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Prospects for the Development of Digital Educational Environment in North-Eastern Federal University in the Context of Adult Education

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Abstract. The article discusses the need for the digitalization of education in the context of developing a system of continuing professional education in North-Eastern Federal University and explores associated risks and prospects for the future, including the customizable online learning tool, tailored to the individual needs of a person.

1. Introduction

It is well-established now that the earlier principles of pedagogies that were prevalent until the middle of the 20th century do not work well with the modern ideas of adult education and lifelong learning [1]. The accelerating pace of technological, social and cultural development creates a widening gap between the qualifications received by professional educational institution graduates and the quickly changing requirements of the employers [2]. The deep changes in the world view and perception of the world by people, brought about by processes that are taking place in the context of a civilization-wide shift to a new state, accompanied by significant transformation of social values [3] bring to the forefront of adult education new digital technologies that enable lifelong learning even in such remote areas as the Russian Far North and the Arctic.

Founded in 1956, the Ammosov North-Eastern Federal University (NEFU) is one of the ten federal universities in Russia and is the largest higher education institution in the Russian Northeast. NEFU is a strategic center for the formation of a common cultural, scientific and educational space based on the values of the indigenous peoples of North-East Russia, providing quality education in a multi-ethnic environment. Today, NEFU is focusing heavily on digitalization of core university processes. The Yakut Global University, a digital learning system of NEFU, is responsible for offering online platforms for academic programs, introducing distance education and using IT tools in research. Additionally, together with local authorities, NEFU is working on providing Internet access to all four campuses and remote areas of the Russian Northeast.

The Concept for the Long-Term Social and Economic Development of the Russian Federation lists one of the priority goals in education as the improvement of accessibility of quality education in accordance with the requirements of the society [4]. Additional professional education becomes a key element in the system of lifelong learning by enabling access to quality education through short-term

training, refreshing the existing theoretical knowledge, and raising the overall professional level of existing specialists.

Today it is possible to say with confidence that people understand and are aware of the objective necessity and subjective need for lifelong education. However, for Yakutia, with its vast territory and unique geographic and climatic conditions, the vital issue of improving the quality and accessibility of continuing professional education for adults, including various diverse categories such as idle and unemployed citizens, requires further research and a search for solution. The role of educators in creating this outlook and awareness among both adults and young people cannot be overestimated.

2. Method and research problem

The purpose of the study is to substantiate the need for digitalization of education as a factor of continuous education in the conditions of the Far North.

Methods of research and problem solving: review of the existing literature on the subject, analysis of regulatory documents and results of activity, forecasting, identification of risks, systematization and analysis of scientific approaches, analysis of statistical data.

Results: proposals for the introduction of digital technologies in continuing education for universities of the Far North.

3. Research

Digitalization of education can give to the society massive resources for developing human capacity and improving quality of life. However, the principal focus should not be on information and communication technologies nor on digital educational devices, but on a "person as a triune of spirit, soul and body, who has unlimited potential for improving the quality of education, and with its help, of the quality of life of the person and the society" [5]. In relation to this, in conditions of global digitalization and, at the same time, complete lack of specialists that have the necessary skills for using digital technologies, the federal university should become a center of continuing education and improvement of digital competencies, which do not have definitions at the moment, but can be considered as soft skills and functional literacy. The advantage of institutes of continuing professional education is that they, reacting to all changes in a flexible and timely manner, and having the needed intellectual and technical resources, can train in a short time the necessary specialists that would have the required competencies and skills for eliminating professional deficits. This is true for the Institute of Continuing Professional Education of NEFU as well, which has over 180 employees of the federal university among its staff of educators. The WEB-Department educational portal and technical resources of the ICPE NEFU are more than enough to hold online webinars, organize conference calls, and conduct defense of graduate qualification works of students who reside in remote and hard-to-access regions of Yakutia. One of the priority tasks is to expedite the development of digital learning, including the development and introduction of mass open online courses, completely or partially free for the learners, in order to ensure the mass character and accessibility of continuing professional education as part of the social responsibility of the federal university.

According to the theory of contextual education of A.A. Verbitsky, using the whole system of both new and traditional pedagogical technologies in the educational activities of young and adult students consistently models the subject-technology, social, and moral content of their professional activities [5].

The development of information and communication technologies, a shift to a post-industrial society and accelerating globalization processes are rapidly changing the world. In this environment, universities must compete in the global market of knowledge, the global market of research and the global market of labour resources [6]. This leads to an increasing importance of activities for identifying, developing and implementing new mechanisms of improving the efficiency of universities in the context of establishment and development of the knowledge economy.

Makarov characterizes the impact of the knowledge economy on higher education in two ways. First, based on the estimation of the total investment into the development of its basic sector that

creates and disseminates new knowledge (education and research). Second, based on the estimation of the gross added value of all branches of economy that make use of new knowledge: from the so-called high-tech branches on the top level or leading high technologies that also include the defence industry, to high technologies on the middle level and the sphere of high technology services [7].

The issue of commercializing the results of research and studies is one of the most pressing ones for NEFU and other Russian universities. Talking about the Academy of Sciences Makarov states that it can be viewed as a kind of a large corporation that should act as one, creating separate positions for a scientific leadership and executive leadership that would have various departments aimed at producing income. Another important factor here is the reputation of the education or scientific organization, which is also a great market resource [7].

In this regard, NEFU is facing several challenges, both internal and external, including the state of business processes in the university that are not suited for activities that produce income, undeveloped marketing, historically established directions of research oriented towards regional issues, and low entrepreneurial culture, as well as climatic and geographical conditions of the region non-conductive to research-intensive industries. On the other hand, NEFU has a well-developed infrastructure, a positive image and a wide partner network on Russian and international levels, as well as great prospects for further development enabled by the high education level of the population and increasing global interest in the North and the Arctic [8].

Zakhariev noted that knowledge economy develops due to application of ideas, contrasted to the traditional development of economy based on labour and capital. This new emphasis on more knowledge and innovation transforms the demand in global labour markets. Everyone, including ordinary citizens and highly qualified specialists feels the constant need to improve and expand their knowledge, irrespective of previous education and social status. This requires the creation of a new model of education and training of specialists: the model of lifelong or continuous education [9].

Glazachev, talking about global challenges and the mission of modern education in these conditions, named the 21st century the century of human qualities, stating that personal abilities, talents and skills will be ever increasing in importance. "This means that the new century will be the century of education, as education is meant to effect the reproduction of a person as a social entity, a spiritual, thinking and responsible individual." The mission of education is to give people the means to adequately react to various situations in life, to adequately formulate goals, set tasks and resolve issues arising from interactions with society and nature. This is possible if an individual, in addition to the traditional array of skills and competencies (literacy, knowledge of foreign languages, fundamentals of mathematics), masters and develops such competencies as the ability for self-education and research, knowledge of information and communication technologies, the ability to quickly react to changing conditions, act independently, apply skills and knowledge, work within socially heterogenous groups and teams consisting of representatives of various different professions [10].

Grudzinsky and Paleyeva point out that the new university paradigm in modern times can be defined as a "triangle of knowledge – science, innovation, education". The modern functional education should conform to this paradigm. The main criterion for evaluating the functionality of higher education is the competence model, adopted and codified in federal standards of higher education in Russia. The authors propose to include among the groups of competencies a separate group of educational-learning and entrepreneurial competencies, as the creativity and entrepreneurial spirit of people are the force behind the development of innovative knowledge society. Based on the review of various models of higher education in developed countries, the authors come to the conclusion that at the centre of knowledge society in all countries is the higher education, the constant development of which is a key success factor of national economies that need qualified specialists. As such, the authors evaluate the functionality of higher education based on such skills as the use of modern information technologies, the ability to search for and process required information, adapting it to the current needs [11].

The analysis of development of leading world universities shows that development of online education becomes an important aspect of changes in their activities. Educational technologies have changed significantly owing to the fast development of computers and the Internet.

Modern educational institutions that incorporate within them cyber-universities and digital and electronic universities via network technologies allow their students to receive higher education without the need to be physically present at the university. Taking into account the experience of leading European and Asian universities Yakutsk Global University is working to introduce mechanisms for expanding distant education using the capacity of Moodle system, especially in Master's degrees [12]

If we consider that continuous pedagogical education is primarily directed at getting educators ready to face new global challenges, we understand that all of it is based on high levels of professionalism and a consistent personal system of values. The concept of continuous pedagogical education was a subject of much debate among the scientific and pedagogical communities of not only Yakutia, but also Russia and foreign partners. For example, in 2015, at "Education, Forward!" Forum, educators and researchers discussed issues of continuing pedagogical education in view of global challenges, as well as issues of applying the professional standard of an educator in conditions of a transition to a synergetic model of learning and understanding the world. The NEFU Concept of Continuous Pedagogical Education was constantly enriched with valuable ideas from the pedagogical community of Yakutia at all subsequent educational forums, but it was at this Forum of 2015 that a principal decision was made: to conduct research among educators with an aim of understanding who the modern teacher is, and if he had changed since 2005 when such research was done last, with additional goals of identifying the maturity of educators' professional competencies, index of their well-being in professional and personal spheres, the level of influence of professional crisis factors on educators, etc. Now, after several years, we can see that the goals set by the state in implementing the "Education" National Project are once again posing a serious challenge to educators. These challenges are primarily connected with the need for constant and intensive self-development. Thus, the pace of life and work that the modern educator experiences today will only continue to quicken. This is also connected with the need for overcoming barriers related to the implementation of the system of independent assessment of educators' professional qualifications and the processes that will undoubtedly be set in motion by the introduction of the National System of Teachers' Growth, a new model of professional review, etc. Within this context, the NEFU Concept of Continuous Pedagogical Education is aimed at not only resolving issues connected with adapting educators to changing conditions of their profession, but also integrative engagement with the modern society and labor market, the rules of which are constantly changing at a rapid pace. The requirements of employers in relation to education results are becoming much more rigorous, independent of where that education was obtained, be it secondary professional education or higher education. This is due to the fact that the idea of early vocational guidance and training of specialists starting in secondary school has stopped being just an idea and is being rapidly implemented into real life.

4. Results

Technological progress has always been a two-way street, giving people many new opportunities and access to ever-increasing amounts of information, and, at the same time, creating new risks connected with the simultaneous ease of access to educational content and the lowering of its quality, as well as the loss of moral significance and content of education, which, especially in Yakutia and Russia as a whole, has always relied on the values of spirituality and morality.

Digitalization of education is the reality of the present, and the educational environment is growing and expanding through the development of the digital environment: new digital educational resources are created, educational platforms are developed, the number of open online courses is growing daily. The modernization of education in line with global tendencies has not only created a better system for educators and learners, but has also brought with it many expected and unexpected risks [13].

The risk in all of this is in the conflict between the great potential of digitalization and the ability of educators to provide all the above digital resources with quality content. Modern learners can use their gadgets at any moment to create their own educational environments and have no difficulties finding and gaining access to any relevant information. This allows for the mitigation of risks associated with the digitalization of education by employing the fundamental functions of education – teaching and guiding people to help them find answers to any questions they might face in their lives.

One of the more prospective developments in the digitalization of educational environment in NEFU is the creation of an educational web site that allows learners to construct their own individualized curricula based on their personal preferences and the cost of chosen modules. The algorithm for working with this online calculator of educational services is as follows:

1. The learners select desired disciplines from the list of offered courses. The website makes it clear that each discipline has its own corresponding price.
2. Each program of study has a number of compulsory disciplines that every learner must complete.
3. Each program of study includes a number of general disciplines that the learner might have already completed during his or her undergraduate or postgraduate studies. If the learners have the corresponding discipline in their previous diploma, there is no need for them to retake the course. The cost of these courses will be deducted from the total price of the program.
4. Each program has a number of elective disciplines that can be selected by learners to further their studies.

5. Conclusion

Today, the main trend of Russian education is digitalization. The goals of the education system in this context are to promote the comprehensive development of students and to train competent personnel for the digital economy. The main trend in education is associated with the digital revolution, which is already leading to a fundamental change in the labor market, emergence of new competencies, improved cooperation, increased responsibility of peoples, improvement in their ability to make independent decisions, and so on. The use of digital technologies in everyday life creates a system of motivation for citizens to master the necessary competencies and participate in the development of the digital economy of Russia.

The creation of the digital educational environment in NEFU is ongoing and will result in a comprehensive coverage of the whole North-Eastern part of Russia, providing immediate opportunities for the people of the region to receive quality additional education or specialized training, increasing their competitiveness in the labor market and improving the overall quality of life.

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