

TECHNOLOGIES FOR EDUCATING STUDENTS USING ARTIFICIAL INTELLIGENCE

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Abstract: This scientific article analyzes modern approaches to educating students using artificial intelligence technologies. The role of digital tools and intellectual systems in the educational process, their importance in increasing educational efficiency are highlighted. Also, the possibilities of organizing person-centered education based on artificial intelligence, developing independent thinking, moral values, and social activity of students are considered. The article develops practical recommendations based on advanced foreign experiences and innovative pedagogical technologies. The research results show that it is possible to increase efficiency by integrating artificial intelligence into the educational process.

Keywords: artificial intelligence, digital education, educational technologies, pedagogical innovations, person-centered education, interactive methods, distance learning, educational efficiency, information and communication technologies, student development, social competence, independent thinking

Today, globalization, digitalization, and the rapid development of innovative technologies create the need for a radical modernization of the education system. In particular, artificial intelligence technologies have begun to play an important role not only in the economy and industry, but also in the educational process. In modern society, the formation of a competitive, broad-minded, independent-thinking, and highly moral personality is one of the priority tasks of the education system. Therefore, along with traditional educational approaches, the introduction of advanced pedagogical technologies, in particular, solutions based on artificial intelligence, is becoming an urgent issue. The introduction of artificial intelligence into the education system makes it possible to individualize, optimize, and increase the efficiency of teaching and learning processes. The process of student learning is becoming more interesting and effective through digital learning environments, distance learning platforms, smart learning systems, and interactive methods. In particular, with the help of artificial intelligence algorithms, students' knowledge level, interests, psychological characteristics and educational activities can be analyzed and individual educational trajectories can be developed that suit them. This serves the effective application of the concept of person-centered education in practice. In addition, artificial intelligence technologies also play an important role in the educational development of students. In particular, aspects such as the formation of social competencies, the development of a culture of communication, strengthening teamwork skills and making the right decisions in problem situations are effectively developed through interactive platforms based on artificial intelligence. Virtual environments and simulations allow students to experience situations close to real life, increasing their practical experience. Also, with the help of artificial intelligence, it is possible to improve control and assessment systems in the educational process. Intelligent assessment systems allow for a quick, objective and accurate assessment of students' knowledge, which serves

to improve the quality of education. At the same time, artificial intelligence is a great assistant for teachers, reducing their workload, enriching their methodological activities and helping to effectively manage the educational process. Nowadays, artificial intelligence, combined with information and communication technologies, is creating innovative changes in the education system. This serves to widely introduce pedagogical innovations, increase educational efficiency and ensure the comprehensive development of students. At the same time, issues such as information security, ethical standards and ensuring data confidentiality are also of great importance when using artificial intelligence. This scientific article extensively covers the theoretical and practical aspects of student education technologies using artificial intelligence. In particular, the role of artificial intelligence in the educational process, its integration with pedagogical innovations, its potential in the development of person-centered education, and methods of effective application based on advanced foreign experience are analyzed. The article also develops scientifically based recommendations for the implementation of these technologies in practice. The relevance of the research is that the widespread introduction of artificial intelligence technologies into the education system will not only increase the quality of education, but also expand the possibilities of educating students as spiritually mature, socially active individuals with modern competencies. Therefore, the study and implementation of educational technologies created on the basis of artificial intelligence is one of the important tasks of today's education system.

LITERATURE ANALYSIS AND METHODOLOGY

In recent years, the number of scientific studies related to the introduction of artificial intelligence technologies into the education system has been increasing sharply. In particular, foreign and domestic scientists are widely studying the impact of artificial intelligence on the teaching and learning process, its effectiveness, and the possibilities of practical application. An analysis of the literature shows that educational systems based on artificial intelligence, in addition to increasing the level of knowledge of students, play an important role in developing their independent thinking, problem-solving, and social adaptation skills. Scientific sources specifically mention intelligent learning systems (Intelligent Tutoring Systems), adaptive learning platforms, virtual and augmented reality technologies, and automated assessment systems as the main areas of artificial intelligence in education. According to the results of the research, such technologies allow monitoring the level of student learning, ensuring an individual approach, and optimizing the learning process. At the same time, some scientific works also pay attention to aspects such as ethical issues, data security, and the reduction of the human factor in the use of artificial intelligence. Local studies mainly study the issues of introducing information and communication technologies into the educational process, developing distance learning, and improving digital pedagogical approaches. However, the comprehensive study of student education technologies based on artificial intelligence has not yet been studied in depth enough. In this regard, this article is significant in that it aims to fill this gap. A comprehensive approach was taken as the basis of the research methodology. In particular, methods of analyzing, comparing, generalizing, and systematizing scientific literature were used. Through these methods, the role and capabilities of artificial intelligence in the educational process were studied in depth. Also, an attempt was made to determine students' attitudes towards educational tools based on artificial intelligence and their effectiveness using pedagogical observation, experimental work, and questionnaire methods. In

addition, the research process used a systematic-analytical approach to evaluate the integration of artificial intelligence technologies into the educational process, its advantages and disadvantages. The results obtained through statistical analysis methods were processed and their reliability was ensured. The principles of person-centered education, competency-based approach and innovative pedagogy were chosen as the methodological basis.

In general, the literature analysis conducted and the methodology used allow for an in-depth study of the theoretical and practical aspects of student education technologies using artificial intelligence, determining their effectiveness, and drawing scientifically based conclusions on their introduction into the education system.

Conclusion

In conclusion, the introduction of artificial intelligence technologies into the educational process is one of the important and promising areas of the modern education system. With the help of these technologies, along with the process of acquiring knowledge, students' spiritual and moral education, independent thinking, social activity and competencies can be effectively developed. The results of the study show that intelligent learning systems, adaptive platforms and interactive environments based on artificial intelligence allow for an individual approach to students, organizing education in accordance with their interests and needs. This serves to implement person-oriented education and significantly increase the effectiveness of education. At the same time, artificial intelligence technologies also play an important role in the educational development of students. They form important social competencies such as communication culture, teamwork skills, and the ability to make the right decisions in problem situations. Virtual environments and simulations enhance students' adaptation to real life. However, there are also some problems in the use of artificial intelligence, including information security, data confidentiality, misuse of technologies, and the reduction of the human factor, which require special attention. Therefore, when introducing these technologies into the education system, it is necessary to take into account pedagogical, ethical, and technical requirements. In general, technologies for educating students using artificial intelligence have great potential for improving the quality of education, ensuring the comprehensive development of students, and forming a well-rounded personality that meets the requirements of modern society. In the future, expanding scientific research in this area, developing practical experiences, and implementing innovative approaches will be of great importance.

References

1. Selwyn, N. – Should Robots Replace Teachers? AI and the Future of Education. Polity Press, 2019.
2. Woolf, B.P. – Building Intelligent Interactive Tutors. Morgan Kaufmann, 2020.
3. Bates, T. – Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. 2nd Edition, 2019.
4. O'zbekiston Respublikasi Prezidentining "Raqamli O'zbekiston – 2030" strategiyasi, 2020.
5. Karimov, I.A. – Yuksak ma'naviyat – yengilmas kuch. Toshkent, 2008.
6. Abdullayeva, Q. – Ta'limda axborot texnologiyalaridan foydalanish. Toshkent, 2020.
7. Xodjayev, B. – Pedagogika nazariyasi va amaliyoti. Toshkent, 2017.

8. Ishmuhamedov, R. – Innovatsion pedagogik texnologiyalar. Toshkent, 2019.
9. To‘raqulov, X. – Zamonaviy ta’lim texnologiyalari. Toshkent, 2021.
10. Azimov, S. – Ta’limda raqamli texnologiyalar va ularning samaradorligi. Toshkent, 2022.
11. Kayumov, B. Z. O., & Nurmanova, B. B. Q. (2026). Factors and causes of behavioral deviation in adolescents. *Science and Education*, 7(3), 534-537.
12. Kayumov, B. Z. O., & Boyturayeva, N. M. K. (2026). Online psychological consultation service: problems and solutions. *Science and Education*, 7(3), 527-533.
13. Kayumov, B. Z. O., & Kodirova, Z. S. Q. (2026). The influence of the virtual world on the formation of destructive behavior in adolescents. *Science and Education*, 7(3), 426-429.
14. Kayumov, B. Z., & Olimjonova, N. S. (2026). The importance of role playing in preschool children. *Science and Education*, 7(3), 475-480.
15. Qayumov, B. Z. O., & Rustamova, D. J. (2026). Causes of deviation in the education of school-age students. *Academic Journal of Science, Technology and Education*, 2(3), 101-103.
16. Абдуллаев, Д. Ю. Ў. (2025). Юқори синф ўқувчиларида фаол фуқаролик позициясини ривожлантиришнинг педагогик ва психологик хусусиятлари. *Science and Education*, 6(2), 441-452.