

Analysis of Modern Trends in the Development of the Domestic Education System

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Keywords: Educational Technologies, Education System, Development Strategies, Modernization, Digitalization, Information Technologies, Generation Z.

Abstract: This article is dedicated to one of the topical issues of modern education - the peculiarities of the development of the educational system in Russia in the light of global changes. Despite a fairly large number of scientific works on the described problem, there is a need for a comprehensive analysis and generalization of the main modern trends and problems of higher and general education. The urgency of the research is determined by the data of a critical analysis of the main documents, concepts, national projects in order to determine the strategic trajectory of the development of education. An analysis of the results of the PISA and TIMSS monitoring on the assessment of educational achievements, including in the field of reading and working with mathematical and natural science material, as well as studies that characterize the current state of affairs in secondary and higher educational institutions is presented. Interpretation of the data allows us to make an assumption about the possible reasons for the loss of the position of a modern specialist in the employment market. Particular attention is given to the formulation of new tasks for education, which radically change all levels of general and higher professional education. There is provided a brief description of a modern student - a representative of generation Z - and the features of working with him. The question of the need to introduce professional standards for secondary and higher educational institutions, the national system of teacher growth, which determine their professional level, was raised. The authors consider the role of digital technologies in the formation of a specialist of the XXI century as the main direction of further innovations and development and conclude that only the intensification of the integration of information and communication, digital, and mobile technologies will help to overcome the isolation and conservatism of domestic education.

1 INTRODUCTION

The globalizing world of socio-economic changes is becoming a driving factor in the transformation processes in the education system. The concept of "trend" is defined as aspiration, course of development, innovation, which will become the mainstream in the near future. It is known that a certain type or a new model of education is formed under the influence of consistent patterns and laws that are established between the elements of society, which includes the education system, i.e. socio-cultural patterns (patterns of the general level) that characterize a certain type of social structure, determine the nature of pedagogical laws, also manifested in the educational process. The main

socio-cultural determinants can be considered a change in the essence of the social pattern, the transition to the era of the digital economy, which dramatically affects the social pattern, including the education system. Intellectual capital is becoming a key element of human capital, i.e. the ability to generate and master innovations, a kind of "economic projection of creative activity, which is crucial for the modernization of the economy and the transition to new technological paradigms" (Mun'e, 2018)

Education should ensure the development of society within the scope of social and economic mobility of people, the development of modern technologies, the training of highly qualified professional personnel that ensure competitiveness in the world market. At present, there is a significant

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number of works dedicated to various aspects of reforming the educational system in Russia - the problems of modernization of education are reflected in the works of A. G. Asmolov, B. M. Boguslavsky, V. I. Zagvyazinsky, E. F. Zeer, G. L. Tulchinsky and others. However, in spite of the methodological procedure, innovations are developing so rapidly that it is necessary to constantly monitor and assess the prospects for the development of the education system.

2 RESEARCH METHODOLOGY

The objectives of this research are to analyze government documents, concepts and regulations in order to identify the main modern trends in the development of the system of secondary general and higher education.

The main document defining the strategy of state policy in education is the Decree of the President of the Russian Federation "On National Goals and Strategic Objectives of the Development of the Russian Federation for the Period Up to 2024" dated May 7, 2018 No. 204.

The following tasks are set as priorities:

- introduction of new methods of education and upbringing, educational technologies;
- identification, development of abilities, support of talented children;
- creation of a digital environment that ensures high quality and availability of education;
- formation of a system for updating professional knowledge and acquisition of new professional skills, including mastering competencies in the field of the digital economy

The main provisions of the Decree became the basis of modern concepts and projects, especially, the concept of the national project "Development of Education", the cross-cutting methods of which are:

- digital technologies;
- skills competitions;
- communities;
- apprenticeship;
- volunteering.

The authors of "Twelve Solutions for New Education" identify four core aspects contributing to the implementation of major projects for the development of education:

- the quality of human potential (support for talented children, digital, legal, financial basic knowledge, coverage of the adult population in the implementation of educational programs);

- technological modernization (scientific studies in universities, contributing to the innovative development of regions, the role of postgraduate education in the formation of high-tech competencies);
- social sustainability (social mobility, equal opportunities for all);
- digital transformation (providing an individual educational trajectory for everyone) (Mun'e, 2018).

In this way, in the above examples, the main approaches to the transformation of education are traced: anthropocentric, information-activity, competence-based and cultural, and the fundamental ideas are collaboration, mobility, continuous self-education, digitalization.

3 RESEARCH RESULTS

The main educational trend is the improvement of the education quality system, the improvement of which in the current context is possible only on the basis of the intensification of innovative processes, ensuring the integration of educational, scientific and practical activities. These changes will solve the problem of the closed nature of the education system and learning technologies (Zeer, 2015) According to the results of international monitoring studies in the first stage of education, Russia makes the top 5 best countries in the ratings of PiR&S, TIMSS (P. is an international study of the quality of reading and text comprehension, TIMSS - international monitoring study of the quality of school mathematics and science education). The secondary school is ranked 32nd in the PISA (Programme for International Student Assessment). Twenty-four Russian universities, according to the THE (Times Higher Education) ranking, make up 5% of the best universities in the world. In such event, it is noted that the basis of high ratings is theoretical training, and practical competencies are developed to a lesser degree. Education is losing its position in the labor market (Insead Global Talen Competitiveness Index 2017).

Today, the socio-economic development of society in the period of informatization, globalization, sets new tasks for education and requires a radical change in the entire educational system at the present time. To implement the tasks set, the entire chain must function successfully: preschool education - school - university - postgraduate education. As the primary goals - to become one of the 10 leading countries in the world in terms of the quality of

general education (Decree of the President of the Russian Federation "On National Goals and Strategic Objectives of the Development of the Russian Federation for the Period Up to 2024" dated May 7, 2018. No. 204).

Educational policy must meet the needs of the economic, social, cultural development of society, with the aim of competitive strength in the world labor market. According to our scientists, for the implementation of projects of the education system, it is necessary to lay the foundation already at an early age from 3 to 6 years, which will significantly reduce the risks of school failure, directly affecting the social and economic development of society.

In accordance with the law "On Education in the Russian Federation", a new level of general education has been introduced - preschool education. The Federal State Educational Standard has been developed, which provides for mandatory preparation for school.

The high level of quality of Russian education and the appearance of Russian universities in the ratings of world leading universities is an important task that must be carried out from the legislative, financial, organizational and pedagogical points of view.

Among all the changes, the leading position is taken by the digitalization of education, which is characterized as a revolution of the 21st century and is compared with the appearance of the printed book and the mass school in the past centuries. The term "digitalization" is used today so often and in regard to all spheres of human life that the fact of the transition to a digital society is out of question. The Russian state is known to be the main initiator of innovative processes of digital transformation of society and economy. This is proved by the program "Digital Economy of the Russian Federation" (Order of the Government of the Russian Federation dated July 28, 2017 No. 1632-r), aimed at "creating conditions for the development of a knowledge society in the Russian Federation, improving the well-being and quality of life of citizens of our country by increasing the availability of the quality of goods and services produced in the digital economy using modern digital technologies, raising awareness and digital literacy, improving the availability and quality of public services for citizens, as well as security within the country and abroad". In 2016, the federal project "Modern Digital Educational Environment in the Russian Federation" was launched, approved by the Government of the Russian Federation as part of the implementation of the government program "Development of Education" for 2013–2020. Within this project, it is planned to "modernize the system of

education and vocational training, bring educational programs in line with the needs of the digital economy, widely introduce digital tools for educational activities and integrate them into the information environment, provide an opportunity for citizens to study according to an individual education plan throughout their lives - anytime, anywhere".

The education system should provide society with a confident transition to the digital era, focused on gain in productivity, new types of work, human needs, which is possible by including all segments of the population in the learning process, building individual learning courses, managing their own learning outcomes, virtual and augmented reality. Digital resources used today in daily human activities make it possible to overcome the barriers of traditional learning: the pace of mastering the program, the choice of a teacher, forms and methods of teaching.

In education, digitalization is aimed at ensuring the continuity of the learning process, the so-called life-long-learning, as well as its individualization based on advanced-learning technologies. There is no established definition of this term yet, but it includes the use of big data in teaching about the process of mastering individual disciplines by individual students and in many respects automatic adaptation of the educational process based on them; the use of virtualization, augmented reality and cloud computing and many other technologies.

The term "digitalization" (in the English version - digitization, and sometimes digitalization) of the economy and society is often understood as transformation in the socio-economic sphere by way of the mass introduction of digital technologies for the search, creation, processing, exchange and transmission of information. In various areas of the economy, the concepts of "digital ecosystem", "digital environment", "digital community", "digital economy", "digitalization of education" are being introduced. The digitalization of education leads to changes in the labor market, in educational standards, identifying needs in the formation of new competencies of the population and is focused on reorganizing the educational process, rethinking the role of the teacher.

What should be a modern school, school in the period of digitalization?

New digital technologies are making substantial changes in the content of education, with innovations affecting all levels of education. In preschool institutions, interactive didactic materials are used to develop logic, thinking, and intelligence. Companies developing a digital educational environment offer

teachers to use digital training packages that supplement or completely replace textbooks, as well as electronic educational environments and spaces. So, a differentiated approach is implemented to work with students of different levels of training or students with disabilities (health limitations).

Educational technologies in higher education are a complex of scientific and engineering knowledge, various methods that are used to create, collect, transfer, store and process information in the subject area of higher education. The effectiveness of the implementation of educational programs directly depends on the extent of adoption of the relevant information and communication technologies.

Experts from the educational development center of the Skolkovo business school provide such data in their review of the NMC Horizon report. Upon completion of the courses, having passed the final exam, students receive certificates. In Russia, similar courses can be taken on the national platform of open education (NPOE) of the Higher School of Economics with a certificate. Students have the opportunity to diversify their education by choosing a course on their own.

G. L. Tul'chinskij in his research (Tul'chinskij, 2011) asks the question: do we need diplomas? The employer needs specific competencies that can be acquired in various courses and with experience. When recruiting permanent staff, the employer pays close attention not to diplomas, but to a certified portfolio, which will play a crucial part in hiring.

The review of the NMC Horizon report "Higher Education - 2017" notes that a key factor in the success of any university is the availability of such advanced technological solutions as online education, combined and mobile learning. Today, they often talk about online learning and combined learning, which allows us to completely reformat the educational process at the university. According to the results of the Class Central study in 2016, educational platforms were represented by more than 700 universities, 6,850 courses, and 58 million students were trained. Without the integration of these approaches, a higher educational institution has no chance for further development and cannot produce competitive specialists on the labor market. Each university attempts to optimize its work by transferring it to the "digital" mode, but "competition is certainly the only mechanism that checks the viability of educational organizations, determines the direction, structure and quality of their activities" (Lyah, 2017).

An important basis for changing the content of education is the student's personality. Without

knowing the main features of modern students, it is impossible to develop and implement programs for their education, upbringing and socialization. Let us present a brief description of the modern generation, generation "Z" or "digital generation" according to the theory of generations developed in the 90s by American scientists Neil Howe (Howe, 1991) and William Strauss. Modern children are a generation that grew up in the Internet age, virtual communication and computer games, they are pragmatic and very practical. The property of "multitasking" inherent in them, makes it possible to simultaneously solve several problems, setting short-term goals. Children of generation Z are distinguished by "clip way of thinking", shallow memory and hyperactivity (Sapa, 2014). The search for methods of increasing motivation, enhancing cognitive interest is becoming the subject of modern research of teachers and psychologists.

One of the distinctive features of the representatives of the "digital generation" is the global influence of ICT (information and communication technologies), since they receive the main information from the Internet. Having fluent networking skills, they create websites, electronic presentations, and flash films. The advantages of the new generation of students are fast attentional shifting, good visual memory, a wide range of interests, and ease of establishing contacts with virtual friends. Progressing in certain areas, modern children demonstrate low concentration of attention, absent-mindedness, problems of interaction with peers.

Another side of the educational process is no less important - the teacher. Personnel questions are acute: who and how will teach modern children? Today, a teacher is not a transmitter of knowledge, but a "translator" whose main task is to form and constantly update competencies. In 2020, new professional standards come into force, the need to develop which is dictated by time: inclusive education, working with gifted children, teaching Russian as a foreign language require the formation of new teacher competencies.

To assess the quality of the work of teachers, the career development of a teacher is prescribed, aimed, in particular, at establishing for pedagogical workers the levels of proficiency in professional competencies, confirmed by the results of certification, as well as taking into account the opinions of graduates of general education institutions, but not earlier than four years after they graduate from such institutions.

In accordance with the order of the Ministry of Education and Science of Russia dated 26.07.2017 No. 703 "On the approval of the action plan ("Road Map"), the implementation of the NSTG (National System of Teacher Growth) is expected until 2020. The National System of Teacher Growth is a new form of teacher certification that allows you to determine their professional level (Kupriyanova, 2017).

4 DISCUSSION OF RESULTS

In the light of the main trends in the development of the education system, such as digitalization, discussion of qualitative new characteristics of a new type of student, the emergence of a system of teacher growth, it seems relevant to address one of the most acute problems of quality and development of education - the level of teacher competence, in particular in the field of ICT.

As practice shows, teachers do not actively use ICT in the educational process, and this is due to a number of objective reasons:

- not all teachers are psychologically ready to use ICT in the educational process;
- insufficient number of electronic means that can adequately solve the pedagogical tasks of a teacher when studying a specific topic;
- lack of clear methodological recommendations on the use of electronic teaching tools available on the domestic market;
- low level of proficiency in software tools for creating their own electronic learning tools (presentations, electronic textbooks, simulators, etc.);
- a teacher's time limit for creating their own electronic didactic material, as well as for studying, developing and implementing new computer teaching methods.

However, one of the main reasons that prevents teachers from effectively using information and communication technologies in professional and pedagogical activities is the insufficient level of their readiness to use these technologies.

According to the survey, active implementation is hindered by the insufficient level of ICT competence of the teacher.

Level 1: I have an idea of what ICT is, but did not master it - 0%;

Level 2: I am interested in ICT, learning to use it - 34%;

Level 3: I know what ICT is, I can apply it in my practice - 54%;

Level 4: I know ICT, I constantly use it in my work - 12%;

Level 5: I know ICT, constantly improve the system of own developed tasks based on ICT - 0%;

Level 6: ICT - the basis of all the courses I develop - 0%.

MOOCs (massive open online courses) that have taken over the Western world are becoming a definite educational trend. Presented in many languages of the world, free courses from leading universities in the USA, Europe and other countries offer to improve their qualifications in various fields: biology, psychology, higher mathematics, teaching techniques of certain disciplines. According to the survey, 77% of teachers would like to complete such courses to improve their qualifications. The desire for distance learning indicates the need for a qualitative reformation of the organization of the system of additional professional education.

In the modern educational paradigm, the emphasis is on the transition from traditional to innovative or digital education: electronic universities are being created, and virtual educational spaces and environments are being developed in classical universities. The majority of respondents (77%) indicated that the educational institution has a virtual educational environment (VEE). The respondents think it expedient to use the environment at all stages of education (55%), preferring independent work (33%). Unfortunately, the full potential of VEE is not used, since according to the respondents, less than 50% of independent work should be performed in a virtual educational environment - 53% of the respondents' answers. A tribute to traditions is kept, which is expressed in the refusal of a complete transition to electronic teaching aids. 88% of teachers try to combine printed teaching materials with partial involvement of electronic educational resources. 88% of teachers admit that classes with the use of ICT make up less than half of the classroom hours. It is worth mentioning that another important problem remains the issue of technical equipment of classrooms. According to the survey, Internet access is available only in computer classes (56%) or in a limited number of classrooms (44%). When asked about the demonstration of audio and video materials, 44% of respondents answered that they use a school laptop, although 24% of respondents use their personal PC. The lack of technical conditions for integrating ICT leads either to a complete rejection of their use, or to the search for other forms of work. Mobile learning can be one of the solutions to the problem: the majority of students use smartphones with Internet access, and the teaching community has

a "positive" (56%) and "generally positive" (22%) attitude towards the integration of m-learning into education.

Researchers identify a number of characteristics inherent only in computer-based learning: interactivity (building a dialogue with the user), multimedia (a variety of means of information presentation (audio, video, graphic, etc.), modeling (modeling real objects and processes with the aim of studying them), communication (focus on interaction), productivity (reducing routine work by automating many processes). These are in earnest new tools for the teacher and the student, capable of repeatedly intensifying the learning process, adjusting the educational process to the individual needs of the student. However, these tools, which are unconditionally positive for the educational process, remain not requested or not fully in demand. As our small study has shown, and as many education specialists say, teachers use ICT very unevenly and unsystematically. A significant part of them do not yet possess computer literacy to the full extent. The rest either have a superficial understanding of the capabilities of information technology, or do not know which of the available technologies are relevant for use in solving various pedagogical problems.

5 CONCLUSION

This research attempts to describe the main trends in the development of the national education system. First, the main trend is the process of modernization, a term that has replaced strategic development and has taken strong positions in the pedagogy of the 21st century (Boguslavskij, 2014). Today, a new education system is being created, which allows students to develop together with the latest technologies, navigate the information field, be able to work in a team and various social groups, set tasks and be able to solve them, be proactive and predict the situation.

Second, the emergence of roadmaps and the focus on developing skills in the 21st century can be combined into a practice-oriented trend and the implementation of an anthropocentric approach. The need for specialists motivated for self-development and self-education becomes important. According to G. L. Tulchinsky, "a new educational environment is being formed," drawn "over the existing forms of education, instruction, upbringing, training and retraining of personnel that look like under-painting" (Howe, 1991).

Third, the integration of information technologies has led to the trend of digitalization of education. At the moment, domestic higher educational institutions are developing individual information environments, some are entering the world scene, providing mass open online courses for a wide range of users.

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