



## DIGITAL EDUCATIONAL TECHNOLOGIES AS A NECESSARY ELEMENT OF THE MODERN LEARNING PROCESS

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**Abstract:** This article argues that, within the framework of the new established technological order — which relies significantly on advances in artificial intelligence — education is inconceivable without information technologies. Digital technologies contribute to improving education and create vast opportunities. In recent years, AI technologies have begun to be actively integrated into the educational process, generating new possibilities for students, teachers, and educational institutions.

**Keywords:** digitalization of education, information technologies, technological progress, artificial intelligence, personalization of education, smart learning platforms, scientific achievements.

The New Uzbekistan is developing very rapidly and dynamically, and to sustain and guarantee this, the education system must be dynamic and flexible. In the modern world, where digitalization permeates all spheres of life, the educational process cannot remain on the sidelines. Digital educational technologies (DET) are becoming an integral part of learning, transforming traditional approaches and opening new horizons for students and educators.

In the current era of information technologies, digital technologies contribute to improving education and create great opportunities. The personalization of the



educational process is taking place on the basis of the digital transformation of education. At its core, the education system represents the production of information and is carried out within an information environment [1. p.79]. Digital technologies are becoming an inseparable part of both internal and external global policy.

Digital educational technologies encompass a wide range of tools and methods that use digital means to support and enhance the educational process. These include online courses, interactive platforms, educational applications, virtual and augmented reality, as well as learning management systems (LMS). These technologies make it possible to organize learning more flexibly and accessibly, which is especially relevant in the context of globalization and the rapid development of information technologies.

At the heart of the modern transformation of education lies scientific, technical, and technological progress, and the transition to the era of the information society. New demands on education are emerging in the context of digitalization. One of the priority tasks in the system of higher pedagogical education in New Uzbekistan is the formation of creative thinking among students. Regardless of how advanced modern computers may be, people have the advantage of creative thinking — they are more adaptive in crisis situations and capable of offering new and relevant products and solutions [2]. One of the obvious facts not only in higher education in Uzbekistan, but also in school education, is the gap between theory and practice.

Digital technologies allow students to study at any time and in any place. This is especially important for people with disabilities or those who combine study with work.



Of great importance, in our view, is the approach based on combining theoretical and applied skills — the STEM approach. A student simultaneously covers several fields of knowledge, gains the opportunity to make fuller use of available information and to verify facts through personal experience, and benefits from the teacher’s use of the latest scientific research [3].

Conditions are being created for the active integration of artificial intelligence technologies into socio-economic spheres and for the implementation of procedures based on digital intelligence. AI technologies are rapidly transforming the face of many industries, and education is no exception. In recent years, AI technologies have begun to be actively integrated into the educational process, creating new opportunities for students, teachers, and educational institutions.

AI in the educational space can perform the following *functions*: the ability to distinguish and identify visually and acoustically perceived images of objects; to formulate and solve professional tasks; the ability to search, process, and appropriately use all types of information and knowledge [4], as well as the “ability to understand the meaning of individual acts of socio-cultural human activity and speech” [5].

The application of *AI technologies* in the field of education plays an important role in human learning and development throughout life.

Some aspects of the influence of AI on education include: personalization of learning, smart learning platforms, automation of administrative processes, support for teachers, access to knowledge, and development of future skills.



One of the most significant advantages of AI in education is the ability to personalize the learning process. Using machine learning algorithms, systems can analyze data about student progress, their strengths and weaknesses, and then offer individualized learning plans. This allows each student to learn at their own pace and receive the support they need.

Modern educational platforms — smart learning platforms such as Khan Academy, Coursera, and others — use AI to create adaptive courses. These platforms can automatically adjust the content and complexity of tasks depending on the student's level of knowledge, which contributes to more effective mastery of the material. AI can also greatly simplify administrative processes in educational institutions.

Automating routine tasks, such as grading tests and managing schedules, allows teachers to focus on more important aspects of their work — interacting with students and developing educational materials.

Teachers can use AI to obtain analytics about their students, which helps them better understand the needs of the class and adapt their teaching methods. For example, data analysis systems can provide information on which topics present difficulties for most students, allowing the teacher to respond promptly to these challenges. Digital technologies help to practically apply entirely new pedagogical practices as well as models for organizing the educational process [6].

AI contributes to broader access to educational resources. With the help of natural language processing technologies and chatbots, students can receive answers



to their questions at any time. This is especially important for distance learning, where access to teachers may be limited.

The introduction of AI into the educational process also helps students develop the skills necessary for a successful career in the future. Knowledge of working with AI and understanding its capabilities are becoming important for modern professionals. Curricula incorporating courses in programming, data analysis, and AI ethics help prepare students for the challenges of the future.

Despite the numerous advantages, the implementation of digital educational technologies faces a number of challenges. First, there is the problem of digital inequality: not all students have access to the necessary devices and the internet. Second, the lack of preparation among teachers for using new technologies can reduce their effectiveness. Finally, it is important to consider data security and the protection of students' personal information in the digital space.

The role of artificial intelligence in education continues to grow, opening new horizons for students and teachers. However, it is important to remember that technology is merely a tool. The key remains the human factor: the interaction between teachers and students, which cannot be replaced by machines [7]. Effective integration of AI into the educational process requires a careful approach and a readiness for change on the part of all participants in the educational process.

Digital educational technologies are becoming a necessary element of the modern educational process. They open up new opportunities for learning, making it more accessible and individualized. However, for the successful integration of these technologies into the education system, it is necessary to overcome existing challenges and ensure equal access to all resources. Only in this way will it be



possible to realize the potential of digital technologies and prepare students for the demands of a rapidly changing world.

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