



MIRZO ULUG'BEK NOMIDAGI
O'ZBEKISTON MILLIY UNIVERSITETI
JIZZAX FILIALI



**KOMPYUTER ILMLARI VA
MUHANDISLIK TEXNOLOGIYALARI**
XALQARO ILMIY-TEXNIK
ANJUMAN MATERIALLARI
TO'PLAMI
1-QISM



26-27-SENTABR
2025-YIL



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**O‘ZBEKISTON RESPUBLIKASI OLIY TA’LIM, FAN VA
INNOVATSIYALAR VAZIRLIGI**

**MIRZO ULUG‘BEK NOMIDAGI O‘ZBEKISTON MILLIY
UNIVERSITETINING JIZZAX FILIALI**



**KOMPYUTER ILMLARI VA MUHANDISLIK
TEXNOLOGIYALARI**
mavzusidagi Xalqaro ilmiy-texnik anjuman materiallari
to‘plami
(2025-yil 26-27-sentabr)
1-QISM

JIZZAX-2025

Kompyuter ilmlari va muhandislik texnologiyalari. Xalqaro ilmiy-texnik anjuman materiallari to'plami – Jizzax: O'zMU Jizzax filiali, 2025-yil 26-27-sentabr. 355-bet.

Xalqaro miqyosidagi ilmiy-texnik anjuman materiallarida zamonaviy kompyuter ilmlari va muhandislik texnologiyalari sohasidagi innovatsion tadqiqotlar aks etgan.

Globalashuv sharoitida davlatimizni yanada barqaror va jadal sur'atlar bilan rivojlantirish bo'yicha amalga oshirilayotgan islohotlar samarasini yaxshilash sohasidagi ilmiy-tadqiqot ishlariga alohida e'tibor qaratilgan. Zero iqtisodiyotning, ijtimoiy sohalarini qamrab olgan modernizatsiya jarayonlari, hayotning barcha sohalarini liberallashtirishni talab qilmoqda.

Ushbu ilmiy ma'ruza tezlari to'plamida mamlakatimiz va xorijlik turli yo'nalishlarda faoliyat olib borayotgan mutaxassislar, olimlar, professor-o'qituvchilar, ilmiy tadqiqot institutlari va markazlarining ilmiy xodimlari, tadqiqotchilari, magistr va talabalarning ilmiy-tadqiqot ishlari natijalari mujassamlashgan.

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CONDITIONS FOR ORGANIZING INDEPENDENT EDUCATION OF STUDENTS BASED ON ARTIFICIAL INTELLIGENCE

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Abstract: The rapid development of information and communication technologies is creating fundamental reforms, innovative approaches and new opportunities in all spheres of society. The education system is not left behind by these changes, it is being updated and improved on the basis of advanced technologies. In recent years, the widespread application of artificial intelligence (AI) technologies in the educational process has become important in automating educational activities, developing personalized teaching methods, increasing efficiency and supporting the pedagogical process.

Keywords: Artificial intelligence, platform, assessment, technology, independent learning, education, distance learning.

Modern technologies have initiated fundamental reforms in almost all areas of society. In particular, the education system is undergoing a profound transformation with the introduction of new technologies, in particular, tools based on artificial intelligence (AI). Artificial intelligence technologies are currently serving to automate the educational process, adapt to the individual needs of students, increase educational

efficiency, and support the activities of teachers. One of the advantages of AI technologies in education is the ability to make decisions based on data. Based on the activities, grades, interests, and level of mastery of students, AI systems can provide individual recommendations in real time, which allows for more effective organization of independent learning [1]. Another important aspect of AI technologies in education is interactivity and constant availability. While traditional lessons are held only with the participation of a teacher and at a certain time, AI-based learning systems operate 24/7. This allows students to learn at a convenient time and place. This advantage of SI technologies is of particular importance in cases where independent learning is organized, especially in the form of distance learning. For example, students can communicate with artificial intelligence at any time of the day, get answers to their questions, and re-study topics they do not understand. This ensures the continuity, continuity, and freedom of education[2].

Artificial intelligence is a useful tool not only for students, but also for teachers. Analytical platforms based on artificial intelligence prepared for teachers are an important tool for planning their pedagogical activities, adapting the content of the lesson to the individual student, analyzing the results, and developing pedagogical strategies. In this case, the teacher saves time from repetitive technical tasks and pays more attention to ensuring a deeper understanding of students. For example, with the help of artificial intelligence, important errors in students' assignments are identified and the teacher is given individual recommendations to eliminate them. This increases the quality of the educational process [3].

Table 1

| | Direction | Statistics |
|----|--|------------|
| 1 | Student use of AI (global) | 86 % |
| 2 | Increased student motivation | 75 % |
| 3 | Course completion rate | 70 % |
| 4 | Increased self-confidence | 23 % |
| 5 | Adaptive teaching opportunities | 61 % |
| 6 | Problem-solving skills | 72 % |
| 7 | Teacher use of AI | 60 % |
| 8 | Teacher evaluation of results (positive) | 55 % |
| 9 | Teacher evaluation of results (negative) | 18 % |
| 10 | Use of AI-based educational games | 51 % |
| 11 | Use of adaptive platforms | 43 % |
| 12 | Use of AI in lesson preparation | 43 % |

Table 1 above shows the impact on education. Globally, the use of artificial intelligence is very widespread among students, with 86 percent of students using AI tools in their learning process. This shows the increasing importance of digital technologies, especially artificial intelligence, in the process of independent learning. The 75 percent increase in motivation of students who received AI-based education and the 70 percent completion rate of the course prove that these technologies serve to organize the learning process more effectively. Also, 23 percent of students increased

their self-confidence, 61 percent used the opportunity of adaptive learning, and 72 percent developed problem-solving skills. This means that AI tools play an important role not only in acquiring knowledge, but also in personal development and the formation of competencies. 60 percent of teachers reported using artificial intelligence in their work. Of these, 55% rated the results as positive, while 18% noted negative effects. This indicates the need to properly integrate AI tools into the educational process and adapt pedagogical methodologies.

In practical terms, 51% of teachers are using AI-based educational games. At the same time, 43% are using adaptive platforms, and another 43% are using AI tools in the lesson preparation process. This shows that artificial intelligence not only supports students' independent learning, but also allows teachers to save time and use innovative methods. In general, the presented statistics show that organizing students' independent learning based on artificial intelligence is yielding effective results. While students are developing motivation, independence, and problem-solving skills, teachers are also gaining advantages such as saving time and improving the quality of lessons. At the same time, it is important to use AI tools in a targeted and methodical manner to reduce some negative impacts.

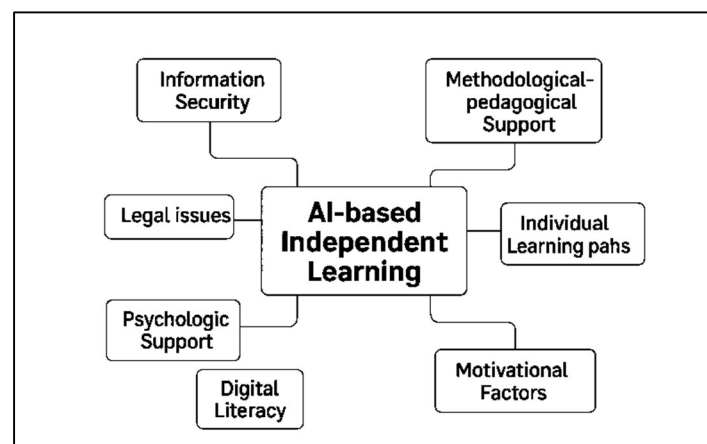


Figure 1. Factors determining the effectiveness of AI-based independent learning

In the process of independent learning, the student's intrinsic motivation to learn is of great importance. Mechanisms such as automatic assessment systems, instant feedback, gamification elements, gradual achievements and rating systems in AI platforms play an important role in increasing the student's interest in the learning process[4]. The absence or poor functioning of incentive tools can reduce the student's enthusiasm for independent learning and, as a result, reduce educational effectiveness[5]. A high level of digital literacy is a prerequisite for students to effectively use SI tools. This includes not only technical skills, but also the skills of searching for information, analyzing and evaluating the information found, identifying reliable sources, managing data, and adhering to ethical standards in the digital environment. A high level of digital literacy ensures high results in the process of independent learning through AI platforms.

Independent learning often requires students to rely on their own strength and initiative. In such conditions, psychological problems such as stress, fatigue, or lack of

self-confidence can arise. Therefore, virtual mentors and emotional analysis systems developed with the help of AI can act as psychological support by constantly monitoring students, determining their emotional state, and sending motivational messages when necessary. In addition, AI platforms collect personal data of students and analytical data about their academic activities. It is important to ensure the confidentiality of this data, prevent its unauthorized disclosure to third parties, and take cybersecurity measures.

In conclusion, it can be said that the effective use of artificial intelligence-based platforms and e-learning systems requires a multifaceted approach. The main components of this process are the provision of sufficient technical infrastructure, the perfection of methodological and pedagogical foundations, the formation of internal motivation for learning in students, a high level of digital literacy, the availability of psychological support, and the guarantee of information security. Each factor is inextricably linked, and their integrated use not only increases the effectiveness of education, but also serves to develop modern competencies in students, such as independent learning, analytical and creative thinking, and problem-solving. Therefore, the use of an integrated, systematic, and scientifically based approach to the introduction of AI technologies into the educational process is of great importance [6-7].

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