverse cooperation in the teaching/learning process; the use of ICT as a platform for developing reasoning and problem solving, as critical analysis of information sources in order to develop reasoning and thinking strategies; experiential learning, which focuses on the process of discovery, where pupils get immediate experience from the primary sources, organizing the teaching/learning process in different environments – the surrounding nature, cultural environment, museums, local municipality, etc.; discussion-based learning, which situates knowledge in the cultural context, takes place when pupils learn to identify causal relations, develop their skill to provide arguments and develop their chronological thinking.

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