Aspects of introducing digital technologies into the educational process

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Abstract: This paper of this work is the importance of digital technologies in society is increasing. Technological improvements in education have made life easier for students. Today, instead of using pen and paper, students use different software and tools to create presentations and projects, unlike a heavy book, an e-book is easier to carry, they have what they need. an opportunity is being created for them to view information directly from the Internet through their gadgets or to study at two or more higher educational institutions at the same time. This article provides a brief overview of the need for digital technologies in education and discusses key applications and challenges in education.

INTRODUCTION

Today, the introduction of digital technologies into the educational process is one of the current directions of professional training of specialists in the higher education system, it allows to improve the quality of education, significantly increase the level of competitiveness of future specialists in the labor market, and in the educational process helps to create an interactive environment.

Digital technologies are developing at a tremendous speed. Many areas of activity are moving to digital systems: hospitals, catering establishments, educational institutions. Experts are increasingly talking about the transition of the school curriculum to electronic format. When this idea is realized, not only the education system will change, but also its meaning and purpose.

At the beginning of the third millennium there is

information society, global transformations are taking place related to virtual resources and the "digitalization of the world", which are actively transforming the

world economy in the context of the digital communication space, changing the social consciousness and thinking of modern people (digital thinking).

Constantly the importance of the information infrastructure of subjects and individual culture in modern society is increasing, which in a situation of dynamically growing technological capabilities of information systems influence the socio-political, financial-economic, spiritual-ideological spheres of life

society, which indicates an increase information security roles [2]

The head of our country, Sh.M. Mirziyoyev, said, "To achieve development, it is necessary and necessary to acquire digital knowledge and modern information technologies. This gives us the opportunity to take the shortest path to ascension. After all, information technologies are deeply penetrating all areas of the world today. Of course, we know very well that the formation of the digital economy requires the necessary infrastructure, a lot of money and labor resources. However, no matter how difficult it is, if we don't start today, when will we?! "Tomorrow will be too late," they said. [1].

Adoption of digital technologies is different in human history is happening faster than innovation: in just twenty years about 50 percent of the population of developing countries with digital technologies managed to cover and change societies with their help it has been.

For example, to use artificial intelligence in the health sector based on advanced technologies to save human life and diagnose diseases and serves to increase life expectancy. Virtual in education educational environment and provision of distance education to students another opportunity made it possible to participate in programs that did not have. Also, to the blockchain it is convenient to use public services by using the based systems will increase the responsibility of the institutions that provide them, and from artificial intelligence processes become less bureaucratic. big data, and lead to more flexible and specific policies and programs possible.

Education is one of the priorities of the development of the modern education system is the introduction of information technologies into the process. Digital in educational activities the use of technologies is becoming a real practice. Schools equipment is increasing, almost every school has interactive whiteboards, there are tablets, good computers, virtual reality glasses and more. A learning environment that is now digitally enabled created and many teachers are using it successfully.

Digital technology is a discrete system based on the methods of encoding and transmitting information, which allows you to perform many different tasks in the shortest possible time. It is the speed and versatility of this scheme that has made IT technologies in demand.

The current state of the education system is characterized by the increasing role of non-traditional educational technologies. Learning by the learner with their help is much faster than with traditional technologies. These technologies change the nature of knowledge development, acquisition and distribution, deepening and expanding the content of the studied subjects, quickly updating it, using more effective teaching methods, and also significantly expanding the opportunity for education for everyone. will give. [11]. We answer the question of what digital technology is as follows: it is a modern form of economic management. a large set of data in digital form and the process of their processing serve as the main factor of production and management. Using the obtained results in practice makes it possible to achieve much greater efficiency compared to traditional forms of management.

When we talk about the digitization of higher education, we are talking about three aspects of the use of digital technologies in the modern university:

✓   teaching using digital technologies;

✓   application of digital technologies in the educational management of individuals and educational institutions (including the level of mastery of material, assessment of competencies, construction and adjustment of educational tracks);

✓   digital training for professional purposes.[2].

MATERIALS AND METHODS

To the main types of digital technologies, which are represented by a list of leading areas of development and use of data include:

1. Internet of Things (IoT – Internet of Things);

Let's be a little clearer, according to the concept of space (IoT), presented by Rob Van Kranenburg, the thing is any virtual or real object, which exists, moves and can be clearly defined. Therefore, the Internet of things is a paradigm that combines many technologies and implies equipping with sensors and connecting to the Internet all devices and things used (smart home, smart household appliances and machines),

which allows for remote monitoring, control and management processes in real time. The presented paradigm includes twobasic technologies: forecasts;

1) directly the Internet of things, which involves collecting having data in the Internet space, used later for constructing models, providing forecasts;

2) industrial Internet of things, which is designed to automate production for remote control account available resources and production capacity according to available indications sensors [13].

2. Big Data. This technology is a set of approaches, methods and tools designed for processing structured and unstructured data located in different sources and systems in order to obtain human-perceivable results [18] and increase its effectiveness work, creating completely new products and increasing competitiveness. Large volumes of information make classical methods and techniques of information processing ineffective. That's why leading companies in this field offer new models and processing tools large volumes of data.

But nowadays there is a lot of attention is not so much focused on big data, how much Smart-Data technology (this is a technology for collecting data and dividing it into segments of the target audience according to such parameters, such as age, gender, social status and etc.).

3. Machine learning and artificial intelligence (Machine Learning, Ml and Artificial intelligence, Al). Ml and Artificial intelligence is a set of methodological approaches and tools, thanks to which powerful computer systems can find data in their memory arrays that may not have been initially expected, since their new relationships and patterns were unknown. So training machines can occur in the process solutions to a significant number of similar and figuratively similar tasks. Artificial intelligence allows us translate information effortlessly from one language to another, allows you to recognize speech and immediately format it into typewritten text, develop algorithms for correct decisions.

The adoption of digital technologies is happening faster than any other innovation in the history of mankind: in just two decades, digital technologies have managed to cover almost 50% of the population of developing countries and transform societies with their help. For example, advanced technologies based on the use of artificial intelligence in the healthcare sector are helping to save human lives, detect diseases and increase life expectancy. In the field of education, the provision of virtual learning environments and distance learning has allowed

students to participate in programs that they would not have otherwise. In addition, through the use of blockchain-based systems, the use of public services will be convenient, the institutions providing them will be more accountable, and the processes will be less bureaucratic due to the use of artificial intelligence.[9]

According to experts, a modern teacher should be able to use modern information technologies and multimedia. Digital technologies greatly help in the formation of a number of competencies of teachers, one of which is digital competence.

Digital technologies are a promising direction in the field of formation of information skills, which increases the intensity of students' use of computer technologies in the process of application and rapid search of the most diverse information. [12].

Benefits of digital technologies in education include:

1) opening wide opportunities for education through the use of distance education;

2) help the teacher to automate or simplify the performance of a number of tasks;

3) provides access to the necessary information from anywhere and develops important skills in working with resources.[13].

In the process of rapid development of science, many corporations require employees who are ready to work at all levels of production using new technologies, and the need for employees without special skills is left behind. Of course, in order to solve these problems, it is necessary to modernize the educational process.

In today's information society, one of the main tasks of a teacher is to attract young people to learning and achieving success. Without the active participation or interest of students, learning cannot lead to discoveries and research that support teaching. Learning and problem solving using scientific inquiry develops diverse and important knowledge and mental skills.

Currently, a number of programs that financially support cooperation between the world's leading higher education institutions and business schools in various aspects are implemented:

•educational mobility of individuals (new mobility opportunities for students and teachers);

•cooperation of universities with innovation and scientific research institutes. [10].

Digital technologies are rapidly spreading and updating (high-speed Internet; high-performance digital mobile devices –smartphones, tablets, etc.; Web 2.0 tools – blogs, wikis, social networks, etc.; cloud services – Google, Office 365, etc.; new generation of virtual devices reality and artificial intelligence. This opens up unlimited access to digital tools, materials and services. Students and educators gain unprecedented control over their information space and how it is shared. Their opportunities for self-control and mutual control have expanded, to develop interest in learning, for meaningful learning.

The introduction of digital technologies in the educational system has both positive and negative aspects.

The advantage of using digital technologies in education is that it is a learning strategy that uses technology to complete the entire curriculum and allows students to learn quickly. Students use laptops, tablets, and similar technological or Internet-connected gadgets. Instead of taking notes on what the teacher teaches, most of the curriculum is delivered online to students through an engaging and interactive platform. For better assimilation of the learned knowledge, they strengthen their knowledge of the topics passed through computer quiz tests. It led to the emergence of new communication channels, which expanded the possibilities of transferring information and using them in the educational process, and created opportunities to study the curriculum of prestigious universities of other countries and build knowledge.

Learning technology applications can save a lot of time and energy by automating or partially automating daily operations like attendance tracking and performance monitoring. Digital technology teaches students to use technology responsibly and strategically, which helps them make decisions and develop self-discipline. [9].

Opportunities for teachers.

Interactive lessons: Digital technology allows teachers to create interactive lessons that make learning more fun and accessible for students. Interactive activities, videos, and virtual labs enrich the learning experience.

Personalized learning: Thanks to digital platforms and analytics tools, teachers can tailor learning to individual students' needs. This helps combat inequality in education and improves academic performance.

Access to vast resources: The Internet provides an endless number of educational resources that teachers can use in their work. [17].

The downside is that it has stopped being taken seriously by students, and many consider it a formality. Issues related to the excessive use of screen time and the effectiveness of teachers' use of technology are also raised. Teachers should create and interpret online learning content, encouraging students to analyze the topic from different perspectives.

One of the causes of the educational crisis is the poor quality of teaching. Some qualified professors do not understand and have problems with multi-functional classroom devices, and some older teachers have health problems that lead to a lot of sitting in front of a screen. does not put Many people face such problems in everyday life. Millions of young people do not have access to the Internet at home, causing some students to drop out.

Technical problems: not all teachers have sufficient training and experience working with digital technologies, and may encounter technicaldifficulties in their implementation in the educational process.

Data security: with increasing use of digital platforms questions arise about the security of student data. Teachers should be are attentive to the protection of confidential information.

Distance learning: The COVID-19 pandemic has shown that distance learning can be effective, but can also cause social isolation and lack of motivation among students.

Another important factor influencing digital technology is the development and quality assurance of digital educational resources. These resources may be supporting textbooks and related materials, or resources that focus on specific subjects or parts of the curriculum. Policies for the provision of digital learning resources are important and can be implemented through various actions. For example, some countries fund web portals that become repositories that allow teachers to share resources or create their own. [13].

It should be noted that digital technologies provide a lot of opportunities to improve education, but their integration into the educational process is far away not

simple. By itself, equipping educational organizations with digital technologies does not lead to improving educational results. The digital transformation of education can be thought of as a solution to the problems of bridging the digital divide. At its core, the education system is information production, which is always carried out in the information environment. Recent decades. We are witnessing a transition from a "paper" to a "digital" information educational environment. At different stages of development, this transition was called computerization, informatization, and today – digitalization of the relevant area human activity. [17].

What should be done to effectively use digital technologies in education while maintaining the quality of teaching?

First of all, we must improve the Internet infrastructure in our country, increase the quality of services provided by mobile operators, and create conditions and opportunities for the most vulnerable population, especially students and young people, to master the latest achievements of modern information and communication technologies.

Secondly, to expand the scope of use of digital technologies in the organization of the educational process and to develop information resources, teaching tools and distance learning technologies, to attract creative students to university digitization projects, and to regulate the activities of higher education institutions. to make proposals to the competent authorities on amendments to the documents, to establish centers including structures, classrooms, laboratories, media studios, etc., equipped with high-efficiency digital devices, and to apply the experience gained there in educational institutions lash.

Thirdly, to ensure the solid integration of modern information and communication technologies and educational technologies, to create additional conditions for the continuous development of the professional skills of pedagogues in this regard.

Fourth, to organize and conduct courses for improving the skills of teachers on topics such as the use of interactive presentation systems, the development of interactive and multimedia presentations in connection with the Internet for lectures and seminar classes.

Fifth, to implement the process of distance learning at any time using real-time interactive presentation systems, video conference systems, virtual halls, electronic resources.

Sixth, the use of cloud technologies, virtual reality, augmented reality and the use of a 3D printer in the development of didactic materials and experimental designs, the use of digital didactics and digital educational models, projects for teachers and students, diploma theses, scientific research and others should be developed to discuss scientific websites. Only then, we will be able to use digital technologies to provide students and young people with education at the level of today's demand without lowering the quality of education. [14].

Raising the content of higher education to a new level in terms of quality, social a worthy contribution to the sustainable development of the industry and economic sectors highly qualified personnel who can contribute and find their place in the labor market establishing a training system;

Introduce digital technologies and modern methods into the educational process the following measures will be implemented:

- Highly qualified engineers and technicians for the digital economy organization of training system;

- Modern information and communication technologies and education ensuring a strong integration of technologies, in this regard, a pedagog supplement for continuous development of professional skills of personnel creating conditions;

- Individualization of educational processes based on digital technologies, development of distance education services, webinar, online, "blended learning", wide introduction of "flipped classroom" technologies into practice;

- Remote based on modern information and communication technologies organization of educational programs;

- Accelerating the creation of national e-learning resources, foreign organization of translation of electronic educational resources in the educational process gradually increasing the weight of electronic resources, e-learning in order to create literature and download them to mobile devices information about electronic resources using QR-code in libraries creating a placement system;

- Materials of the conference of the higher educational institution, graduation-qualification works, master's and doctoral dissertations, scientific and technical creation of an electronic data base, future scientific and technical data in order to ensure the novelty, the use of the anti-plagiarism system is widely introduced reach;

- Due to the uniqueness of educational directions and specialties modern, widely used internationally in the educational process development of use of software products;

- Pedagogical staff of higher education institutions, bachelor's degree, master's degree containing information about students and doctoral students and regularly updated electronic database (Student Record System) to create its national system based on the establishment of its management. [12].

CONCLUSIONS

In conclusion, it can be said that digital technologies are used in the educational system its introduction plays a major role in the modernization of the country's education system. It serves to organize modern education and increase the effectiveness of education. At the same time, it ensures that we occupy an important place in the world community.

To eliminate these problems, first of all, the production of digital technologies in the country, the increase of the import of the latest digital devices in the country, and the negotiation of developing countries with developed countries in this regard can be a solution to the problem. Every aspect of our lives, our communication with others, our work and our learning process needs the use of early digital technologies.

Thus, it will be up to instructional designers and educators to harness the power of advanced digital technology to make effective learning available to everyone and everywhere. Digital learning fosters creativity and gives students a sense of achievement, encouraging further learning by thinking outside of traditional ways. All countries have been able to adopt distance learning technologies using a combination of television, radio, online and mobile platforms, which is commendable. These provide easy access to information, easy storage of information, increased retention of information and improved presentation of information, making education more interactive, facilitating knowledge sharing and increasing enthusiasm for learning. When technology is used effectively for educational purposes , the quality of education improves, adaptation with new smart devices makes students interested in using digital education.

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