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DIGITAL EDUCATION IN RUSSIA: TRENDS, CHALLENGES AND DEVELOPMENT STRATEGIES

Elita Sultanovna Abdulayeva (a)*, Tamila Magomedovna Nintsieva (b)
*Corresponding author

(a) Kadyrov Chechen State University, Grozny, Russia, elita8881@mail.ru
(b) Kadyrov Chechen State University, Grozny, Russia, tamila761076@mail.ru

Abstract

The article deals with topical issues of digitalization of Russian education as one of the key factors contributing to the successful integration of Russia into the global economic space and maintaining its own competitiveness in the world market. The question of the need to transform the system of general education naturally comes to the fore. The transition of the educational process to a digital format requires fundamental changes, both in content, and in methodological and organizational aspects. The study of the stated problem is carried out by methods of dialectical knowledge, literature analysis, synthesis and modeling of socio-cultural phenomena. The key concepts associated with the phenomenon of global digitalization and the transformation of the Russian education system are considered. Attention is focused on the importance of the formation of such an educational skill as digital literacy. At the same time, the main factor that brings digital literacy to the proper level is the personalization of the educational process and the principle of "lifelong education". The presented review reflects all the multidimensionality and ambiguity of the phenomenon under study. According to the authors, the process of transformation of the Russian education system, in which the transition to the "digit" is associated with a number of problems and contradictions. It is concluded that the concept of digitalization of education must be considered in a variety of perspectives, taking into account not only its advantages, but also its disadvantages.

Keywords: Digitalization of the economy, digitalization of education, digital literacy, digital technologies, digital competencies, globalization

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1. Introduction

Modern reality involuntarily turns us to the theories expressed in the second half of the twentieth century by a number of authors: D. Bell, E. Toffler, M. Castells, T. Stoner, P. Drucker, J.-F. Lyotar, J. Gilbert and many others. Others, who placed the innovative component at the epicenter of the development of the post-industrial society, and the researchers proclaimed information and its global distribution in the world space as the system-forming core of the society of the third millennium (Weindorff-Sysoeva & Subocheva, 2018). As you can see, many of the predictions of D. Bell, E. Toffler and others like them have now become our daily routine, and a new round of civilizational development has put a person on a new level of being, where a new public space is rapidly being formed - the cyber environment (Abdulaeva et al., 2019). This global neoplasm is a completely new type of social structure, in which there is a powerful transformation of cultural paradigms that are inextricably linked with the interweaving of social and technological realities into a common picture of the world, where we still assign the dominant role to man - both as the creator of innovations and as their consumer.

The digital revolution, which has literally covered all spheres of our life in just two decades, has led to a radical transformation of most social processes and phenomena, and has presented new requirements to a person. Under the influence of digitalization, economics and business processes, politics and culture, healthcare and science, interpersonal communications, etc. are reaching a new level.

In these conditions, the problem of a person's readiness to accept civilizational challenges becomes obvious: does he have enough skills, knowledge, experience to adapt and function effectively in a new space. The decisive role in this matter certainly belongs to the educational environment. The educational process of a post-industrial society must certainly be: first, it is focused on the values and principles of the current socio-cultural paradigm, and second, it must meet the demands of the time, providing a person with the opportunity to direct his potential to productive interaction with the environment. The degree of formation of the labor resources of any state inevitably depends on how high the level of the educational process is, and today, given the unprecedented dynamics of social processes, this problem is of particular relevance.

Global digitalization, which has made fundamental changes in the economy, politics, interpersonal communications, production processes, culture, leisure and other areas of social life, forces a person to form new values, meanings, look for new forms and ways of functioning in the environment. The introduction of modern technologies and innovations requires the development of new competencies and skills, which implies an active position and response, first of all, from the education system, designed to develop new goals, approaches, methods of the educational process aimed at matching students' knowledge with modern socio-economic needs in the context of global digitalization. We must admit that it is no longer possible to ignore the "digit" in order to keep up with the times and meet the new standards of the digital society (Ustyuzhanina & Evsukov, 2018).

To solve such problems, the Russian education system, in accordance with the Strategy for the Development of the Information Society in the Russian Federation for 2017-2030 and the Federal Project "Digital Educational Environment", has set a course for the implementation of the digital transformation of the educational environment. The purpose of this transformation is the introduction of digital

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technologies in the educational process, the re-equipment of schools, universities and other educational institutions with IT resources, the creation of digital services and digital content for educational activities. But the complete digital restructuring of education is not limited to this, it should be noted the need for a qualitative change in the personnel potential of educational institutions, the restructuring of communications, the optimization of intra-school and intra-university processes and putting them on new "rails", in accordance with the requirements of the new reality (Ministry of Education of Russia, 2019).

Along with this, the authors note the fact of the versatility and inconsistency of the digital transformation of education. On the one hand, the need to replace obsolete educational technologies is obvious: the future lies with digital, and we must take progressive steps towards an open global space, following innovations. On the other hand, today it is still difficult to make predictions about the consequences of total digitalization, but significant risks have already emerged today: the gradual loss of social skills, dehumanization, problems of human self-identification, manipulation of his consciousness. All this requires a deep analysis and a thoughtful approach to the process.

The article attempts to analyze the main trends, strategies and risks that the digital transformation of the educational environment in our country entails. The results of this analysis can have both theoretical and applied significance in understanding the processes that global digitalization has brought to the field of education.

2. Problem Statement

The relevance of the stated topic seems to us to be a fact naturally arising from the realities of today: the scale of modern social transformations has taken on a truly global format, the digital revolution has rapidly turned all spheres of human existence, literally "on the go" forming new mechanisms and principles of socio-cultural interactions. The dynamics of the changes taking place in society today are so rapid that, before the eyes of one generation, we are witnessing a change in a number of technological cycles following one after another at an incredible speed.

3. Research Questions

Having crossed the line of the fourth industrial revolution (Ustyuzhanina & Evsukov, 2018), humanity entered the era of the formation of a completely new habitat, a new type of society - informational, integrating two types of social reality: post-industrial and globalizing. Only a few decades have passed since humanity entered the information age, which from a project of the distant future has become a reality of the present, where the dominant role is assigned to high technologies, network communications and virtual reality. Mankind, having created a "second nature" - the world of things transformed to fit its needs and needs - went further and, complicating the latter, creates a "third nature": artificial, digital, informational. This new space is a synthetic product of the close interaction of material production, which has become the apogee of scientific and technological progress, automation and digital technologies that have rapidly burst into our lives.

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4. Purpose of the Study

The purpose of the study is to study the trends, risks and strategies for the development of digitalization of the educational environment in modern Russia.

The study of the topic is based on current sources in the field of sociology, economics, philosophy, cultural studies, pedagogy, sociology and psychology of education.

5. Research Methods

A review of the scientific literature and periodic scientific publications, both domestic and foreign authors, allowed the authors to conduct a theoretical analysis of such concepts as “digitalization”, “globalization”, “digital technologies”, “digital competencies”, “digital literacy”, etc. The clarification of definitions made it possible to carry out a meaningful understanding of the studied phenomena and to determine the key factors that determine the essence, development strategies and risks of digitalization of the educational process in Russian educational institutions (Ministry of Education of Russia, 2019).

The study was based on generally accepted approaches in science: systemic, dialectical, philosophical and cultural, structural and functional.

In the dialectical aspect, the unity and contradiction of the digitalization process are considered; its fragmentation, on the one hand, and syncretism, on the other hand, reflect the dynamics of educational culture in terms of the complex interaction of traditional and innovative teaching methods.

The principles of a systematic approach are implemented in considering the educational environment as an integral part of the entire surrounding world, in connection with which digitalization is a natural set of transformations in a single area, closely interacting with all other structures of the overall system. Based on the principles of a systematic approach, the process of digital transformation of education is possible only with the integrated optimization of all its components that make up a complex self-organizing system.

The analysis of sources was carried out using the principles of historicism and consistency, which made it possible to consider the phenomenon of digitalization of education as one of the stages in the evolution of the educational process in the current situation of civilizational development.

6. Findings

At the present stage, the world community is experiencing the most powerful impact of global processes that are completely and completely transforming all spheres of public life. At tremendous speeds, cardinal shifts in all social processes, social structure and interaction are taking place, due to the formation of a single space for the unhindered exchange of services, goods, cash flows and labor resources. The civilized world is moving to a new level of economic development, in which the primary role is given to those processes that are directly related to the consumption, processing and distribution of information. “Digital”, which has become a priority direction of economic development, has formed a new trend in the development of society - the digital economy (Shakhgiraev & Murtazova, 2019).

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If initially the concept of “digitalization” was associated with the intensive spread of information and communication technologies in the technical and industrial fields, today we are talking about the penetration of digital influence into the general outline of the social structure, affecting, without exception, all areas of human life. The integration of digital technologies into social processes is a factor that creates both new opportunities and multiple risks, accompanied by uncertainty, inconsistency and very difficult from the point of view of any forecast.

Mobile communications, the Internet, online training platforms for database systems and data transmission, and so on - all these are unconditional markers of today, in which even those areas of human life that were difficult to imagine in digital format a few years ago have become “digitized”. The rapid expansion of digital technologies is read by us through a variety of trends that have come into our lives (Shakhgiraev & Zubairaev, 2021):

1. the determining factor in social development today is science and innovation, as a determining factor in social development;
2. information is a key dominant, in comparison with other resources (human, industrial, raw materials), which determines the prosperity of society;
3. active introduction of IT both in production and in everyday life;
4. high level of media dependence of the population;
5. development of the network space as the main means of communication;
6. virtualization of all social spheres;
7. differentiation of economic spheres into high-tech and raw materials;
8. the prevailing position of information relative to knowledge;
9. the spread of information pollution, and, as a result, a decrease in the value of traditional stabilizers of social stability - ethics, morality, religion, humanitarian knowledge, etc. (Uvarov et al., 2019).

These are only the most obvious trends in social development today, in fact there are significantly more of them, however, it becomes clear from these examples that the information age is not only a technological aspect of a new stage of social development, but also the formation of a new, unique type of culture, in which a synthesis is clearly found all spheres of human existence, uniting a person, society and nature into a single information space (Murtazova, 2022).

Under the current conditions, the problem of restructuring and transforming the educational system has clearly emerged, which, firstly, is one of the first to respond to any socio-economic challenges, and secondly, it should itself become that resource, that guide that will provide a person of the digital age with the necessary level of training for effective integration into a new, digital socio-economic space.

The new type of digital culture of society that has developed in the course of globalization, as well as the course towards the digital economy, put forward a request for a change in the educational paradigm, which requires a different approach to the content and methodology of the educational process and its organization (Vorontsova et al., 2019). We are talking about the digitalization of education, its transformation through the introduction of digital technologies at all stages and levels of the educational process.

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The very term “digital education” today does not yet have established interpretations in scientific terminology, which does not cancel the process itself as a given, but only indicates the versatility of the phenomenon, its novelty and the need for further comprehensive research. Referring to relevant publications, the authors highlight the analysis of the phenomenology of digital education, presented in the study by M.E. Weindorff-Sysoeva and M.L. Subocheva, who studied various interpretations of terms related to the digitalization of the educational system. Summarizing various terminological interpretations, the authors propose to consider digital education as the process of organizing interaction between teachers and students when moving from goal to result in a digital educational environment, the main means of which are digital technologies, digital tools and digital traces as the results of educational and professional activities in digital format (Fedorov, 2013). At the same time, digital tools mean software products for management, organization of the educational process, as well as the regulations for professional and pedagogical activities and the student assessment system, presented in digital format.

The implementation of the digital transformation of education is carried out in three main areas that are closely interconnected with each other:

1.Formation of the digital infrastructure of education.

2.Creation of an educational and methodological base, services and tools presented in digital format, as well as a digital system for recording achievements and assessing students’ knowledge

3.Design and development of digital models for organizing the educational process.

To solve the tasks set today, many scientists are developing various concepts of the digital transformation of education; this question is still under discussion. The problem of structuring and component composition of digital education is under development, but most authors unanimously agree that the digitalization of the educational system will lead Russian society to a global digital economy if the system itself fully meets the requirements and capabilities of an open global space. In this regard, it is necessary to fully integrate the subjects of the educational process into the digital environment (Klishina et al., 2017).

Today, various options for structuring the educational space are being considered. Each of the researchers focuses on various aspects of the introduction of “numbers” in teaching activities. So, E.V. Chernobay represents the digital educational space as a unity and interaction of such components as a value-semantic block, including goals and objectives, program-methodical, information-knowledge, communication and, directly, technological (innovative technologies). O.V. Bashirova pays great attention to the performance-evaluative component, designed to diagnose and correct the personal learning trajectory of the subject of educational activity. Uvarov et al. (2019) notes the dominant importance of the specific information block, which includes digital content, software resources, information services and tools that allow solving specific educational problems.

It is obvious that the transition of the educational system to a digital format is a task that does not involve momentary decisions, requiring a thoughtful analysis of both the positive potential of digital technologies and the negative consequences of the “digitization” of educational activities. And of course, it becomes clear that digital transformation takes time; according to HSE researchers, the completion of the education system in Russia will take at least 15-20 years (Uvarov, 2018)

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The main task of digitalization in the field of education is to implement the continuity of education in accordance with the concept of "education throughout life" (life - long - learning) and the transition from traditional forms of education to the format of personalized learning by students, the so-called advanced learning technologies (advanced - learning - technologies).

Such an educational vector was not chosen by chance, and has good reasons (Taranova et al., 2021). Today, in the scientific, political, economic discourse not only in Russia, but also in most developed countries, the problem of insufficiently high-quality training of students is being sharply discussed: both school graduates and senior students. In this regard, the entire developed world is undertaking various kinds of reforms aimed at improving the effectiveness of the educational process. However, studies initiated by the OECD Center for Pedagogical Research and Innovation (Starichenko, 2020) show that the level of human readiness for the realities of the modern economy remains low.

When assessing the general literacy of employees and their ability to quickly and efficiently cope with the assigned professional tasks (within the framework of OSER studies), it was found that human capabilities cannot compete with computer systems. The trend is very clear: computers, robots, artificial intelligence will soon replace humans (Shmatko et al., 2016). Slightly more than 10% of respondents managed to show a high level of training and the ability to solve problems no worse, and even better than computer systems. This naturally leads to the question of the formation of new competencies and digital literacy in the education process. Otherwise, a very short period of time will pass, and a person will be uncompetitive in the personnel market (Popov et al., 2022).

What does the term "digital literacy" mean? In the narrowest sense, digital literacy is the ability of a person to use digital tools to achieve their goals. However, if we talk about digital literacy as a key result of the educational process, we must expand our approach to understanding the phenomenon. From the point of view of educational significance, digital literacy is a set of knowledge and skills that allow you to safely and effectively use digital technologies and Internet resources. An important aspect here is the combination of such categories as digital competence, digital consumption, digital security (Agarkova et al., 2016).

Digital competencies consist in the ability to use digital technologies in everyday life, which include: searching for information on the Internet, using online services for various financial transactions, making online purchases, as well as the ability to check the accuracy of this or that information, connecting critical thinking and others digital skills (Podkolzina, Belousov, et al., 2021).

Digital consumption reflects the availability and openness of digital services, the use of "numbers" at any convenient time by any person. We are talking about mobile communications, mobile and broadband Internet, various sites and portals offering goods and services, mobile applications, and so on.

In the context of digital security, the level of mastering the technical and social skills of using digital technologies is considered. This refers to the ability of a person to ensure the confidentiality of his personal data, to comply with the rules of the digital culture of communication on the network, to adequately evaluate a variety of media content, etc. (Starichenko, 2020).

Based on these criteria, we summarize the characteristics of digital literacy as a set of the following skills (Podkolzina, Gladilin, et al., 2021):

1.The ability to find information and critically evaluate its reliability and integrity.

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2.Use the digital space for lifelong learning

3.Ability to adapt to rapidly changing digital resources and gadgets

4.The ability to select those digital opportunities that best fit the individual educational trajectory

5.Ability to use digital resources safely.

Here, perhaps, is the main list of skills that reflect the level of digital literacy required today; the task of the modern educational system is to provide conditions for its development within the framework of the educational process. The formation of digital literacy begins in the middle level of a general education school, and one of the fundamental factors in its development is a comprehensive, integrative approach that reflects the unity of the educational and personal space for self-development and self-education of the subjects of the educational process (Podkolzina, Taranova, et al., 2021). Today, the ability to use digital technologies for educational (and everyday) purposes is a basic skill. It is noteworthy that there are already studies proving that the presence of developed digital literacy directly correlates with the successful formation of other competencies of students. Logically, this is a completely natural connection (Podkolzina, Belousov, et al., 2021): in the context of universal digitalization and a rapid increase in information flows, the ability to quickly find the necessary information, adequately evaluate it and choose the most relevant and reliable one, undoubtedly has a positive effect on assessing overall learning outcomes.

Another aspect that needs to be touched upon within the framework of the presented problems is the multidimensionality and ambiguity of the process of digitalization of education. On the one hand, the need to replace obsolete educational technologies is obvious (Podkolzina, Gladilin, et al., 2021): the future lies with digital, and we must take progressive steps towards an open global space, following innovations.

On the other hand, today it is still difficult to make predictions about the consequences of total digitalization, but significant risks have already emerged today: the gradual loss of social skills, dehumanization, problems of human self-identification, manipulation of his consciousness. All this requires a deep analysis and a thoughtful approach to the process (Uchitelskaya Gazeta, 2018).

In a word, the task of the educational environment is to take a position that requires a thoughtful and very cautious approach to the total “digitization” of the educational process. With all the indisputable advantages and prospects of digitalization (accessibility, both territorial and temporal, freedom to choose methods and forms of education, unlimited educational content, saving time and money, etc.), the negative aspects of digital forms of education are also clearly indicated (Elbuzdukaeva et al., 2019). Among them: a decrease in social interactions, the risk of the formation of functional illiteracy due to the development of more primitive competencies compared to traditional education, a decrease in creativity and the possibility of intellectual search through live communication, the dominance of the scale and volume of the studied material over actually learned meanings, a negative impact on the health of students, the abolition of the educational function of the educational process, when in the dyad “student-mentor” through the possibility of open interaction, the spiritual principles and moral guidelines of the younger generation were formed (Ustyuzhanina & Evsukov, 2018).

We could continue this list of existing risks, this is only the first thing that comes to mind, although this is already enough to understand that the digital transformation of Russian education has a

lot of controversial points, which cannot be assessed “in the moment”, as, however, difficult to predict their consequences time will tell.

7. Conclusion

Summing up, we note that the goals and objectives of the digitalization of Russian education today have not lost their relevance and the process is developing at a rapid pace (Sugaipova & Gapurov, 2018). Undoubtedly, the domestic education system has great prospects and success in implementing the concept of the digital economy, building appropriate strategies for the development and formation of a society of a new, digital format. However, we note all the ambiguity of the existing successes; there is a high probability of getting in the near future a generation of unspiritual, devoid of a creative component, not physically strong and functionally illiterate people. Is this the goal that is designated by the global community, and to which you need to go, not looking back at the experience and traditions of one of the best education systems - the Russian one.

The authors raise the question: does society need such innovations that lead to a certain intellectual degradation - when in an endless information flow a person is not able to read serious books, process and analyze texts, loses the ability to think logically, changes live communication and emotions to virtual. Be that as it may, this question is ambiguous and it remains relevant and debatable. It is unequivocal that today humanity is at the stage of a radical change in the formats of the entire familiar socio-cultural space. On this path, a lot of transformations await us, the results of which are difficult to predict and they have yet to be comprehended.

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