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ESTIMATION OF THE EFFICIENCY OF USE DIGITAL RESOURCES IN ELEMENTARY SCHOOL IN ASTRAKHAN REGION

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ABSTRACT

The study is devoted to the problem of digitalization of primary general education. The goal of digitalization in primary education is seen in its optimal adaptation to the successful solution of the intended pedagogical problems. The authors of the article clarify the definition of the concept of "digitalization of education", reveal the essence of the concept of "digitalization of primary education", provide substantiation of the theoretical and practical aspects of the topic. The article touches upon some aspects of the implementation into the practice of educational institutions of the main ideas of the Federal project "Digital Educational Environment". Digitalization of education covers all subjects of the educational process: students, teachers, parents of minor children. The pedagogical competence of primary school teachers in the use of digital education technologies is critical. The authors of the article describe the options for using digital resources in primary school and investigate the level of digital information technology skills of primary education teachers, as well as their use of digital resources in the educational process of primary school.

Keywords: digitalization, digitalization of education, digitalization of primary education, the goal of digitalization in education, the essence of digitalization of primary school, digital technologies; digital educational resources, digital literacy of teachers, digital competence of parents, subjects of the educational process: students, teachers, parents; optimization of the educational process of primary school.

1. STATEMENT OF THE PROBLEM

Digitalization as a planetary phenomenon has embraced all formats of human scientific and social life. The organization of the educational process of our country in the digital age is a key resource for the digitalization of public life in Russia. The digitalization of education is one of the components of the fourth industrial revolution [1].

The goal of digitalization in education is seen in its optimal implementation from the standpoint of an effective solution to the assigned tasks. One of which, in section No. 5 of the Decree of the President of the Russian Federation of 05/07/2018 No. 204 "On national goals and strategic objectives of the development of the Russian Federation for the period up to 2024", is devoted to education issues. In particular, it is said that the creation of a modern and safe digital educational environment ensures high quality and availability of education of all types and levels [2].

In connection with the intensification of the digitalization process in education, the emergence of the idea of creating a new didactic concept became timely. It's about digital didactics. The developers of the concept of digital didactics believe that digitalization will lead the educational process "based on the construction of individual educational routes and continuous monitoring of the educational and personal success of students to:

● full individualization;

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- expanding the range of various group (team) forms of organizing educational activities;

- ensuring the achievement of the specified educational results;

- increasing the pedagogical arsenal for teaching people with disabilities;

- building a system of continuous diagnostic and formative assessment based on instant feedback during the execution of educational tasks;

- liberation of the teacher from routine operations" [3].

In the format of the priority national project "Education" for the period 2019-2024, the federal project "Digital educational environment" is being introduced into the practice of educational institutions. Its goal is "To create conditions for the introduction by 2024 of a modern and safe digital educational environment that ensures the formation of value for self-development and self-education among students of educational institutions of all types and levels, by updating the information and communication infrastructure, training personnel, creating a federal digital platform" [4].

At the same time, in the scientific literature and the media, when the problem of digitalization of education is actualized, the meaning of this term is also discussed and to what extent this process can be implemented in the conditions of a domestic, modern general education school, in particular its primary level?

2. LITERATURE REVIEW

The digitalization of education is being actively studied throughout the modern world. It is stated that the modern educational potential of digital technologies "has changed the creation of educational content for children" (Zosh J.M., Hirsh-Pasek K., Michnick Golinkoff R., Parish-Morris). The social context of children's interaction with digital gaming technologies is indicated if parents and guardians are involved in games (Scott F.L.). Foreign authors A. Hansen [11] and L. Ilomaki, M. Lakala [13] note the importance of digitalization of schoolchildren's education, expanding the range of various educational digital means and equipment, training and involving parents in the control of distance learning. The authors J. Bird, S. Edwards [12] investigated the problem of the digital educational space.

In the process of studying the problem of digitalization of primary general education, we found out that the concept of "digitalization" is interpreted as "the transformation of information into digital form. A more technological definition: digital transmission of data encoded in discrete signal pulses" [5].

After analyzing the modern information and communication technologies used in educational process, E.I. Apolskikh, M.V. Afonina, V.N. Podkovyrov and D.P. Tevs identified the following types of educational resources: "informational; electronic; digital".

Electronic and digital are also components of information resources. Thus, according to this classification, information resources include: "printed publications; cartographic objects on a printed basis; electronic educational resources (EER); digital educational resources (CDR); Internet resources" [10].

E.V. Fabrikantova and E.E. Polyanskaya classified digital educational resources for educational purposes on various grounds:

- on information and content support of the educational process (information sources, information tools);

- by the nature of access to information (network, disks, etc.);

- for educational and methodological functions;

- by type of information;

- by the homogeneity and scale of the problem field;

- by type of educational activity "[6].

Thus, on the basis of the presented provisions, projects and classifications, the following can be formulated.

The digitalization of education is the use of digital information resources in educational and educational activities, based on the presentation of educational information, as well as modern mechanisms for its storage and processing, which contributes to improving the quality of the educational process and its management.

Digitalization of education covers all subjects of the educational process: students, teachers, parents of minor children.

Foreign (M. Bond, V.I. Marin, C. Dolch, S. Bedenlier, O. Zamacki-Richter) [7] and domestic (G.U. Soldatova, E. Rasskazova and others) authors [8]. The definition of such a concept as "digital literacy" (A. List) [13] is given, the components of digital literacy are identified (M. Leaning) [15].

All researchers are unequivocally convinced that the pedagogical competence of teachers in the use of digital educational technologies is critical.

Let's consider the essence of digitalization of elementary school as the first stage of general education, which involves the use and implementation in the pedagogical process:

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- artificial intelligence (AI) - a new informational and interactive tool as a teacher's assistant;

- digital portfolio of schoolchildren;

- digital portfolio of teachers;

- online courses instead of textbooks or in parallel with them;

- interactive equipment (multimedia board, educational interactive floor Magium for first graders, etc.);

- library of digital educational content;

- "digital organizer" for planning training;

- a digital assistant for parents, a kind of channel for interaction between school and parents.

According to the content of the Federal Project of the Ministry of Education of the Russian Federation "Digital Educational Environment", primary schools will have various content management devices. It is necessary to highlight the automated workplace of the teacher, equipped, for example, with a laptop. Such devices include a school server, computer labs, and devices for playing content in the classroom - an interactive panel, a TV with the Smart TV function, a projector with a magnetic marker surface, IP and web cameras so that younger students can connect to lessons, both during illness and while at sports, creative or other training camps.

In the period until 2024, it is planned to update the equipment in 32,863 schools in the Russian Federation. In our country, such global updates are taking place for the first time, according to Pavel Kuzmin, Director of the Department of Digital Transformation and Big Data of the Ministry of Education of the Russian Federation, speaking at the online conference TAdviser IT Government DAY 2021 [9].

Thus, the digitalization of primary education will contribute to the optimization of all aspects of the educational process:

- junior schoolchildren will implement digital content for their personalized development, regardless of location and social status;

- teachers will use modern technologies to organize an interactive educational process and automated checking of homework assignments, electronic timetable and workflow;

- parents will successfully interact with the school, significantly reducing the cost of the child's education.

3. RESEARCH METHODS

The purpose and objectives of our study is to clarify the definition of the concept of "digitalization of education", disclose the essence of the concept of "digitalization of primary education", substantiate the theoretical and practical aspects of the topic, study the efficiency of using digital resources in primary schools and identify the levels of digital literacy of primary school teachers.

In accordance with the set goal and objectives of our research, we used general scientific methods: analysis of scientific literature, measurement, questioning, analysis of results, description, expert assessment.

The analysis of scientific literature made it possible to identify the essence and characteristic features of the digitalization of primary education.

Measurement as a scientific method contributed to the implementation of actions performed when working with primary school teachers in order to find the percentage of the proposed questions during the questionnaire.

During the survey, 66 teachers were interviewed using specially designed questionnaires. Questionnaires were developed for primary school teachers to identify the level of proficiency and use of digital technologies in work with younger students and parents. In particular, the first part of the questions concerned the frequency of the use of digital information technologies and resources in the professional activities of teachers. The second part of the questionnaire concerns the organization of distance learning for younger students. The third part of the questions identified the level of information literacy of teachers.

The analysis of the results obtained helped to identify the level of proficiency (not possession) of teachers with sufficient competence in the use of digital technologies in professional educational activities.

The description of the results obtained is presented as a percentage of the number of primary school teachers surveyed in the format of their use of digital products.

4. RESULTS OF THE STUDY

Teachers' possession of digital information technologies and the use of digital resources in the educational process of primary school helps to carry out:

- transition from an explanatory-illustrative learning process to an activity-based one;

- inclusion of a variety of methods and organizational forms of training, including distance learning;

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- designing individual educational routes in accordance with the capabilities and educational needs of younger students;

- stimulating successful learning.

A survey of primary school teachers in the city of Astrakhan with a sample of 66 people showed an insufficient level of knowledge and use of digital technologies by teachers in working with primary schoolchildren and parents.

The first part of the questions concerned the frequency of use of digital information technologies and resources in the professional activities of teachers.

To the question "Did teachers use digital educational resources before quarantine in the classroom?" 82% of teachers answered that they did, 18% gave a negative answer.

When answering the question: "Do they continue to use digital resources after quarantine" - 73% of primary school teachers answered "Yes" - they do, and 27% - "No".

Having asked teachers to name educational platforms or Internet portals that they often visit, we stated that only 45% of respondents use them in the preparation and organization of educational activities. At the same time, such digital resources as "Russian Electronic School" (33%), "Uchi.ru" (25%), "YaKlass" (25%), as well as "Nachalka.info" (17%) are most often noted. We recorded the results obtained graphically by diagram 1.

Teacher survey results

Diagram 1. Results of the survey of teachers "What digital resources do you use in your work?"

The second part of the questionnaire concerns the organization of distance learning for younger students.

We asked primary school teachers to name the reasons that, in their opinion, made it difficult to switch to a remote mode of work. Many indicated that not all students have the opportunity to work quickly in remote mode due to the lack of high speed Internet (77%), as well as the lack of Internet access for some students, which is noted by 47% of teachers. 39% of the teachers surveyed noted that when choosing a platform for classes with students, they had difficulties with its accessibility, and 23% expressed their wishes to supplement the technical

equipment with webcams and headphones. Thus, 42% of teachers answered that they use school equipment to conduct classes.

In particular, teachers note that problems arose during video lessons: "low Internet speed" or "interruptions in the platform's work due to overloads" (44%); "Not all junior schoolchildren, or parents, can cope with the connection to video broadcasting," 64% noted

The third part of the questions identified the level of information literacy of teachers.

In the course of the questionnaire survey, we found out "what digital educational resources teachers use". The most popular turned out to be: "Uchi.ru" and "Russian electronic school" - 82%, in second place (38%) - "Yandex. Textbook", then - "Internet lesson" (32%), "YaKlass" (24 %), "Knowledge Cloud" (18%), "Foxford" (12%). Also, teachers use Skype (29%) when organizing the educational process. At the same time, they practically do not use or do not know about such resources:

- "LogicLike",

- "IQsha",

- "Mobile e-education (MEE),

- "1C: School Online".

Answering the question - "From what sources did they learn information about digital educational platforms?" - the majority referred to what their colleagues advised them (39%) or "the school has centralized access to educational platforms" (34%), 27% - independently look for information about available platforms. We recorded the results obtained graphically by diagram 2.
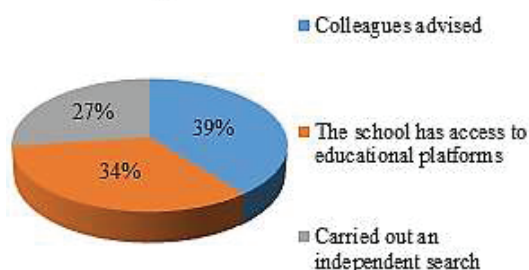

Teacher survey results

Diagram 2. Results of the survey of teachers "Where did primary school teachers learn about digital education platforms from?"

We have to state that only 46% of primary school teachers conducted video lessons during quarantine, and only 23% continue to use them to this day.

Analysis of the respondents' answers showed that teachers use digital educational resources (CDR) or

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electronic educational resources (EER) in the learning process. However, these educational technologies are used mainly for presenting educational information and consolidating material, practicing skills and abilities (64%). Unfortunately, we have to admit that primary school teachers do not use digital educational resources in the process of independent work of students, as well as for the diagnosis and assessment of knowledge. At the same time, the majority of teachers note that they have little experience in using digital information technologies (56%), 29% have minimal experience. Thus, 15% assume that they have sufficient experience, but none of the teachers began to claim that he is an expert on the use of digital educational centers and constantly uses them in his professional activities. The obtained indicators are reflected in diagram 3.

Diagram 3. Results of the survey of teachers "How do primary school teachers assess the level of proficiency in digital information technologies?"

When answering the question: "What digital tools in educational activities do you use: Kahoot; Mentimer; Miro; Zoom? " 65% noted Zoom, teachers did not know about other tools.

Thus, the results of the study showed that teachers do not have sufficient competence in the use of digital technologies in professional educational activities. Therefore, the digitalization of primary education presupposes, first of all, the pedagogical competence of teachers in the use of digital educational technologies and resources, since without digital technologies, we will not be able to organize modern education for the younger generation, generation A (alpha).

CONCLUSION

Summarizing the above, it should be noted that the digitalization of primary education is the inclusion of digital information resources in educational and educational activities based on the presentation of educational information, as well as modern technologies for its storage and processing, which can significantly improve the quality of the educational process.

As a result of the study, it was found that primary school teachers do not have enough knowledge of

information technologies and digital resources in the educational process. At the same time, most teachers note that they have little experience in using digital information technologies. Therefore, it is necessary to increase the level of digital competence of primary school teachers in the framework of additional education and refresher courses.

The digitalization of primary education will help optimize all aspects of the educational process. In its format, digital content will be implemented for the personalized development of primary schoolchildren, regardless of location and social status. In turn, teachers will use modern digital technologies to organize an interactive educational process, and parents will be able to more effectively participate in the educational activities of their children.

AUTHOR'S CONTRIBUTION

Alentyeva Elena - development of questionnaires to identify the level of teachers' proficiency in the use of digital technologies in professional educational activities and analysis of empirical research;

Korenyakina Tatyana - analysis of scientific literature to identify the essence and characteristic features of digitalization of education;

Vedenkina Marina - analysis of the problem and clarification of the concept of digitalization in primary general education;

Semenischeva Marina - conducting an empirical study.

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