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THE DIGITALIZATION PROCESS IN THE RUSSIAN EDUCATION SYSTEM

Abstract: This paper highlights the digitalization process in modern Russian education and discusses its problems with possible solutions. At the present stage, the use of various digital technologies becomes necessary in any field of human activity. In education, the use of modern technologies has been proven to increase the learning rate of students. However, one of the problems is the lack of computer skills among teachers that inhibits the development of e-learning in Russia. Therefore, didactic principles regarding the digitalization process in educational institutions need to be reconsidered. A promising task for the successful digitalization process is digital literacy, which should be focused on the use of the digital environment in the educational process.

Keywords: digitalization, modern education, e-learning, education policies, digital literacy.

The modern digital educational environment in the Russian Federation is a priority project in the field of education. Its goal is high-quality and affordable online training for citizens of the country using digital technologies, a set of information systems designed to support the tasks of the educational process in various education systems. The assimilated information by students using information and communication technologies is much faster than using traditional, standard learning process methods. Digitalizing the educational process, the new generation is prepared for life in modern information conditions, for the perception of various information and communication based on non-verbal forms using modern technologies.

The education sector must adapt to serious changes in the demand for qualified workers due to the digitalization of the educational process. The concepts and methods of teaching and learning need to be improved and adapted to new requirements. Accelerated changes can improve the educational process a lot. Today

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it is possible to use a wide range of devices (various technical teaching aids) in the educational process, which allow a teacher and students not only to see (on the screen), but to hear and complete the training task, creative and practical work from a perspective that had not existed until recently.

However, there are two main problems of digitalization in the education sector. The first one is the availability of sufficient technical means (and specialists for their maintenance) in educational organizations. The second one is a low level of computer skills among the majority of teachers. Moreover, the first problem is solving quite intensively. Over the last decade, numerous educational organizations received computers, interactive whiteboards, plasma displays and other electronic equipment. Nevertheless, all this «hardware» does not always work effectively. During lessons, teacher is responsible for technical means, but, at the present stage, there is no developed didactics for proper work with these devices. Each teacher independently decides whether to use electronic materials in the educational process or not [4].

In 2016, the federal project «Modern Digital Educational Environment in the Russian Federation» started, approved by the Government of the Russian Federation as part of the state program «Development of Education» for 2013-2020. Within the framework of this project, it is planned to «modernize the education and training system, bring educational programs into line with the needs of the digital economy, widely introduce digital tools for learning activities and integrate them integrally into the information environment, ensure that people can learn about the individual curriculum throughout their lives at any time and in any place» [1]. The education system should provide society with a confident transition to a digital era focused on productivity growth, new types of work, human needs, which is possible by including all segments of the population in the educational process, building individual learning paths, managing their own learning outcomes, virtual and augmented reality [6]. Therefore, the main areas of information technology application in today's education are:

• development of pedagogical software for various purposes;
• development of educational websites;

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• development of methodological and didactic materials;

• management of real objects;

• organization and conduct of computer experiments with virtual models [2].

For a successful implementation, digitalization must be subject to changes in didactic principles, curricula, forms of education, educational media and content, educational institution and campus management system; teachers and educators of all levels of education, from primary to higher education, must undergo advanced training. It is also necessary to revise the content of the competences, which should carry integrative, interdisciplinary knowledge. With this in mind, educational standards should be revised and corrections made.

From the methodological point of view, a completely new organization of the educational process need to be implemented. The focus should be on such teaching that will orient students towards achieving results, a creative and at the same time critical attitude to the task they perform. The teacher increasingly plays the role of an adviser in the learning process. The digital environment that is created in an educational institution should provide students with the most individualized conditions for their learning, but at the same time, the heterogeneous background characteristic of a particular institution should remain.

The most notable role of digitalization is in higher and vocational education. Due to their association to the employment system, educational institutions are highly dependent on the technological and economic transformations brought about by the digital revolution. They must respond in a timely manner to new economic challenges, namely: design and construction in 3D, e-commerce, e-health, smart farming; this challenges should be taken into account while developing educational plans. The widespread use of digital technology and equipment inevitably affects the business processes of modern industry and economy. At the same time, the share of labor spent on information processing is increasing. This leads to a decrease in traditional work activities. Human labor is becoming highly creative and free these days. The digital resources used today in everyday human activities allow us to overcome the barriers of traditional learning: the pace of mastering a program, the

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choice of a teacher, the forms and methods of teaching. Therefore, lifelong learning is a must for modern education.

An important condition for the digitalization process in education is international cooperation and the exchange of information. Modern processes require more and more cooperation, which also requires the development of intercultural and linguistic competencies. The role of multinational societies is growing. Thus, the last decades, which are characterized by the development of digital technologies, clearly demonstrate that, for example, the European educational system is increasingly focusing on the construction of knowledge through information processing. Due to digital technologies and the Internet, education is being transformed from a «lecture» into a «dialogue» between teacher and student. Education is moving from the consumption of knowledge to its production, from the authoritarian nature of the educational process to cooperation, from the format of lectures to discussions and seminars, strengthening the advisory component in teaching. Thus, we can state the transition from the «reproductive» paradigm of education to the «creative» one, which becomes possible due to the continuous interaction of human, technology and society [3].

On the one hand, digitalization undermines the methodological basis of the school inherited from the past, on the other hand, it generates the availability of information in its various forms, not only in text, but also in sound and visual. Availability of information will require constant search and selection of relevant and interesting content, high processing speeds. Consequently, the digitalization of education leads to its radical, qualitative restructuring. The teacher must learn to use new technological tools and virtually unlimited information resources. Virtual reality technologies make it possible to use digital simulators that are not tied to a single workplace, which expands the range of technologies under study. Mobile learning technologies allow you to study anytime, anywhere.

Today, information and knowledge are the basis of economic progress, to which traditional concepts and models are not applicable. The most important feature

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of a person adequate to the digital economy is that this person owns digital technologies and applies them in his professional activity.

A modern teacher should actively use technologies in order to maintain an unflagging interest of a new generation's students. Children of different ages quickly adapt to the digital technologies as they are surrounded by them since they are born. Therefore, children acquire new skills much faster than their teachers. Consequently, the digitalization of education directly depends on teachers' knowledge about digital technologies.

A promising task for the successful digitalization process is to improve the skills of teachers of digital literacy, focused not only on the development of courses, but also on the use of the digital environment in the educational process. The digital environment requires teachers of a different mentality, picture of the world, a completely different way and form of work with students. The role of the teacher is to guide students in the digital world.

Digital literacy is the ability to create and apply content through digital technologies, including computer programming skills, search, information sharing, and communication. The concept of digital literacy as the ability to work with a computer as with iron, understanding the characteristics of the device and the dissemination of digital information, the device of the network community and the features of social media [7]. The elements of digital literacy are the cultural context understanding of the Internet environment, the ability to communicate in online communities, create and distribute content, and develop themselves. The content of digital literacy comes down to the understanding that if there is clarity in the structure and content of digital reality, then there will be clarity in control and interaction with digital technologies. Digitalization management is possible with uniform databases, learning effectiveness criteria, in other words, an integrated approach that would define the goals, structures and content of the educational process [5].

The digitalization process in the Russian education system is a significant step towards to e-learning. However, the development in the education sector still might be inhibited. Therefore, education policies regarding the digitalization process need

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to be reconsidered in order to train qualified workers that could boost the education development.

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