

# Scientific And Theoretical Methodology Of Digitalization Of Education

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**Abstract.** This article explains the meaning of the concept of digitalization. The main characteristic of modern information processes is visual practice, which becomes the basis of everyday life. Today, people, even schoolchildren, are distinguished by the fact that they receive and perceive more and more information through the "screen". The field of education is explored by studying, systematizing and generalizing the existing practice of obtaining scientifically based conclusions on the introduction of digital technologies in education.

**Key words:** virtuality, knowledge, digitalization, education, computer, virtual reality, potential, school, virtual image, information.

## Introduction

Today, digital technologies are actively used in all spheres of life. They contribute to the rapid development of the economy, banking, service sectors, as well as the educational process. In the minds of all citizens living in the country, from young children to pensioners, the idea is being formed that all problems in society can be solved through digital technologies. In addition, as a result of the robotization of production and management processes, the issue of competition between robots and workers is also being raised in the banking sector.

Nowadays, digital technologies are developing at a very rapid pace. Many areas of activity have switched to a digital system: hospitals, catering enterprises, educational institutions. Experts are increasingly talking about the transition of the educational program to an electronic format.

It is necessary to implement global computer technologies in all spheres of activity, to create new communications and a highly automated information environment. This will not only be the beginning of a change in the traditional education system, but also the first step towards the formation of an information society.

Today, teachers can communicate with their colleagues and friends around the world. Naturally, this category of people has usually abandoned offline platforms, conferences and meetings, but they are very happy to join online conversations, seminars and video conferences.

Digital technologies in education are a way to organize a modern educational environment based on digital technologies.

When this method is implemented, not only the education system, but also the content and purpose of education and upbringing will change. The modern formula of education, which differs from the old one, is the digitalization of education, that is, the process of transition to an electronic system.

By widely introducing digital technologies in state and public administration, in the social sphere, it is possible to increase efficiency and dramatically improve people's

lives. The digital economy is not just a single type of activity, but also a set of business, industrial facilities, quality education and services. The term “digital” means the active use of information technologies in all areas.

If in a regular economy, material goods are the main resource, then in a digital economy it is information, data that is processed and transmitted. After their analysis, a solution is developed for their proper management.

### **Materials and methods**

In writing this article, the goal was to identify priority areas for the development of the educational process based on the analysis of the use of digital technologies in the education system of our republic, their capabilities.

The article analyzed not only the important place of digital technologies in the field of education and the form in which they are introduced.

As research methods, the article used the study, systematization and generalization of regulatory documents and existing practice to draw conclusions regarding the formation of a scientifically based approach to the introduction of digital technologies in higher education.

### **Analysis and results.**

Since the second half of the 20th century, the economic development of many countries around the world has seen increased attention to the use of information technologies, in particular, the digital economy.

The formation of which is possible due to scientific and technological progress;

- contributes to the growth of a single information economic space and increased labor productivity; the creation of innovative jobs and digital assets;
- to further improving citizens' rights; opening up access to the global market; ensuring the competitiveness of enterprises;
- improving the quality of public services, etc.

“It is generally accepted that the concept of “digital economy,” in relation to the use of modern information technologies (digital) in economic subsystems processes and their management, was introduced by N. Negroponte in 1995” [1;1673].

With the development of the digital economy, its environmentally dangerous impact increases, including as a result of increased dependence on foreign technological suppliers, which leads to a weakening of technological and economic security both at the national level as a whole and at the level of individual industries and enterprises.

With the development of the digital economy, its ecologically dangerous impact is increasing. In particular, as a result of the growth of dependence on foreign suppliers of technology, technological and economic security is weakening both at the country level as a whole and at the level of individual industries and enterprises.

The state can provide them with targeted assistance;

firstly, by providing guarantees for bank loans, including export loans, covering part of the costs of patenting, forming targeted investment funds, supporting them through the state procurement mechanism, etc.

Secondly, by providing additional support to small and medium-sized businesses in creating digital technologies, platforms and providing digital services. This can be achieved, for example, by providing certain benefits to relevant companies developing digital technologies (for example, on insurance payments or tax payments), creating healthy competition between such companies, and issuing them orders and standards.

Thirdly, by forming and scaling digital platforms for key areas of the economy, etc. [2].

**Digitalization of education: classifications, features.** It is difficult to talk in detail about all possible changes in the future, but now we can safely say that it will definitely change. Today, approaches to understanding and defining the specific features of educational technologies, project principles and methods, as well as the experience of their application have been analyzed. Study materials, plans, classes, journals and diaries - all this is being transferred to the online version. Some students, especially those with disabilities or temporarily impaired health, have the opportunity to conduct lessons online without leaving home. Also, there are now electronic resources where students can find detailed information for the lesson.

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

*First*, of course, we need to improve the Internet infrastructure in our country, improve the quality of services provided by mobile operators, and most importantly, create conditions and incentives for the population, especially young students, to master the latest achievements of modern information and communication technologies;

*Secondly*, expand the scope of the use of digital technologies in organizing the educational process and develop information resources, teaching aids and distance learning technologies, attract creative students to university digitization projects. At the same time, make proposals to the authorized bodies on amendments to the regulatory legal acts regulating the activities of higher educational institutions, as well as organize centers with highly qualified structures, classrooms, laboratories, media studios, etc. equipped with digital devices, and apply the experience gained in them in all higher educational institutions of Uzbekistan;

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

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

*Fifthly*, to implement the distance learning process at any time using interactive presentation systems, video conferencing systems, virtual halls, electronic resources in real time;

*Sixthly*, it is necessary to use 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, as well as the development of scientific websites for teachers and students to discuss projects, theses, scientific research, etc. Only then will we be able to use digital technologies to ensure that students receive education that meets today's standards without compromising the quality of education [3].

### Discussion

It should be noted separately that today our life is connected with technology in every aspect, from the morning alarm clock to planning the day and ending with studying. We wanted to create an opportunity to use technology to improve and develop the quality of education. When a tablet becomes an element of learning,

children enter the learning process with great interest. This is equivalent to combining classical education with games. As a result, the learning process improves, mastery, the level of education and the effectiveness of personnel training increase. An educated generation, professional personnel are the key to the comprehensive development of society.

The list of disadvantages of online education may include:

1. The risk of negative consequences. It is impossible to say for sure whether such innovations will be positive or not. This system is being used for the first time, so it is difficult to compare it with something similar;

2. Lack of creativity. Scientists have proven that colorful images help students to remember better, that is, they help develop creative abilities. However, information technology excludes students from the opportunity to express themselves. This can be boring for students;

3. Decreased mental activity. A single student does not need to think or reflect on something, that is, the student has stopped working on himself. It is enough to go to the Internet to find the necessary information;

4. There is also a social side to the issue. Computer information reduces the level of social communication of a person. Usually, when a student comes to school for the first time, the likelihood of finding or meeting friends there is small. By coming to school in a traditional way, the student not only receives knowledge, but also finds friends, learns to communicate with society;

5. Problems with physical development. First, the student's ability to see with his eyes and feel subtle situations changes. His long-term staring at the screen leads to eye fatigue.

6. The role of teachers. After digital technologies, the concept of a teacher is really changing. Teachers are being replaced by robots and virtual systems. As a result, people lose their jobs.

**Conclusions and recommendations.** Today's classrooms are very different from those of a decade ago, and classrooms are equipped with computers, iPads, tablets, smart boards, and other types of educational technology.

As in other parts of the world, the seven-screen generation of the digital generation is emerging in Uzbekistan - television, computer, tablet, phablets, smartphones, and smartwatches. As a result of having such a dense digital environment and constant interaction with it, the thinking and information processing processes of today's students are fundamentally different from the thinking and information processes of the past.

The digital generation cannot and should not be taught in the way our parents learned. It is also impossible to use a blackboard and white chalk in teaching this generation. Changing the blackboard to a whiteboard and the chalk to a marker will not change anything, that is, it will not be a way to motivate modern students to learn and develop the skills to succeed in the labor market. It is necessary to adapt the education system to the digital generation through the widespread and effective use of innovative educational technologies and didactic models based on modern information and communication technologies. It should also be noted that teachers retain a key role in the interactive learning process focused on the needs of students. The reputation of a teacher and the effectiveness of his work will depend not only on the level of knowledge of the course content and his pedagogical skills, but also on the extent to which the teacher uses modern information and communication technologies in collecting, processing and teaching a particular educational material.



In other words, in the digital age, education must be reconsidered and the educational paradigm must be changed, because students no longer want to study in the traditional way, and teachers should not continue to teach in such a conventional way.

Thus, the use of information technologies opens up new prospects for the career and social self-realization of secondary school students in the future and helps to realize one of the goals of modernizing art education with the help of information technologies. The formation of education and upbringing in this way creates new opportunities and conditions for teachers and students to live in a highly developed information environment.

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