Business, Management and Education
ISSN 2029-7491 / eISSN 2029-6169
2020 Volume 18 Issue 2: 294–306
https://doi.org/10.3846/bme.2020.12631

TEACHER TRAINING AND EDUCATION PROGRAMS IN LATVIA: ARE E-COMPETENCES INCLUDED?

Kristine UZULE *

Faculty of Management and Economics, Transport and Telecommunication Institute, Rīga, Latvia

Received 03 May 2020; accepted 18 May 2020

Abstract. *Purpose* – the purpose of this research is to review the contents of Latvian teacher training and education programs in order to identify if the development of students' e-competences is included into these programs as an important objective and value. The importance of the development of these competences has been stressed in various EU documents and scientific literature. The scientific importance of the paper lies in gathering evidence for the inclusion of e-competences into teacher training and education curricula and demonstrating that e-competences have not yet acquired a value status in teacher training and education programs.

Research methodology – the methodology included the keyword in context and concordance analysis of self-assessment reports and program descriptions, which were run in the software *AntConc*.

Findings – out of 190,000 word tokens, the KWIC analysis identified only 75 entries related to e-competences, most of which included basic skills of information and communication technologies. Other more advanced concepts, such as virtual reality, artificial intelligence, adaptive spaces, e-competences, e-education and e-learning, were hardly mentioned.

Research limitations – one limitation of this research is the focus on Latvian teacher training and education programs without their comparison to similar European programs, which would allow for determining the competitiveness of such Latvian programs in Europe.

Practical implications – the obtained results suggest that the development of e-competences has not been perceived as value in teacher training and education programs in Latvia, and in order to bridge this gap, programming and artificial intelligence courses should be introduced into the curricula of such programs.

Originality/Value – the research has demonstrated that the EU aim of boosting the competitiveness of the European education through the development of e-competences is yet to be implemented into teacher training and education programs in Latvia.

Keywords: e-competences, e-education, e-learning, education programs.

JEL Classification: I21, I23.

*Corresponding author. E-mail: *uzule.k@tsi.lv*

Introduction

Much of human life, including education and business activities, has moved to e-platforms and the recent Covid-19 crisis has proven it with many countries in the world having fully moved to e-learning both in school and higher education teaching. Such an education mode requires a particular set of competences not only from students but also from teachers, as the e-learning environment, be it the main or complementary mode of education, is characterized by its unique features and principles of operation pertaining to more advanced digital skills and the knowledge of the rudiments of computer-human interaction, which both constrain and expand teacher opportunities to conduct teaching effectively.

The efficiency of teaching in e-education is associated, at least in part, with the teacher's knowledge of e-learning and e-education components as well as teacher's abilities to be productive and creative in such environment. Creativity is certainly one of the higher-level competences, which emerge as a result of the mastery of skills across a variety of contexts, including new ones. Therefore, e-competences might be defined as advanced skills allowing to freely use and interact with computer technologies. There might be a problem with the development of such skills without proper training particularly for students who do not specialize in computer technologies. In fact, there is a well-known phenomenon called the computer anxiety, which refers to the increased anxiety levels, which surfaces as negative thoughts, distractibility, avoidance and even physiological features of the changed heart rate, higher blood pressure when completing tasks on computers (Matsumura & Hann, 2004). For example, Matsumura and Hann (2004) determined the effect of computer anxiety on writing skills of Japanese students in their English writing classes. To be able to better understand emotional aspects of human interaction with computers, which certainly affects cognitive performance, there has even emerged a field of affective computing (Wang et al., 2015). The findings of affective computing have been used to design e-learning curricula and adaptive learning spaces (Wang et al., 2015). Thus, the computer-human interaction process is complex and to make it more productive, students should receive sufficient and regular training because more individual experience with computers has been found to decrease computer anxiety (Eryilmaz & Cigdemoglu, 2018).

Since the purpose of education is to develop students' knowledge and skills, it is logical to assume that higher education programs should be able to develop computer skills sufficient for productive professional activities not only on the current market but also on the future markets. This is the foundation of lifelong learning. Therefore, contemporary higher education programs might be expected to provide such training even in programs that do not focus on computer technologies, for example, in teacher training and education programs. For this reason, it is essential to determine if contemporary teacher training and education programs provide computer technology training sufficient for the development of e-competences essential for current and future professional activities. The aim of this research, therefore, is to review the description of teacher training and education programs in order to identify if aspects of competences related to more advanced computer technologies are included in program curricula. The country of investigation is Latvia because Latvia, as a small nation with limited natural and financial resources, needs to focus on the development of human capital perhaps even more than other nations, which do not have such limitations. Obviously,

human capital can be developed in many ways, however, one of the most affordable ways to boost competitiveness of human capital on the current market and in the foreseeable future is to develop digital skills of a broad spectrum of professionals. Their knowledge of computer systems and operations should be comparable to that of administrators of computer systems and possibly basic-level programmers. The outcomes of this review are research-based recommendations on integrating more advanced computer skills into the curricula of Latvian teacher training and education programs.

As any research, this one has limitations. One limitation is the lack of comparison of descriptions of Latvian teacher training and education programs with similar European higher education programs. Such a study would help to account for the current level of integration of computer technology skills into local curricula and would indicate whether Latvian programs are in need of urgent transformation in order to be abreast of European programs or whether they still have time to prepare for future higher education initiatives which will require more advanced computer skills as a result of continuous evolution of computer technologies.

1. Literature review: e-learning, e-education and e-competences in contemporary education

There are various terms pertaining to learning and education conducted via electronic platforms, also referred to as e-platforms. The two most frequently used terms are e-learning and e-education. Although e-learning might have various definitions, emphasizing various aspects of the phenomenon, the broad definition postulates that e-learning represents "the integration of technology and education" (Al-Fraihat et al., 2020, p. 67). As for e-education, it can be defined as education incorporating the concepts of e-learning, mobile learning, flexible learning, blended learning or virtual learning (Jung & Latchem, 2011). Both terms will be used in this paper.

Considering the current and future development of economies, e-learning and e-education should be integrated at more advanced levels into higher education curricula because technologies have permeated human activities. Therefore, it should not come as a surprise that e-learning has been integrated into the strategies of development of national education programs both at macro- and micro-levels. Thus, with pertinence to the macro-level, in 2000 the European Commission designed the initiative "eLearning: Designing Tomorrow's Education" and in 2001 "eLearning Action Plan". Both documents emphasized the importance of developing e-learning as one of the key components of competitiveness of European education (Coulon et al., 2004). In 2004 in the report "E-Learning for Teachers and Trainers", commissioned by the European Center for the Development of Vocational Training, Coulon et al. (2004) indicated the necessity to develop e-learning competences in teachers. More recently, in 2018, the Council of the European Union published "Recommendations on Lifelong Learning", which identified digital skills as a key priority in education competences.

As for micro-levels, the implementation of e-learning on the market, both in businesses and educational settings, has been underway for many years now. Schweizer (2004), Moreno-Ger et al. (2008) and Carril et al. (2013) confirm the rapid growth of e-learning in business

contexts, which, according to Schweizer (2004), is fueled by shorter business cycles, faster reorganizations at companies and the need to quickly and more elastically transform business operations in order to sustain competitiveness on the market, which is partly linked to the development of new skills of employees. These new skills are more advanced computer skills, which many European businesses lack in their employees (Fonstad & Lanvin, 2009). To be able to deliver e-learning in business settings and for employees to be productive receivers of e-learning, both instructors and employees should have some e-skills and e-competences, in other words, skills that ensure productive teaching and learning in e-environments. Such skills are important not only for specific enterprises but for the overall national competitiveness on the global scale (Moranska, 2016).

As for educational settings, e-learning and e-education have become an integral part of education (Al-Frahait et al., 2020). E-learning and e-education represent the computer-assisted learning and education. Along with the emergence of new computer technologies, e-learning and e-education continue to transform. In fact, new technologies restructure education to satisfy the needs of economies and societies (Abdykhalykova, 2019). Universities, as training providers, play a crucial role in ensuring that students, who are the workforce of the present and of the future, acquire sufficient computer skills to meet the demands of the digitalization of the workplace (Fonstad & Lanvin, 2009). To be able to develop higher-level skills in students, teachers should have broader and more advanced knowledge of new technologies. Moranska (2016) argues that because teachers develop students' intellectual abilities under the pressure of continuous expansion of computer knowledge, teachers should be fluent in using contemporary computer technologies as professionals, not as mere users.

E-learning and e-education play a crucial role in developing higher education institutions. Namely, e-education offer more opportunities to deliver education to a significantly vaster student population at the reduced costs. E-education offers opportunities to engage not only in lectures but also in case studies by solving problem-solution puzzles and witnessing real time professional practice, for example, a surgery accompanied by explanations (Lau & Bates, 2004). Tavangarian et al. (2004) argue that e-education is suitable even for constructivism approach in education. Consistent with this approach, knowledge is constructed by each individual and therefore learning should be personalized, in other words, should take into account students' individual differences in abilities, interests, aims and prior experience. Ghilay (2018) found out that the model "Comprehensive Technology-Based Learning", which included not only materials available online, but also short-term regular feedback and the long-term forecast of learner difficulties was highly evaluated by students because it satisfied students' personalized needs, offered flexibility in learning and offered various tools for copying with learning difficulties. The platform of this model is created by new computer technologies.

As for Latvia, e-learning has been integrated into higher education programs in a variety of ways. There are distance learning programs offering specific courses and degrees. All university colleges and universities have e-learning platforms, such as Moodle or E-studijas. As for school education, the education portal called "Uzdevumi.lv"[1] is officially used by Latvian

[1] www.uzdevumi.lv

schools to engage students in independent learning. Students review theory, complete assignments and pass tests on this e-platform. The recent initiative of the Latvian National Center for Education called "Skola2030"[2] has emphasized the importance of the development of computer skills in the currently transformed school education of Latvia.

The effectiveness of e-learning is often evaluated at multiple levels, as e-learning embodies the integration of human experience with the capabilities of technologies (Al-Frahait et al., 2020). Carril et al. (2013) argue that one of the key components in e-education is the course design and assessment. Regmi and Jones (2020) argue that the course design in e-learning is complicated because of the need to stimulate self-directed learning in students, which is not an easily attainable objective and controllable action over distance. Hattinger and Eriksson (2020) emphasize the importance of the course contents, in other words, the delivered knowledge, is of great importance and that it should promote collaboration of various domains, for example, such as business and academia. Thus, not only the knowledge of the taught subject, the ability to integrate it with other disciplines but also the knowledge of abilities and limitations of technologies used to deliver the subject constitute the efficiency of the course, which, at least in part, is created by the teacher, who is a course creator and/or administrator. In fact, Lwoga (2014) found that the course satisfaction is linked to the efficiency of the teacher.

Babic (2012), in her review of blended learning in higher education, which is based on integration of traditional classroom teaching with e-teaching, argues that the efficiency of e-education, in other words, its quality, is linked to and can be measured through e-competences of teachers. In the context of e-learning, e-competences might be defined as a specific set of competences allowing for efficient teaching and productive creation and use of resources for teaching purposes in e-environments. So, what elements could such e-competences include?

According to Duh et al. (2012), e-competences include digital skills necessary for conducting e-education and e-learning and which require continuous upgrade due to the continuous evolution of technologies. In this paper, the definition e-competences is expanded to include the above mentioned elements as well as more advanced general computer skills of programming, technical knowledge of rudiments of artificial intelligence, virtual reality and adaptive spaces that are currently embedded or will be embedded into future e-education platforms. E-competences can be referred as competences only when learners have reached the level at which they can use the acquired skills creatively in new professional situations for new professional purposes.

In this paper it is proposed to refer to e-competences in the context of e-learning and e-education as e-aspects of a course that represent additional competences to the very standard ones required of teachers not using or minimally using e-learning opportunities. Carril et al. (2013) have identified both roles and competences of teachers working in e-learning. Many of these roles and competences are traditional, such as the teacher is an instructor, manager, evaluator and researcher of the course and should have in-depth knowledge of the taught subject, assessment methodology etc. However, some of the competences and roles are clearly e-learning-specific (see Table 1).

[2] https://www.skola2030.lv/lv/par-projektu

Table 1. Key teacher roles and competences specific to e-learning and e-education (sources: Regmi & Jones, 2020; Hammad, 2018; Carril et al., 2013; Awouters & Jans, 2009)

Role	Competences
Teacher	– Development of digital resources; – Development of teaching in different modes; – Stimulation of self-directed learning in students in e environments.
Technologist	– Technical knowledge essential for the development of multimedia resources and their adaptation to e-platforms; – Knowledge of new software essential for teaching on e-platforms; – Technical knowledge of operations of e-platforms, e-resources, e-tools; – Information and communication technology (hereinafter referred to as *ICT*) competences; – Knowledge of virtual realities; – Knowledge of adaptive e learning systems; – Knowledge of artificial intelligence.
Personal	– Positive attitudes, dedication to education in the e environment; – Ability to pay attention to nuances in online communication.

On such grounds, the teacher conducting e-learning must have comprehensive knowledge of digital resources, which includes their conceptual creation, their creation on e-platforms, their blending with other e-resources, if required, modification of already existing resources on e-platforms and in other contexts of virtual reality, their administration and assessment. If assessment is conducted by the e-system, teachers should enter a range of answers into it, which in some cases, such as open-ended answers, essays or other types of creative work, might have endless variations as these answers are produced by human thought. In such cases, teachers should be able to teach the software to look for key aspects in the submitted item and train this software to recognize these patterns. Obviously, this might be plausible if machine learning, which is a component of artificial intelligence, is embedded into software. But even if it is not yet present on all e-education platforms today, it will certainly be in the future. To be able to engage in such activities, teachers must have more advanced knowledge computer skills at a deeper level. In fact, this type of knowledge was promoted as one of the key teacher competences within the approach of information and communication technologies (hereinafter referred to as *ICT*) (Awouters & Jans, 2009).

However, in the past the knowledge required for integrating ICT into teaching was not as sophisticated as the knowledge of technologies that might be expected today. In his doctoral dissertation on E-Learning, defended at the University of the West of England in Bristol, Hammad (2018) lists two subtypes of e-learning – technology enhanced learning and web-based learning, which are implemented using more advanced electronic tools, such as the learning management systems, virtual learning environment and adaptive e-learning systems. Obviously, the present and future in computer technologies are associated with artificial intelligence, virtual realities and the Internet of Things, to name just a few areas. The development of e-learning environments that has been observed over the last 20 years clearly indicates that with time the demand for more advanced computer knowledge is going to increase.

Such development is partially stimulated by ongoing commercialization of all aspects of micro- and macro-level economic development. Consistent with Moreno-Ger et al. (2008), the development of e-systems that create and support e-learning is sustained by commercial competition of those creating such e-systems. This competition is often based on the idea of offering more options, which goes hand in hand with the increasing demand for teachers to manage more and more technological options of e-platforms. Furthermore, the idea of e-learning offering more personalized teaching stirs the expectation that teachers will be able to modify their content and design courses on e-platforms so that each individual or small groups of individuals feel their learning needs have been accommodated. Obviously, this requires at least rudimentary programming skills and data analysis skills.

This along with one of the key principles of modern education emphasizing not only the competences applicable at the moment but also the ones that will facilitate lifelong learning, thus, stimulating the acquisition of new knowledge years, if not decades, ahead, makes it clear that more advanced computer skills and potentially the knowledge of data analysis tools might be required today and more likely will be expected in the future. The data analysis knowledge might be expected because it would help teachers to analyse current trends in technologies and education and the individual needs of their students in more structured and scientific ways and because data analysis is conducted using various software, which requires the application of computer skills.

However, do teacher training and education programs, not focusing on computer or engineering or similar areas, have computer and data analysis competences and knowledge, in other words, e-competences, embedded in their programs as the skills that need to be developed in teacher trainees, in particular in their curricula and course descriptions? The aim of this paper is to review current teacher training and education programs in order to determine if these areas have been incorporated into these programs. Thus, the subject of this research is e-competences and their components, such as computer and data analysis knowledge, skills and competences, whereas the object is the course descriptions of teacher training and education programs in Latvia.

2. Methodology of the current research

The chosen research method was document analysis. The selected documents were course descriptions of teacher training and education programs. The teacher training and education programs were taken from the list of the accredited programs available from the Academic Information Centre of Latvia. These programs were accredited under the study direction *Education, Pedagogy and Sports.* This list included only the programs accredited until 2019, which is the limitation of this research (see Table 2). The range of the initial accreditation of these programs under this direction varied from 1998 to 2004, which points to their own history of development and the available time for program modification. Another set of information for document analysis were the most recent self-assessments reports of universities within the given study direction

To conduct document analysis, the keyword and concordance approach was chosen. To analyze course descriptions and self-assessment reports, the *AntConc* software was used,

Table 2. Teacher training programs in Latvia: universities and program names

University, City	Study programs
University of Daugavpils, Daugavpils	– Teacher; – Education; – Career counselor and youth specialist; – Pedagogy.
University of Latvia, Rīga	– Pedagogy (two programs); – Diversity in pedagogical solutions; – Educational sciences; – Preschool education teacher; – Social pedagogue; – Teacher (three programs).
Latvian Academy of Sport Education, Rīga	– Education and sport specialist; – Pedagogy; – Sport sciences (three programs).
Jāzeps Vītols Latvian Academy of Music, Rīga	– General education music teacher; – Teacher of professional music subjects.
Latvia University of Life Sciences and Technologies, Jelgava	– Pedagogy (two programs); – Professional education teacher.
University of Liepāja, Liepāja	– Teacher; – Career consultant; – Pedagogy.
Rezekne Academy of Technology, Rezekne	– Teacher; – Social pedagogue; – Special education teacher; – Pedagogy; – Career consultant; – Special education; – Religious pedagogy; – Pedagogy.

which was applied to the processing of keywords, key phrases and their concordances only with relevance to the development of students' computer skills, data analysis skills and students' skills for work in e-learning environments and other possible environments including e-competences, in other words, the keywords in context analysis (hereinafter referred to as *KWIC*) was used. Other instances of the use of these words were excluded.

This list of keywords and key phrases was compiled based on the digital and e-learning skills necessary for teachers, based on the earlier mentioned research, as well as the recent European e-Competence Framework 3.0 (European Commission, 2014), which, even though was developed for ICT professionals, can apply for teachers, too, perhaps not at the very deep level. At the same time, this list of competences points towards the developments of the markets and possible future expectations of professionals. Obviously, the initial list of competences, associated with ICT for teachers, was excluded as somewhat out-date as the majority of users nowadays are familiar with how to upload, download or merge files, how to use available functions of e-platforms for education, such as Moodle or Blackboard. The resulted list is provided in Table 3.

Table 3. Keywords of e-competences and advanced computer skills (sources: European Commission, 2014; Regmi & Jones, 2020; Hammad, 2018; Carril et al., 2013; Awouters & Jans, 2009)

Skill area	Keywords and key phrases
IT	– Programming (e.g. skills, language); – Software (e.g. administration, development); – Digital (e.g. knowledge, skills, competences, architecture design); – Artificial intelligence; – Virtual reality; – Adaptive spaces; – E-competences; – ICT; – E-learning/distance learning; e-education – Application (e.g. development and management); – Information technology, or computer, component integration.
Data analysis	– Data analysis (e.g. tools, methods); – Data management (e.g. tools, methods); – Information processing.

3. Results of the current research

Overall, the documents analysed in the paper yielded 190,000 word tokens, however, the total KWIC results displayed 75 word items (see Table 4).

On the one hand, the fact that 75 KWIC items were identified in the collected corpus points to that fact that university programs in education and teacher training in Latvia have been designed with the awareness of the importance of the development of computer skills in their students. On the other hand, the overall context of almost 190,000 words suggest that the development of computer skills at deeper levels is not considered to be particularly important in these programs, which means that the development of e-competences is not viewed as an important objective.

Further review of the context of using these word items support this claim. Firstly, no specifics of computer technologies were identified; in other words, the context in which these ideas were mentioned was mostly general, and thus, pointing to quite general knowledge of computer technologies, rather than specialized one, which would point to a more in-depth approach to the acquisition of computer knowledge. One exception, though, might refer to using information technologies for data analysis. Secondly, such key concepts in contemporary computer science as artificial intelligence, virtual realities and adaptive spaces were hardly mentioned, which suggests that computer skills developed within these programs hardly inform students on the structure, application, modification and integration of realities created by these entities, which are not only the future reality but is already transforming the present. Thirdly, the minimal usage of digitalization concepts supports the idea of superficial integration of computer technologies into such programs. Finally, no concordances were identified around the idea of developing skills specific for e-learning and e-teaching. Thus, e-education and e-competences do not yet constitute an important objective for teacher training and education programs in Latvia.

Table 4. The obtained results of KWIC analysis

Keywords	The number of concordance hits	Key concordance samples (the number of samples if more than 1)
ICT	43	– Know the basic principles of usage of technologies; – Students choose a computer course (6); – Programs include an ICT course (8); – Using computers in work with people with special needs (2); – Using computers in work/studies (5) or development of new and necessary competences; – Following application of technologies to real life contexts (4); – Computers in pedagogy (7); – Technologies must fully be used in teaching (2); – Able to use technologies to identify regularities / patterns (2); – To use technologies for construction and development of new knowledge in students (5).
Data analysis (e.g. tools, software, technologies)	8	– Research methods contain data analysis; – While conducting data analysis (2); – Software used for data analysis; – Frequently used methods in data analysis; – Use data analysis technologies (3).
Software	7	– Apply practical skills of using software (e.g. SPSS); – Using relevant/specific software (4), students completed tasks; – Learning a new software; – Develop knowledge of software applicable to specialization.
Digital (e.g. knowledge, skills, competences, architecture design)	7	– Development of digital resources; – Digital learning environment; – Development of digital competences; – Legal and ethical aspects of digital environments; – Cross-cutting skills include digital skills; – The regularities that must be considered when working in the digital environment; – In the era of globalization and digitalization the diversity is an integral part of daily life.
Data processing	5	– Using the methodology of data processing; – Research tasks include data processing; – Develop knowledge of data processing; – Develop knowledge of data processing technologies; – Data processing and result analysis.
Programming	2	– An opportunity to acquire (the knowledge of) programming; – Acquire basic principles of programming.
Virtual reality	2	– Know how to function in the virtual reality; – Know how to use the opportunities of the virtual reality.
Artificial intelligence	1	– Know how to function in the context of the artificial intelligence.
The results for *adaptive spaces, e-competences, e-learning/distance learning, e-education, applications, IT component integration and data management* did not yield any hits.		

Conclusions

Teachers' expertise is one of the key components of effective education, including e-education (Babic, 2012; Bjekic et al., 2010). E-education and e-learning might be considered an integral part of the information society, which the current civilization has been aiming for decades (Fukuyama, 2000). The very notion of information society implies a fluent use of computer technologies. E-education is going to continue to develop similarly to businesses and other activities that have been moving into e-environments and which have already been undergoing transformations in such environments as a result of the evolution of these environments. These environments have been created by various software and are currently being enhanced by artificial intelligence, virtual reality and adaptive space functions. Many areas of education, not initially associated with computer technologies, have already implemented more advanced computer technology components in their training. For example, psychology trainees in the UK are often trained to conduct programming to study their cases and they learn programming languages in order to create their own e-environments to satisfy their own professional needs and the expectations of the market.

The review of the current teacher training and education programs in Latvia has demonstrated that computer skills have been introduced into training curricula, however, mostly at the rudimentary level. Basic knowledge of computer technologies was perhaps sufficient a decade ago but might be insufficient at present and in the future. It is important to understand that basic computer skills form only a small fraction of e-competences because the definition of competences presupposes creativity and the ability to productively use the acquired skills in new contexts for new purposes. The review has shown that the lexical concepts that are associated with *e-competences* were not identified in the selected corpus of texts. Therefore, it can be concluded that at present e-competences are not considered a value in Latvian teacher training and education programs; otherwise, they would be included into academic curricula. To understand why e-competences have not yet been included into academic curricula of these programs, the research of similar European programs should be conducted to figure out if this is a Latvian culture-specific developmental path of higher education or rather a European one, in which case it would point to the lack of the required conceptual frame on the European scale. Such a study would be the extension of this research and therefore is its current limitation.

As a result of this study, it can be suggested that Latvian higher education programs in teacher training and education should introduce more advanced computer technology courses into their curricula. Current computer technology courses in such programs should develop e-competences including rudiments of programming and the basic technical knowledge of artificial intelligence, virtual reality and adaptive space, the knowledge of which would provide teachers with basic programming skills required to design e-courses on e-educational platforms of the present and future. The reason is such that e-education and e-learning of the future will certainly be carried out in interaction with artificial intelligence, virtual reality and adaptive spaces. Additionally, more advanced computer knowledge would allow for more options to personalize training for students, which is students' aspiration (Shearer et al., 2020). Within the current trends of higher education development, which

include not only the delivery of proper knowledge to students but also satisfying students' expectations, personalization of learning should be implemented.

The development of e-competences is important to sustain lifelong learning skills and to adapt to various labour market transformations. More advanced e-competences, associated with more advanced computer skills, might significantly boost teachers' competitiveness on the Latvian and global education markets and on the overall Latvian employment market which will certainly welcome specialists capable of completing tasks in e-environments. Already now there are higher education programs integrating education and humanities with new technologies. For example, there are Master's and doctoral programs in education at Illinois College of Education, USA, which offer specialization in eLearning in higher education[3]. The University of Maryland administers a Master's program called "Distance Education and E-Learning"[4]. University College London has a Master's program in Digital Humanities[5], whereas the University of Washington has a program in Digital History[6]. In such a context, having more advanced courses on computer technologies incorporated into teacher training and education programs might boost competitiveness of Latvian education programs. In fact, the preliminary steps in that direction have already been taken by Riga Technical University, which has opened as Master's program in Digital Humanities[7].

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