The European Proceedings of
Social & Behavioural Sciences
EpSBS

Future Academy

ISSN: 2357-1330

https://dx.doi.org/10.15405/epsbs.2019.03.176

GCPMED 2018
International Scientific Conference "Global Challenges and Prospects of the Modern Economic Development"

TRANSFORMATION OF ECONOMIC EDUCATION UNDER CONDITIONS OF DIGITAL ECONOMY

I.V. Nikulina (a)*, O.V. Yudina (b), L.V. Averina (c), S.V. Gorbatov (d)
*Corresponding author

(a) Samara National Research University, Moskovskoye shosse, 34, 443086, Samara, Russia, e-mail: nikulinaiv@yandex.ru
(b) Samara State University of Economics, Sovetskoi Armii Str., 141, 443090, Samara, Russia, e-mail:ovyudina@bk.ru
(c) Business Education Center of Samara State University of Economics, Sovetskoi Armii Str., 141, 443090, Samara, Russia,
e-mail: alv94@ya.ru
(d) Samara State University of Economics, Sovetskoi Armii Str., 141, 443090, Samara, Russia, e-mail: gorbatovsv@sseu.ru

Abstract

In the age of computerization and high technology the digital economy involves many aspects of human life, including education. An important condition for the effective development of the digital economy is the reproduction of staff who are ready to actively apply information and communication technologies in their life process. The education system plays a leading role in the reproduction of the country's human resources. In this regard, it became necessary to improve the education system, which should provide the digital economy with competent personnel. Digital economy is not just the development of information technologies, it is the introduction of radically new business models oriented towards sustainable development and self-improvement. Transforming all forms of education and training throughout the life of a person is necessary in such a way as to unlock the full potential of new digital technologies and to develop among the population the skills needed in the labor market, including digital literacy, which is an important factor in the development of the digital economy. In this connection, a number of questions arise: what should be trained and how to train the staff of the digital economy age? What are the requirements for qualifications of faculty members in order to train qualified personnel for the digital economy? Answers to these questions will be given in this article.

Keywords: Digital economy, economic education, information and communication technologies, open information and educational environment.

https://dx.doi.org/10.15405/epsbs.2019.03.176
Corresponding Author: I.V. Nikulina
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. Introduction

The digital transformation, covering an increasingly large part of people's lives, has led to the need to develop a digital economy, which is based on the effective introduction of new technologies. Digital economy is a special economic activity that takes place in the conditions of automated management processes. Automation concerns both production processes and consumption processes. This form of economy is aimed at increasing the efficiency of various types of production, technologies, equipment, sales, storage, delivery of goods and services. The advantage of the digital economy is automation and standardization of all business processes: industrial, medical, educational, social, etc. The digital economy, being a part of the real economy, is closely connected with the Internet and is a kind of operating system that should achieve higher labor productivity, lower costs and speed up the sales, hiring, and service delivery processes. The government of our country at the legislative level approved a program for the implementation of the digital economy for the period from 2017 to 2030, aimed at creating and developing a digital environment conducive to solving the problems of competitiveness and national security of the Russian Federation. In the digital economy, there is an increase in the speed of information transmission, the knowledge accumulated by humankind in the present is not only accumulating, but it is also multiplying at high speed (Vukasovic & Stensaker, 2017). An important role in the development of the digital economy in Russian society is played by higher education institutions that ensure the reproduction of personnel for the country's economy. The digitization of the Russian economy poses a completely new task for the education system, providing the labor market with specialists who meet the requirements of the digital age. The transition of the Russian society to the digital economy actualizes the problem of the transformation of economic education, since it is the main foundation from which the transformations should begin. Economic education is becoming a significant condition for the transition to a digital economy through the use of advanced, future-oriented teaching methods and technologies, and the partial or complete transfer of the educational process to the Internet. The tasks facing higher economic education require its further informatization and the creation of a single space providing multi-level education, continuity of professional training, academic mobility of students and teachers, the implementation of network forms of education, the development of a system for assessing its quality.

2. Problem Statement

In the conditions of digitalization of the Russian economy, inevitably there is a process of transformation of economic education towards its digitalization. How transformations will take place and what conditions will facilitate this process is a task that needs to be solved today.

3. Research Questions

The transition to a digital economy based on new principles is not possible without a corresponding transformation of the consciousness of the Russian population. As it is known, it is not so simple to transform human consciousness, and it is education that plays the main role in this process. What should be economic education, so that it could be aimed at the formation of digital competence of students? How to organize the learning process to meet the requirements of the digital age? What are the qualification requirements for faculty members in the digital economy? These issues require an

https://dx.doi.org/10.15405/epsbs.2019.03.176
Corresponding Author: I.V. Nikulina
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

immediate solution, since the result of their decision depends on the quality of training of specialists who are ready to work in a digital economy.

4. Purpose of the Study

The purpose of the research was to identify key areas for the transformation of economic education in the digital economy.

5. Research Methods

In the course of the study, a set of complementary research methods was used: theoretical analysis and synthesis of philosophical, pedagogical, psychological, economic, and methodological literature; praximetric methods (study and generalization of the pedagogical experience of professional training of economists); empirical methods (included observation, questioning).

6. Findings

The need to integrate graduates of economic faculties into a digital economy leads to the transformation of the training process. Since information and economic activities related to its production and processing have become the dominant factors of development, educational programs should be structured in such a way as to not only translate knowledge of domestic and world scientific and technical innovations to students, but also to form competence in the active use and expanded reproduction of digital products. In vocational education, an important transition has been made to a new terminology, reflecting significant changes in its very content. It is not about mastering knowledge, but about acquiring skills, and moreover, not acquiring individual skills, but groups of skills or competences. Such a paradigm of terms has emerged: hard skills, soft skills, digital skills, which reflect fundamental changes in the educational sphere. For all professions there will be a different ratio of all the three skills groups mentioned. The first group of skills, as a rule, includes professional skills that can be brought to automatism and which can be measured, for example, by passing tests or exams. The latter belong to the category of personal qualities, are acquired in the process of socialization of a person and mastering professional experience, allow a person to be successful regardless of the specifics of his main activity. As for the third, it is important to determine who should receive the “package” of such skills (Sullivan, Czigler, & Hellgren, 2013). The simplest assumption about what skills are needed for a wider use of digital technologies can be the assumption of three areas in which they fit: the skills of specialists in the field of information and communication technologies for programming, developing application programs and network management; general skills in using information and communication technologies for professional purposes; additional information and communication technology skills to perform new tasks related to the use of information and communication technologies at work; digital literacy skills, as well as social and emotional skills that are crucial for ensuring the effective use of digital technologies by all people in their daily lives.

Analysis of scientific literature and teaching practice, taking into account the peculiarities of the flow of innovative processes in economic education, revealed a contradiction between the need of society for specialists who are able to carry out their professional activities in the digital space, and the

https://dx.doi.org/10.15405/epsbs.2019.03.176
Corresponding Author: I.V. Nikulina
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

predominance of traditional forms of education in higher education. In order to resolve the revealed contradiction it is necessary to organize the educational process at the university, so that it proceeds in an open information-educational environment. An open information and educational environment allows to make the learning process outside the educational institution; build large educational consortia; create global libraries of educational resources; to ensure the adaptation of future specialists to new working conditions in the digital space. The transfer of training to an open information-educational environment requires its presentation as a pedagogical system with its inherent traditional elements changing in connection with the use of information technologies: the content of the system is represented by electronic learning materials; learning tools are focused on network technologies; the teacher acquires new professional functions; The main task of the student becomes independent gaining knowledge. The educational process in an open information-educational environment is realized in the new conditions (the choice of any technical educational tool; the absence of temporal, spatial, methodical, quantitative and age-related limitations of the learning process; free choice of educational materials and their unlimited volumes; variety of learning trajectories, openness of learning outcomes and lack of knowledge boundaries; emotional and meaningful openness of electronic messages, limitations of volume of the messages, the absence of generally accepted norms of network ethics) that ensure the widespread availability of educational resources, the opportunity to learn at any time and on any technological platform, build an individual learning path, solve problems that arise in a timely and mobile manner (Strekalova, 2017). Information and communication technologies are becoming the main technical means of education, ensuring the holding of lecture presentations, testing and training, sending out teaching materials, storing student work and the results of their evaluation. The basic technology required for the construction and operation of an open information-educational environment includes open educational resources and web-based networking technologies based on web 2.0 services. The use of Internet technology in the teaching of economic disciplines can be implemented through a learning management system (LMS). The Moodle system can act as a technology platform for creating an e-learning environment. The active use of the Moodle management system in the process of professional training of economists allows to ensure: independent work of students; the provision of educational, educational and methodical material; the ability to test knowledge and monitor student performance; the possibility of keeping a journal of attendance and activity of students; mutual cooperation in the educational process between the teacher and the student; availability of e-learning tools (Pellegrino & Hilton, 2012).

Multi-level vocational training of economists ensures the development of a system of continuing professional education, the main goal of which is to train a specialist who is capable of continuous professional growth and change of professional activity without discontinuing production, taking into account the existing education, qualifications, and practical experience. Information and communication technologies that provide access to research and educational resources of leading educational institutions to wide sections of the population of any age and from any geographical point, allow to take into account the individual needs of students (through the variability of mastered programs, interactive technologies of classes, building an individual learning path). The development of academic mobility of students studying in economic universities contributes to the network integration of universities - a joint activity of educational institutions, manifested in the exchange of experience and personnel, the joint development

https://dx.doi.org/10.15405/epsbs.2019.03.176
Corresponding Author: I.V. Nikulina
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

and use of educational programs, teaching materials. Networking of universities allows improving the quality of vocational training, building promising partnerships with employers, organizing internships in real production areas, and stimulating the interaction of science and education (Holt, Segrave, & Cybulski, 2011; Enke, Kraft, & Metternich, 2015).

In addition to open information and educational environments, the learning process can be implemented through the teacher's personal educational environment, which is organized to transfer knowledge to students and to get work results from them. Analysis of research papers on the organization of personal educational environments showed that all researchers represent a personal environment as a set of information and communication technologies that provide an opportunity to learn distantly to everyone, and for teachers it is an opportunity to develop open training courses, post them on the Internet and interact with colleagues and partners. At the same time, the personal environment ensures the implementation of mass open educational courses (the active participation of hundreds and thousands of students who independently organize the course in accordance with the educational goals, existing skills and knowledge) and the transition from simple information transfer from teacher to student to the production of knowledge by a student. To do this, the personal environment must have accessibility, openness, polymedia, embeddability in educational projects, personalizability and be based on the network technologies of collective co-creation (web 2.0 technologies, social networks and network communities).

The organization of the educational process in the open information-educational, personal environments requires the readiness of teachers to actively apply information and communication technologies. The results of the survey of university professors show that they have difficulties in the effective use of information and communication technologies and information and educational environments. Teachers were asked to answer questions about what modern technologies and for what purposes they use in the educational process, what difficulties they experience and what the effectiveness of means of information and educational environment. Analysis of the survey results showed that most often in the classroom, teachers use presentations (72% of respondents) and selected teaching materials (77% of respondents), both in-house and borrowed from the Internet. 15% of teachers noted that they use publicly available web-courses in their professional activities, which indicates their lack of readiness to work with innovative educational technologies. At the same time, 42% of teachers use information and communication technologies in lectures, 38% in practical classes, 17% in assessing learning outcomes (testing). Analysis of the personal data showed that the active use of information and communication technologies in the professional activities of a teacher is hampered by: lack of adequate technical equipment of the university (27% of respondents); lack of financial administrative support (53%). Only 25% of teachers believe that an information educational environment has been created at the university. 43% of teachers surveyed have a moral and value barrier to mastering information and communication technologies, 78% of teachers have difficulty in designing and using open informational, educational and personal media. The results of the survey indicate the need for the formation of a university teacher's readiness to use information and communication technologies in the process of students' training.

It is possible to form the readiness of university teachers to use information and communication technologies in the educational process, to design and use open information-educational and personal

https://dx.doi.org/10.15405/epsbs.2019.03.176
Corresponding Author: I.V. Nikulina
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

environments within the framework of the system of professional development and professional retraining (Middlehurst, 2002; Gate, 2010). The system of formation of university teachers' readiness for the use of information and communication technologies can be represented by several elements, which are targeted, informative, procedural, effective. The target element of the system is a strategy for training teachers to use information and communication technologies in the educational process; the content element of the system is represented by the content of educational disciplines; the procedural element of the system is represented by interactive teaching methods; the effective element of the system is aimed at assessing the formation of components of teachers' readiness for the use of information and communication technologies (Pecherskaya, Averina, Kochetckova, Chupina, & Akimova, 2016). The substantive element of the formation of teachers' readiness for the use of information and communication technologies in the educational process involves the development of "cloud" technologies and ways to build network storage with multi-level access, the development of academic disciplines "Information and communication in science and education", "Computer technology presentations", "Electronic learning tools", "Information and educational environment", "Information technology management of the educational process".

In the structure of a university teacher's readiness to use information and communication technologies, the following components can be distinguished: value-motivational (beliefs that information and communication technologies are an effective method of teaching students (Averina, 2017); the need to use information and communication technologies in the educational process); cognitive (knowledge of the methodological foundations of information and communication technologies; knowledge of the methodical foundations of designing open information-educational and personal environments); technological (ability to use information and communication technologies in the educational process; ability to use open information-educational and personal environments in the educational process); reflexive (ability to evaluate students' learning outcomes using information and communication technologies; the ability to self-design the route of formation of readiness for the use of informational, educational and personal environments). The effectiveness of the system of advanced training for university teachers is expressed by the growth of average values of components in the structure of readiness for using information and communication technologies to solve pedagogical problems of organizing the educational process (Edler & Yeow, 2016).

7. Conclusion

The active development of the digital economy makes new demands on the quality of professional training of students owning digital technologies. Modern education, like everything else in the modern world, is developing with a high degree of uncertainty. The processes of adaptation of modern educational systems are burdened by the fact that education is a traditional, rather slowly developing institution (Guryanova, Khafiyatullina, Kolibanov, Makhovikov, & Frolov, 2018). Given the fact that in business models today there is a constant and rapid change in the set of skills, and then there is a high demand for new skills, it is necessary that the changes also apply to the education system. At present, the content of economic education is changing, it is more aimed at developing skills in using information and communication technologies for programming, for developing application programs and managing

networks, for professional purposes. Changes relate to the organization of the educational process in universities (Axelrad, Luski, & Malul, 2016). The organization of the educational process in an open information-educational environment allows the educational process to be taken out of the educational institution; create large consortia; access the global libraries of educational resources; to adapt future specialists to new working conditions in the digital space. Changing the form of organization of the educational process requires the readiness of teachers to actively apply information and communication technologies. Within the framework of the system of advanced training and professional retraining, it is possible to prepare university teachers to use information and communication technologies in the educational process, to design and use open informational, educational and personal media. The effectiveness of the system of advanced training for university teachers will be expressed by the growth of average values of value-motivational; cognitive; technological; reflexive components in the structure of readiness for the use of information and communication technologies in the educational process.

References

Averina, L.V. (2017). Models of organization of dialogical interaction in the implementation of DPO programs in the field of procurement. In G.Ju. Gulyaev (Ed.), *Sb. articles of the International scientific-practical conference European research 2017 International Scientific Conference* (pp.266-268). Penza, Russia: MCNS Nauka i Prosveschenie [in Rus.]

Axelrad, H., Luski, I., & Malul, M. (2016). Behavioral biases in the labor market, differences between older and younger individuals. *Journal of Behavioral and Experimental Economics, 60*, 23-28. https://dx.doi.org/10.1016/j.socec.2015.11.003

Edler, J., & Yeow, J. (2016). Connecting demand and supply. The role of intermediation in public procurement of innovation. *Research Policy, 45(2),* 414-426. DOI.10.1016/j.respol.2015.10.010

Enke, J., Kraft, K., & Metternich, J. (2015). Competency-oriented Design of Learning Modules. *Procedia CIRP, 32*, 7-12. https://dx.doi.org/10.1016/j.procir.2015.02.211

Gate, N.A. (2010). The activity of educational institutions in the field of providing services for additional vocational education. *Lawyer of the university, 2*, 14-20.

Guryanova, A., Khafiyatullina, E., Kolibanov, A., Makhovikov, A., & Frolov, V. (2018). Philosophical View on Human Existence in the World of Technic and Information. *Advances in Intelligent Systems and Computing, 622*, 97-104. https://dx.doi.org/10.1007/978-3-319-75383-6_13.

Holt, D., Segrave S., & Cybulski, J.L. (2011). *Professional Education Using E-Simulations: Benefits of Blended Learning Design* (pp.320-321). Hershey, PA: IGI Global.

Middlehurst, R. (2002). Variations on a Theme: Complexity and Choice in a World of Borderless Education. *Journal of Studies in International Education*, *6*(2), 134–155.

Pecherskaya, E.P., Averina, L.V., Kochetckova, N.V., Chupina, V.A., & Akimova, O.B. (2016). Methodology of project managers' competency formation in CPE. *IJME-Mathematics education, 11(8)*, 3066-3075. [in Rus.]

Pellegrino, J.W., & Hilton, M.L. (2012). *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century.* Washington, USA:NAS Press..

Strekalova, N.B. (2017). Quality management of independent work of students in an open information-educational environment. *SSAU*. Retrieved from URL https://ssau.ru/resources/dis_protection/strekalova [in Rus.]

Sullivan, K.P.H., Czigler, P.E., & Hellgren, J.M.S. (2013). *Cases on Professional Distance Education Degree Programs and Practices: Successes, Challenges, and Issues.* Hershey, PA: IGI Global.

Vukasovic, M., & Stensaker, B. (2017) University Alliances in the Europe of Knowledge: Positions, Agendas and Practices in the Policy Process. *European Educational Research Journal*, *17*(3), 349-364. https://dx.doi.org/10.1177/1474904117724572.