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DIGITAL PEDAGOGY AND COGNITIVE TECHNOLOGIES

Nishanova Mastura Xafizovna
NPUU named after Nizami, Senior Teacher
e-mail:mastura.nishanova@gmail.com,
+998935736553
Nishanov Davron Baxramovich
Institute of Social and Political Sciences, PhD
e-mail: nishonboy@yandex.ru,
+99893573365

Annotatsiya: This article explores the role of digital pedagogy and cognitive technologies in modern education. It analyzes the psychological and methodological foundations of digital teaching environments and evaluates the influence of tools such as artificial intelligence, adaptive systems, and AR/VR on learners' cognitive development. The author emphasizes the need to enhance education quality, redefine the teacher's role, and strengthen learner-centered approaches.

Keywords: Digital pedagogy, cognitive technologies, artificial intelligence, AR/VR, person-centered learning, adaptive systems, modern education.

The modern education system is going through a period of fundamental changes. As information technologies have penetrated almost all stages of education, the renewal of teaching methodologies, tools and approaches has become inevitable. One of the most relevant areas in this context is digital pedagogy and cognitive technologies integrated into it. They allow not only to digitize the teaching process, but also to more effectively organize the process of creating, storing and improving knowledge in the student's mind.

Digital pedagogy is not just online lessons or electronic platforms. It is a comprehensive approach that involves developing new learning paradigms, creating interactive and interactive learning environments, and transforming the role of the teacher from a "source of knowledge" to a "guide to learning." This approach focuses on how the student acquires knowledge, that is, on cognitive processes. Cognitive technologies are technological tools based on the study of the functioning of the human mind. These include artificial intelligence, neural networks, language processing systems, as well as AR (augmented reality) and VR (virtual reality) technologies. These technologies serve to develop the student's cognitive functions such as memory, comprehension, problem solving, and creative thinking.

For example, adaptive learning systems based on artificial intelligence offer lesson content tailored to the individual abilities of the student. As a result, the student learns at his own pace, in a format that is convenient for him and according to his abilities. Such systems increase efficiency, especially in large audiences or distance learning. AR and VR technologies allow for visualization of the lesson process, mastering concepts through real experience. For example, analyzing the human body in a virtual environment through VR in biology, or "walking" through ancient cities in history lessons activates the student's imagination and memory mechanisms. This leads to a deeper and more stable formation of knowledge. Also, through modern digital technologies, the relationship between the teacher and the student is changing. Now the student is not a passive learner, but an active participant, a seeker and a more independent decision-maker. This situation creates the basis for the formation of "metacognition" - the skills of monitoring and evaluating one's own learning process, which is important for cognitive approaches.

However, there are a number of challenges in implementing digital pedagogy and cognitive technologies: infrastructure limitations, the level of digital literacy of teachers, the relevance of

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curricula, and the readiness of the psychosocial environment. Cognitive overload, that is, the exhaustion of the student with too much information, is especially dangerous. Therefore, scientifically based approaches are needed when implementing digital tools. For example, Mayer's theory of cognitive overload should be taken into account when preparing multimedia materials. Also, the correct selection and integration of technology based on did The modern education system is entering a new phase with the rapid development of digital technologies and their rapid introduction into the educational process. Such fundamental changes in the educational process are changing not only the way students learn, but also the role of teachers. Digital pedagogy and cognitive technologies, in particular, allow for interactive and individual approaches to education. These technologies affect the cognitive development of students, encouraging them to learn more effectively and independently.actic models (for example, TPACK, SAMR) is more effective.

Digital pedagogy refers not only to teaching via the Internet, but also to the transformation of the education system into a general digital environment, the development of new pedagogical approaches and methodologies. The main goal of education in this system is to strengthen the person-centered approach, that is, to organize the learning process adapted to the needs and abilities of each student. With the help of digital educational tools, students have the opportunity to learn at their own pace, which increases the quality of the learning process.

Cognitive technologies, including artificial intelligence, adaptive systems, and AR/VR technologies, are essential in developing students' thinking skills. Adaptive systems created using artificial intelligence provide students with individually tailored lessons tailored to their abilities. This helps students learn in the most effective way. AR and VR technologies, on the other hand, provide students with the opportunity to connect the subject being studied with the real world, which makes students more interested and helps them understand more deeply.

However, for digital pedagogy and cognitive technologies to be effectively used in education, several challenges need to be addressed. Ensuring teachers' digital literacy, technology proficiency, and the quality of teaching materials are important. Also, the information provided to students should not be overloaded, as according to the theory of cognitive overload, excessive information input can reduce student performance.

In addition, for the successful implementation of digital education systems, it is necessary to develop scientifically based pedagogical approaches. For example, developing educational materials and methodologies based on Mayer's cognitive load theory and selecting technologies based on didactic models increases the effectiveness of the learning process. In this regard, it is important for teachers to use innovative technologies in coordination with pedagogical goals.

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