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DIGITAL PEDAGOGY: TRENDS OF THE MODERN SCHOOL

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Abstract

At the present stage of development of society, digital technologies play a significant role in all areas of life, production, social and other activities. The sphere of education is one of the leading social institutions contributing to the formation of personality and the training of competent specialists capable of ensuring the development of society, the country, its economy, science, etc. This article discusses the issues of digital pedagogy, the features of its organization in modern socio-economic conditions, the prospects for the development of digital educational technologies. The digitalization of education is a new industry and a requirement within the modernization of the education and training system for schoolchildren. The article presents not only the results of an empirical study of the current state of implementation of the principles of digital pedagogy in schools, but also the main directions and examples of solving this problem at the level of Russian and foreign educational institutions. The prospects for the massive introduction of digital educational resources into a modern school are analyzed, the main methodological and didactic methods of organizing the digital educational process are proposed, the features of the Russian educational space are indicated, which determine the need to adapt existing technologies to the realities of domestic education.

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1. Introduction

The study is devoted to the problem of the development of digital pedagogy at the present stage of modernization of the educational system. The main objectives of the research were: defining the essence of digital pedagogy; highlighting the potential of digital technologies in the development of the personality of students; description of methods and forms of organizing the pedagogical process in digital format. The use of information technologies in education has been a leading trend in the transformation of the educational environment over the past decades. At the same time, digital literacy in modern educational standards is included in the basic competencies of schoolchildren - as indicators of a successful personality capable of self-realization in the modern world. Meanwhile, more and more studies can be found that describe the difficulties associated with the introduction of digital technologies into the educational environment of the school. Thus, the search for ways and the development of methodological recommendations for the organization of digital education is one of the most pressing problems.

2. Problem Statement

With the introduction of new educational standards, the content of basic education is changing significantly, as well as its tasks, goals, forms, and technologies. The digital space is not only an institution equipped with the latest science and technology. This is a space where each student can create their own personal educational space using innovative ICT technologies. At the same time, skills in working with digital resources cannot be the goal of modern education, they are only a means of achieving results. They allow solving new and current problems. The use of modern information technologies today is one of the conditions and directions for optimizing the educational process, expanding the methods, forms, means and techniques that make it possible to diversify making classes interesting and memorable for students (Boguslavsky, 2020).

The modern school and educational standards at all levels (preschool, general, secondary, higher professional education) require students to be oriented in volumetric information flows, to quickly master the skills of working with information. New information technologies develop the subject, general, personal competence of schoolchildren, allow them to actively exchange information with other participants in the educational process and the global space of the Internet using modern technical means (Skulkin, 2021).

The need, prospects, and expediency of introducing modern schools to digital technologies is confirmed by several deep empirical studies carried out by domestic and foreign scientists, enshrined in state regulatory documents in the field of education (Vainshtein et al., 2019),

Currently, in Russia, innovative programs are gaining priority, the purpose of which is to create a single electronic educational space-platform created because of a few organizational and technical measures that ensure the possibility of implementing a continuous educational process in any socio-economic situation and access to current digital resources from anywhere in the world (Shaikhutdinova, 2021). Today, more and more opportunities for digital technologies and their application are being discovered and studied. The digital communication standard significantly changes the nature of all spheres of human life (Mukhametzyanov, 2019).

Digital technologies are of value in the field of education. They include many educational activities and are associated with many professions. For general education, the most relevant means are those that are designed to organize independent cognitive, constructive, experimental activities of students (Petrishchev, 2021).

Today, the national fund for educational resources allows creating a voluminous, constantly growing collection of digital educational materials freely available on the Internet (Fedoseev, 2015).

The implementation of digital technologies in pedagogical practice based on electronic teaching and methodological materials contributes to the active involvement of students and teachers in the creative activity, ensuring high results and the development of innovative ideas in secondary, general, and additional education (Nooruddin & Yasmin, 2019).

The use of the latest digital technologies in education allows the teacher to make each lesson more fruitful, technological, dynamic, unique, interesting, and productive. Digitalization activates the creative, experimental, research activities of schoolchildren, helps teachers to quickly implement and differentiate the test of students' knowledge, to present educational material in an unusual way. The new training format develops the subject and general competencies of students; promotes creative self-realization and professional growth of teachers (Nguyen & Bui, 2020).

The main pedagogical goals of using digital information technologies at school are the development of the student's personality, including: the development of creative, constructive, and constructive thinking, the development of communication skills; formation of the ability to make extraordinary decisions in difficult situations; improving research skills (Vainshtein et al., 2019).

When using information technologies in teaching, the teacher should strive to realize all the child's potentials: creative, cognitive, personal, moral, socio-communicative, ethical, and aesthetic (Reeves, 2000).

Recently, teachers have been actively creating and implementing pedagogical software that reflects a certain specialty, to a certain extent, they implement the technology of its teaching and create circumstances for the implementation of various types of educational activities. This requires high development of all components of pedagogical competence in the field of information and pedagogical technologies (ICT competence) (Starodubtsev, 2018).

Requirements for ICT competence and digital literacy of a teacher form the basis of modern professional standards in the field of pedagogy and education. They imply the teacher's qualified use of modern digital tools to solve professional problems.

Thus, it becomes necessary to study the current state of the problem in modern schools.

3. Research Questions

This study provides answers to the following questions:

- 1) What is digital pedagogy?
- 2) What is the current state of digitalization of education?
- 3) What are the components of a teacher's digital competence?
- 4) What are the main directions for the development of the digital environment of the school?

4. Purpose of the Study

Systematization of methodological techniques and theoretical provisions in the field of implementation of the concepts of digital pedagogy.

5. Research Methods

The research methodology provides for both a comprehensive theoretical analysis of the problem in literary sources, and an empirical study using questionnaires, conversations, a survey of students and teachers on the frequency and quality of the use of digital resources in the educational process. Also, the level of teachers' proficiency in modern digital technologies was assessed using the methodology "Measuring digital literacy". Tool DIGLIT, which was conducted with teachers in an online format using tasks and keys presented on the Center for Psychometrics and Measurements in Education portal: <https://ioe.hse.ru/monitoring/diglit>. The aim of the study was to analyze the current state of the use of the principles of digital pedagogy in modern schools. A survey and online testing of 100 teachers of the city was carried out, reports, and plans for the organization of educational activities in 5 schools were studied. The processing of the results was carried out using the methods of mathematical statistics in the program SPSS Statistic – 10.

6. Findings

Computers play an increasingly important role in our business, recreational, and educational activities. It is quite obvious that computers are irreplaceable in our daily life. The modern school helps students become information literate at an earlier age than ever before. Computer programs serve students who need an additional task beyond what is presented in the textbooks and taught in the classroom. Much of the research into the effectiveness of digital pedagogy has been conducted over the past twenty years, highlighting the need for both teachers and learners to be information literate (Hazanov, 2020).

Proponents of digital learning programs determine that these educational devices can pave the way for both teachers and learners to benefit and create diversity in the learning environment, which is likely to lead to more effective learning environments. The digital teaching standard is more effective and productive than traditional teaching methods, paving the way for learners to develop their skills more effectively (Delvand & Heidar, 2020).

Based on the data obtained during empirical research, it can be concluded that there is an insufficient level of inclusion of teachers in the process of digitalization of education. So, only 26% of teachers actively use digital teaching tools in the classroom and in extracurricular activities (See Figure 1).

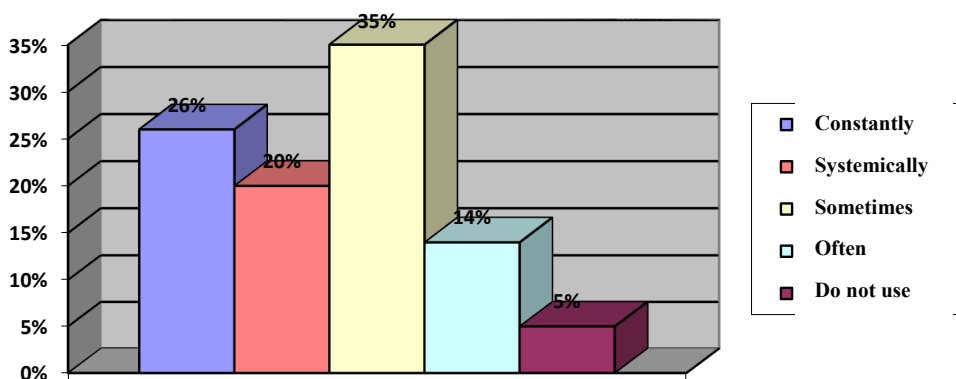


Figure 1. Frequency of use of digital educational technologies by school teachers. Constantly, systemically, sometimes, rarely, not used

At the same time, 46% of teachers demonstrated knowledge of the basics of digital pedagogy, and 32% noted that they have superficial knowledge of these concepts (See Figure 2).

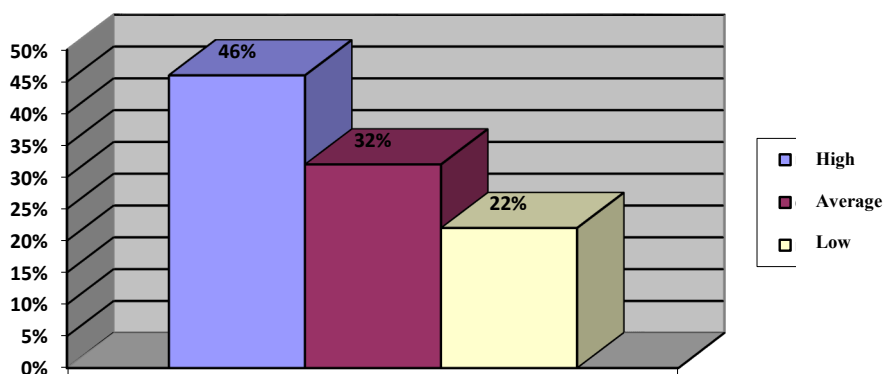


Figure 2. Levels of proficiency of schoolteachers in the principles of digital pedagogy (high, average, low)

Most teachers noted that the main difficulty in implementing the principles of digital education lies in insufficient technical equipment of schools and all participants in the educational process (76%), lack of methodological and didactic support (62%), lack of managerial tools to stimulate teachers to use innovative forms of work (38 %). Other reasons were the following: insufficient level of theoretical knowledge, insufficient proficiency of teachers in the skills of working in the Internet environment, difficulties in mastering the specifics of organizing digital platforms, etc.

Talking about the prospects and benefits of digital pedagogy, many authors note that the learning space of the future (FLS) is a dynamic and technological learning environment that allows teaching and learning using innovative pedagogical methods. However, introducing innovations and technologies into any educational environment, be it K-12 schools or higher education institutions, as you know, is a difficult task (Eyal, 2020).

At the same time, the main directions for optimizing the implementation of digital pedagogy in modern Russian schools are the following:

- development of methodological recommendations for work with digital educational resources;
- development of a model for stimulating and training employees to work in a digital environment by school leaders;
- organization of master classes, trainings, courses for teachers to teach the principles of working with information resources.

The digitalization of education involves the reorganization of all pedagogical and methodological work; development and implementation of new professional requirements for the teacher, changing his position and role in the educational process. In the digital space of the school, the joint interactive activities of teachers and specialists in various fields of knowledge are expanding to improve the level and optimization of teaching content, a pedagogical dialogue of students is established, the use of digital databases is activated and facilitated. At the same time, the Russian school has certain peculiarities of using the media space in educational practice:

... Russian media education tradition relies on several dominant theoretical approaches such as the semiotic, culturological, aesthetic, ethical, sociocultural and critical thinking development conceptions. The study of artistic value of media production, a close link between the aesthetic approach with spiritual and moral education of the rising generation, reliance on children's creative skills have provided the basis for many media education models realized in contemporary Russia. (Chelysheva, 2017, p. 3)

One of the main trends in modern education is the network activity of all training participants, the use of social networks as educational resources, interactive master classes and trainings. The characteristic features of digital education are flexibility, mobility, adaptability, interactivity, focus on active perception of information. So, Datsun (2019) cites a comparative study of the two educational platforms, pointing out that: "SPOCs are more suitable than MOOCs for students with low motivation for learning, yet they also use student motivation tools, such as collaborative and cooperative learning techniques" (p. 178).

7. Conclusion

An analysis of the literature on the problem and generalization of the results of empirical research made it possible to identify the most promising forms of teacher activity:

1. Improving digital literacy of teachers, parents, and students.
2. Professional development through the introduction of technology for project activities, development, and implementation of network projects.
3. Formation of ideas for the modernization of education using digital technologies.
4. Organization of webinars, Internet contests, network professional groups.
5. Development of innovative electronic educational resources.
6. Presentation of experience in digital format at pedagogical conferences.

The result of the activities of a modern digital teacher is new competencies that cannot be developed in the process of traditional education.

Among the main acquisitions, one can single out: a high professional level of digital competence of teachers, the development of new pedagogical technologies and forms of educational work. For example, the organization itself and the general educational activities of students based on electronic, mobile, and blended learning, the use of modern gadgets, educational applications, and programs.

Numerous theoretical and practical studies in the field of informatization and digitalization of education allow asserting that the digital educational environment is the main direction of modernization of education, which makes it possible to achieve the goals of pedagogy and fulfill the needs of society.

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