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ARTIFICIAL INTELLIGENCE AS A TOOL FOR PERSONALIZED LEARNING IN MODERN EDUCATION

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Abstract: *This article examines the role of artificial intelligence (AI) in personalized learning and its growing importance in modern education. Personalized learning has become one of the main priorities in educational systems because students have different learning styles, abilities, and academic needs. Artificial intelligence provides new opportunities to adapt educational content to individual learners and improve the overall learning process. The study analyzes the advantages of AI-based personalized learning, its influence on student motivation and academic performance, as well as the challenges related to technological dependence and ethical concerns.*

Keywords: *artificial intelligence, personalized learning, adaptive learning, educational technology, digital education, modern teaching*

INTRODUCTION

Education in the 21st century is undergoing significant transformation due to rapid technological development. One of the most important innovations in recent years is artificial intelligence, which is increasingly used in schools, colleges, and universities worldwide. Among its many applications, personalized learning has become one of the most valuable areas where AI can improve educational outcomes.

Traditional education often follows a “one-size-fits-all” model, where all students are expected to learn the same material at the same pace. However, this approach does not always meet the individual needs of learners. Artificial intelligence offers a new approach by making education more adaptive and student-centered.

The purpose of this article is to analyze how AI supports personalized learning and contributes to more effective education.

Main Part

Personalized learning is an educational approach in which teaching methods, materials, and pace are adapted to the individual characteristics of each learner. In traditional classrooms, teachers often face difficulties in addressing the needs of all students because learners differ in their abilities, motivation, learning styles, and academic backgrounds. Artificial intelligence helps solve this problem by creating more flexible and adaptive learning environments.

One of the most important applications of AI in personalized learning is the use of adaptive learning systems. These systems collect data about students' academic

performance, analyze their mistakes, and identify learning gaps. Based on this information, AI can automatically modify educational content according to individual needs. For example, students who need additional support can receive extra explanations, easier exercises, or repeated practice tasks. At the same time, stronger students can move forward faster and work on more advanced materials. This allows every learner to study at an appropriate level and improves educational efficiency.

Another important function of artificial intelligence is intelligent tutoring systems. These systems act as virtual tutors and provide students with immediate academic support. They can answer questions, explain concepts, and guide learners step by step through difficult topics. Unlike traditional learning, where students may need to wait for teacher assistance, AI-based tutors provide instant help, making the learning process more continuous and effective.

Artificial intelligence also contributes to formative assessment. Automated assessment tools can evaluate quizzes, assignments, and short-answer tasks in real time. Immediate feedback helps students quickly identify and correct mistakes, which improves retention and academic progress. For teachers, this reduces routine administrative work and creates more opportunities to focus on classroom interaction and individual student support.

An additional advantage of AI in personalized learning is increased student motivation. Educational applications supported by AI often include interactive elements such as gamification, personalized recommendations, and virtual simulations. These features make learning more engaging and enjoyable. When students feel that educational content matches their abilities and interests, they usually become more active and motivated participants in the learning process.

AI is especially valuable in language education. Intelligent language-learning platforms can analyze pronunciation, grammar mistakes, vocabulary use, and writing patterns. They provide personalized exercises based on students' weaknesses and help improve language competence more efficiently. For students learning foreign languages, this creates additional opportunities for independent practice outside the classroom.

Despite these benefits, several challenges remain. One major concern is overdependence on technology. If students rely too heavily on AI tools, they may reduce their ability to think critically and solve problems independently. Education should therefore maintain a balance between technological support and human intellectual development.

Another challenge is digital inequality. Not all schools or universities have equal access to modern technologies, especially in developing countries. Limited internet access, lack of devices, and insufficient teacher training may prevent effective AI implementation in some educational environments.

Ethical concerns also require attention. AI systems collect significant amounts of student data, including academic performance, behavioral patterns, and personal

learning preferences. Educational institutions must ensure data privacy, cybersecurity, and responsible use of information to protect students' rights.

Finally, artificial intelligence should not replace teachers. Human educators remain essential for emotional support, communication, creativity, and moral guidance. AI should be viewed as a supportive educational tool that complements, rather than replaces, professional teaching.

Conclusion

Artificial intelligence has become a powerful tool for personalized learning in modern education. It helps create adaptive learning environments, provides immediate feedback, and increases student motivation. At the same time, challenges such as technological dependence, unequal access, and privacy concerns must be addressed. If implemented responsibly, AI can significantly improve the quality and effectiveness of education in the future.

REFERENCES:

1. UNESCO. Artificial Intelligence and Education: Guidance for Policy-Makers. Paris, 2023.
2. OECD. Personalized Learning with Artificial Intelligence. Paris, 2024.
3. Rose Luckin. Machine Learning and Human Intelligence in Education. London: UCL Press, 2021.
4. Wayne Holmes. Artificial Intelligence in Education. New York: Routledge, 2022.
5. Karimov U., Rakhimova D. Digital Transformation of Education in Uzbekistan // Journal of Modern Education. – Tashkent, 2023. – Pp. 45–52.
6. Xasanova N., Abdullayeva M. The Role of Educational Technologies in Higher Education // Young Scientist. – Tashkent, 2022. – Pp. 88–93.
7. Rasulov A. Innovative Teaching Methods in the Era of Artificial Intelligence // Pedagogical Sciences and Practice. – Samarkand, 2024. – Pp. 112–118.