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Theoretical Basis Of The Use Of Digital Technologies In The Professional Training Of Future Education Teachers

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Abstract: This article analyzes the theoretical foundations of utilizing digital technologies in the professional development of future teachers of pedagogical sciences. It examines the role of digital technologies in contemporary pedagogical practice, their impact on the learning process, potential for enhanced effectiveness, and strategies for fostering digital literacy among prospective teachers.

Keywords: Digital technologies, professional development, pedagogical sciences, future teacher, digital literacy, educational technologies, modern pedagogical practice.

INTRODUCTION. The development of the continuing education system in the 21st century is associated with the active introduction of information and communication technologies into the educational process. Today, in order to increase the effectiveness of the use of information and communication technologies in education, the widespread use of digital technologies is proposed as a key development factor in all aspects of the socio-economic, political, and cultural life of society. The main goal is to create a single global digital educational space based on digital technologies that will improve the quality of continuing education in the 21st century, create equal opportunities for individuals to receive education at all levels and stages.

One of the important aspects is the analysis of the use of digital technologies in the educational process, that is, the introduction of appropriate changes in the methods of improving student knowledge and assessment. It is also important to study the issues of how digital technologies affect the education of students, especially the younger generation, and to study the effectiveness of various approaches aimed at developing digital competence in students, as well as to identify effective methods and tools.

Analysis of literature on the topic. Research work on these issues has been conducted by our country's scientists M.E. Mamarajabov, A.Kh. Makhmudov, F.M. Zakirova, G.R. Hamrayeva and others. In particular, as stated in the dissertation of M.E. Mamarajabov, “The development of the system of assessment of student knowledge, forms and methods of teaching and the self-destructive consequences of digitization are noted: the dismissal of teachers with high professional competencies, but good knowledge of digital competencies, information and screen overload, increased cognitive disorders, a decrease in the capabilities of the educational environment in terms of the formation of interpersonal communication skills. Overcoming the limitations of digitization is carried out by creating an institutional system” [3]

In the scientific works of A.Kh. Makhmudov, he writes that “the future and development prospects of higher education in the transition to a digital society and digital economy are directly related to the processes of digitization. This, in turn, is becoming the basis for the formation of new relationships in society based on digital technologies to science and education”.

In the scientific articles of F.M. Zakirova and G.R. Hamrayeva, the concept of digital competencies is described as a characteristic of the ability of a person (citizen, worker, student) to use information and communication technologies in various conditions (work, leisure, training) in order to increase the efficiency of their activities.

According to Sh.B. Bekchonova's scientific works, in our republic, normative foundations have been created for the creation of educational platforms that allow creating a unified information and

methodological support of disciplines based on foreign educational experiences, individualization of educational processes based on digital technologies, development of distance learning services, and widespread implementation of webinar, online, and "blended learning" technologies. "Further improvement of the continuous education system, increasing quality educational opportunities, and continuing the policy of training highly qualified personnel in accordance with the modern needs of the labor market" were set as a priority task. As a result, pedagogical opportunities have been developed to improve distance learning processes based on digital technologies and establish beneficial scientific and educational relationships with international institutions.

A.Ibragimov's dissertation states that in the conditions of digitalization, there is a need to introduce the concept of "digital didactics" in contrast to traditional didactics. As a result of the analysis of existing experiences, it is possible to generalize and compare "traditional didactics" and "digital didactics" as follows.

In particular, N.Turdiyev, Z.Sangirova, N.Rakhmankulova, and in the countries of the Commonwealth of Independent States (CIS) I.Zimnyaya, Y.N.Bondarenko, I.Y.Ipateva and others were engaged in improving state educational standards based on a competency-based approach. M.Bond, V.I.Marin, C.Dolch, S.Bedenlier, O.Zavatsky-Richter conducted research on the use and perception of digital tools by teachers. The authors emphasize the use of a limited number of digital tools [4].

Research on the use of modern and promising information technologies, with a high level of digital literacy skills and competencies that meet the requirements of social order and a modern information society, and are capable of realizing personal and professional potential in the development of the digital economy, has been conducted by scientists from the CIS countries, such as Beshenkov and Gnatyshina.

The research of Gushchin, Kafidulina, Malysheva, Omarova, Rozina, Choshanov, etc. is directly devoted to the problems of training professional personnel for the digital economy. Budantsev in his scientific articles analyzed the data obtained on the basis of bibliometric analysis of publications in electronic databases on the topic of digitalization of education [5].

Research methodology. It is necessary to study the social and ethical aspects of the use of digital technologies in education, in particular, issues such as the protection of personal data and the fight against digital inequality. Moreover, the development of digital technologies in education is inextricably linked with globalization processes. The development of students' digital competence in the context of globalization is a complex scientific problem that requires a comprehensive and multidisciplinary approach. Therefore, higher education institutions should develop innovative approaches to the development of students' digital competence in the educational and training process.

Today, in the development of students' digital competence, it is important to know and understand the basic principles of computers and software, use electronic resources for data search and processing, create, edit electronic documents, communicate and work on the Internet.

One of the main problems in the development of students' digital competence is the need to constantly update knowledge and skills due to the rapid development of technology. It is also necessary to take into account the differences in the level of digital literacy between different groups of students.

Analyzing scientific research in the field, it is important to carry out a number of tasks, such as developing students' digital competence, the role of motivation and self-regulation in learning digital skills, the impact of digital technologies on cognitive processes such as attention and memory, and increasing the effectiveness of various teaching methods [2]. Based on the analytical data, it can be said that there is a need to develop students' digital competence, which requires interdisciplinary cooperation and a deep understanding of how to learn and use technology. Therefore, it is necessary to develop effective methods for teaching and assessing students' digital competence, and to create conditions for constantly updating knowledge and skills in this area. At the same time, developing motivation among students to learn digital technologies and use them in professional activities is an important element. Therefore, it is necessary to

use various teaching methods in lectures, practical sessions, as well as independent work, project assignments, etc., and to take into account the individual characteristics of students and their level of digital literacy when choosing teaching methods.

Testing students' knowledge and skills in digital technologies should be carried out on the basis of an integrated approach, which includes assessing their ability to apply them in practice. For this, it is important to develop conditions and mechanisms for constantly updating the development of students' digital competence. For this, it is necessary to organize various events, such as seminars, trainings, refresher courses, etc.

Over the past five years, according to the data on the topic of digitalization of education, a search query has revealed more than 2.9 thousand publications. These data show that in the world, articles devoted to the topic of digitalization of education are published in conferences (47.2%), scientific journals (48.4%), and books account for only 4.4%.

According to the analysis, synthesizing the results of the research, among the most important for research in the electronic database eLibrary.ru, one can single out the articles of Andryukhina et al.; Ustyuzhanina and Evsyukov; Grebennikova and Novikov; Pettersson and others, devoted to the analysis of digitization in education.

Another positive aspect of the digital education system is the proctoring system, which allows you to participate in classes from anywhere in the world where there is an Internet connection, and is considered convenient to use, as well as the system of submitting documents through online offices, their active use [4].

Today, the main and most relevant source of information for most students is Internet resources. This is obvious, because the digitization of education implies the development of the field of information technologies. The Internet allows you to obtain various necessary information at any time. Also, most of the students participating in these studies follow websites and educational platforms for learning, which is also natural for the digital age and the present time. Nowadays, it is common for educational institutions to be connected to a single digital network with access to the Internet. This is not only convenient, but also relevant and modern. It also provides more opportunities for obtaining the necessary information flow.

Analysis and results. Based on the results obtained, it can be noted that the majority of students consider LMS (learning management system) technology to be convenient. This technology makes education more convenient and mobile. LMS technology is a repository of educational materials - video lessons, lectures, presentations, books and courses - that can be accessed from anywhere in the world on any device. This is especially relevant in the modern world, since many educational institutions use distance or blended learning, which involves independent learning and independent receipt of information in a certain format. The most important trend in the development of digitalization of student education is the formation of a system of continuous education as a universal form of activity aimed at the continuous development of the individual throughout his life. In the modern world, due to the unique competitive nature of the individual, the continuous development of his abilities is an advantage for every person. Today, much attention is paid to this aspect [1].

As mentioned above, the distance education format is especially relevant today. This trend is especially important from the point of view of the expansion of globalization. Therefore, the development of information technologies in distance education for students is the most important task of the digitalization of education in the modern world.

In the countries of the Commonwealth of Independent States, this area is not very well developed, but due to certain circumstances in the form of force majeure, the online/distance education format is rapidly developing and strengthening in the education system, as well as in the life of modern students.

Based on the analytical results of the research, it can be said that the majority of students believe that virtual reality technologies are not used in their educational institutions and will not appear in the near

future [5]. Students believe that the digitalization of education, especially in educational and scientific activities, is partially developed. Because there is not a large amount of necessary equipment and searching for the necessary information takes a long time.

From the point of view of social risks, this transition to online education, the creation of a virtual educational environment necessitates a change in the management system of the educational organization. If these changes are not implemented, digitalization can lead to negative consequences. Therefore, it is necessary to conduct relevant studies that will allow systematizing research on the social impact of digitalization of higher education and developing, studying and identifying recommendations on how to reduce the social risks of the transformation of an educational institution under the influence of digitalization from the point of view of globalization processes. Creating a virtual learning environment necessitates a change in the management system of an educational organization.

Basic skills in information and communication technologies (ICT) are the skills necessary to effectively use the main functions of information and communication technologies to obtain, evaluate, store, create, present and exchange information, as well as to communicate via the Internet and participate in collaborative networks [5].

In today's rapidly developing and globalizing world, digital technologies are rapidly penetrating various aspects of human life: the economy, production, and even the educational sphere are changing at an unprecedented pace. Digital technologies have had a significant impact on the material and technical equipment of schools and higher education institutions, educational programs, forms and methods of teaching. Currently, teachers use digital tools and pedagogical programs to individualize the educational space in their educational programs. They use digital technologies in the preparation and conduct of lessons to improve interaction between all participants in the educational process. Today, the creation, processing and transmission of information is impossible without new information technologies. However, everyone should have a certain level of information literacy. Because in the virtual world, the individual's own culture remains almost the only mechanism for regulating human behavior. Information culture is becoming one of the most important components of culture. In this regard, the formation and development of a modern education system is impossible without a high information culture. Because digital technologies are one of the main forms of reflecting the cultural values of society [3].

To achieve these goals, 2 priority areas have been identified for improving the professional training of future teachers in digital conditions [4]

1. Promoting the development of highly effective digital education:

- infrastructure, connectivity and digital equipment;
- effective planning and development of digital capabilities, including modern organizational capabilities;
- teachers and education;
- high-quality educational content, user-friendly tools and secure platforms that respect electronic privacy rules and ethical standards.

2. Enhance digital skills and competencies for digital transformation:

- basic digital skills and competencies from the first year;
- digital literacy, including combating disinformation;
- computer education;
- good knowledge and understanding of data-intensive technologies such as artificial intelligence (AI);
- advanced digital skills that produce more digital professionals;
- ensure that girls and young women are equally represented in digital studies and careers.

The Digital Education Action Plan for 2021-2027 builds on the first Education Action Plan for 2018-2020, which includes the following priority areas:

- better use of digital technologies for teaching and learning;
- development of digital competences and skills;
- improving education through better data analysis and prediction.

Digital learning process is an educational process based on the use of digital technologies with the role of the teacher in digital learning, aimed at developing digital competencies, taking into account the individual and collective learning activities of students [4]. Digital competencies are a set of knowledge, skills and qualifications necessary for the use of information and communication technologies.

Conclusions and suggestions. Thus, in the global educational experience of developing digital competencies in students, several approaches can be distinguished.

The first approach is the integration of digital technologies into the educational process. In this case, digital technologies are used as a means of teaching and assessing student knowledge. For example, in some countries, electronic textbooks are being introduced that allow students to access information at any time and from any place.

The second approach is to create special programs and courses for the development of digital competence. Such programs can be part of general education or be offered separately. For example, some universities in the USA and Europe are creating special digital literacy courses that help students master basic digital skills.

The third approach is to create special centers and laboratories for the development of digital competence. Such centers provide students with access to modern digital technologies and tools, as well as conduct educational programs and events.

In general, the world experience in developing digital competence among students shows that it is important not only to have knowledge about digital technologies, but also to be able to use them in their work and life. Therefore, the development of digital competence should be focused on the practical application of knowledge and skills.

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