The role of information and communication technologies in the educational process

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Abstract: The article highlights the issues of the spread of digital technologies, the accelerated development of the digital infrastructure of educational institutions, the training of specialists with modern digital competencies, the renewal of specialties and fields of study taking into account labor market trends, the formation of educational programs based on flexible learning trajectories, the development of the concept of lifelong learning, as well as the processes of introducing artificial intelligence systems into the educational environment.

Keywords: digital technologies, education system, online learning, distance learning, digital transformation, digital learning environment

Introduction. Today, the penetration of digital technologies into all spheres inevitably requires a new quality of education. It is worth noting that high-level changes are observed in the social sphere and in education. Although natural resources and cheap labor are important, they are becoming secondary factors of socio-economic development. The insufficient level of basic knowledge formed by the existing education system is becoming increasingly evident. A successful technological revolution always brings with it the means to solve the problems it creates, and the information (digital) revolution is no exception. Digitalization in education is not preparation for life and work, but lifelong learning and personal development. It should be noted that the widespread use of global information systems and artificial intelligence technologies is helping to implement the necessary changes. Achieving this goal is especially important in connection with the spread of cloud computing, high-speed Internet, the widespread introduction of smart digital tools and virtual technologies. In the era of digitalization, more attention should be paid to the formation of competencies and the development of adaptive skills. Reducing the number of topics required for study allows you to significantly deepen the development of the remaining material, to pay maximum attention to the formation of the necessary skills. As a result, students will have the opportunity to independently master any sections of the subject (if necessary).

International experience shows that the availability of digital technologies for participants in the educational process is a necessary, but not sufficient condition for increasing the effectiveness of educational work.

As a result of scientific research conducted by our scientists on the application of pedagogical technologies in the educational process in the higher education system of our Republic, opportunities are being achieved to find educational technologies that are suitable for the conditions of our Republic. The innovative activity of the teacher is considered a process of creativity and the result of creative activity. The use of existing opportunities for the correct organization of the educational process is the primary task of the teacher. Currently, conducting lessons using traditional and non-traditional lesson models is one of the main requirements for the lesson.

In the current conditions of society, culture and educational development, there is a need for innovative activities of teachers. The effective implementation of innovative activities of teachers depends on a number of conditions. Currently, it is necessary to pay great attention to the fact that in higher educational institutions, specialists who meet the requirements of the time are not only deeply

studied theoretical knowledge, but also highly skilled specialists who have great human qualities, are able to communicate, and master their work.

The use of digital technologies is associated with cloud computing, the spread of public high-speed Internet, the widespread introduction of smart digital tools, the use of artificial intelligence methods, and the widespread introduction of virtual technologies.

Analysis of literature on the topic. According to the research of A.Yu. Uvarova, “personalized learning, or the personalized organization of the educational process, is the dream of many generations of professors and teachers”. Here, the learner is not an object that is presented with educational material and “learns knowledge”. He acts as a deeply motivated subject of educational work, developing and implementing his cognitive motives in the process of mastering the world around him.

Research methodology. The study of science is carried out using modern personal computers, information technology tools, local and global computer networks, e-mail, office programs, electronic educational resources, new pedagogical technologies and interactive methods (project method, case study, collaborative work, etc.). In the lessons, mainly technical knowledge is developed. In this case, teachers, along with the formation of new knowledge and skills in students, assessment of mastery, giving new tasks, carrying out the study of information information, create electronic tools in the process of technical education, organize independent work, create simple programs, perform control work, etc., are implemented on the basis of computer-aided learning technology. In this process, they acquire knowledge such as information in electronic form, data banks, documented information, audiovisual and other messages, processed information, delivery of information to users through computer networks, information exchange, information on the Internet in real time, and forms of communication through the site. However, they do not pay enough attention to the culture of their use, that is, their content, and their importance in educating a person. In this regard, in order for students to fully and clearly imagine educational and other types of information that help in the formation of information culture, it is necessary to prepare methodological guides for studying the subject and briefly explain the content of the topics, and in this case, the following should be taken into account: - the creation and practical use of computer systems of the main textbook, textbook, additional educational materials, articles published in periodical scientific and methodological publications and Internet sites; - the provision of electronic versions of educational programs to students using laser discs, flash cards, etc., which allow for independent assessment of students' knowledge, and in this case, taking into account their level of preparation and allowing the materials to be combined into a single system, etc., are important.

Analysis and results. In higher education institutions, the teacher is the main person. His pedagogical skills can be raised to the level of art. This includes the teacher's constant work on himself and achievements in self-education, constant creative search, perfecting the pedagogical profession, of course, the depth and quality of students' knowledge, skills and qualifications, their upbringing. When selecting and systematizing educational materials to form information culture in students, the teacher must: - build a model for forming information culture in the content of the course, taking into account the goals of training future engineers (within the framework of the basic concepts and definitions provided for in the DTS and mandatory for study); - divide educational materials into sections, topics and elements in order to strengthen the perception and memory of students based on information technologies; - develop theoretical questions, tests, tasks to determine the level of mastery of the content of each topic by students; - knowledge of the use of information technology tools in the teaching process, approaches to informatization of education using multimedia and information resources; - selection of information and communication technologies in the organization

of the educational process, development of methods for their use in conducting classes; - scientific and methodological preparation is required, such as the implementation of educational, demonstration, information collection, processing, storage and transmission activities via a computer, automation of the information-search process, computer visualization of information about the objects being studied, and the acquisition of skills and qualifications in constructing graphs and diagrams on the screen.

Conclusions and suggestions. Thus, despite the rapid expansion of the use of digital technologies and their active use in the educational process, the number of those who can successfully solve complex problems in an environment saturated with them is only a small part of those trained, but in recent years their number has been increasing. The work of the education system should be changed in such a way that the general literacy of graduates of educational institutions and the ability to solve non-standard tasks should be higher than that of modern intelligent computer systems. Professors and teachers should show students how to properly use technology to support their knowledge, how to interact with these technological tools and devices for educational purposes. Only then will the number of such graduates increase and the new digital divide will decrease. This will serve to prepare qualified specialists who are needed for enterprises/organizations of the real sector of the economy.

As the authors of this article, we consider it permissible to offer the following conclusions and recommendations to future educators:

1. Although the principles of using pedagogical innovative technologies in training have been analyzed and practical recommendations have been developed, their use has not been sufficiently implemented in all systems of our education system. The role of using pedagogical technologies in education is incomparable, and the scope of research in this area should be implemented in wider practice.

2. The appropriate, targeted, and effective use of innovative technologies by educators in the process of education and upbringing creates ample opportunities for developing in the learner the ability to communicate, work in a team, think logically, synthesize and analyze existing ideas, and find logical connections between different points of view.

3. Recommendations are of particular importance in that they increase learning and cognitive activity, encourage students to work in small groups and teams, express their personal views on the topic and problems being studied boldly and freely, defend their opinions, substantiate them with evidence, listen to their peers, further enrich their ideas, and choose the most optimal solution from among the existing opinions.

4. The most optimal way to increase the effectiveness of education in modern conditions is to organize these classes using innovative technologies.

5. Didactic tools used in classes based on the traditional method: posters, drawings and developments are static, while multimedia tools prepared on the basis of the Power Point program are dynamic, and their use in the course of classes gives good results. In teaching information technology in education, the following important tasks are identified:

6. Study the theoretical and practical state of the problem of the subject and its analysis;

7. Identify the specific features of introducing innovative pedagogical technologies into theoretical and practical classes on the modules of the subject;

8. develop a methodology and methodological support for the use of innovative pedagogical technologies in theoretical and practical training of modules of the subject;

9. develop methodological recommendations for theoretical and practical training of modules based on the implemented pedagogical technologies and methods.

10. Taking into account the above, the educational system will be improved if the teaching process is organized using innovative pedagogical technologies in teaching modules of the subject of Information Technologies in Education.

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