

ARTIFICIAL INTELLIGENCE IN EDUCATION: OPPORTUNITIES AND CHALLENGES

Toshboltaev Fakhridin Urinboevich

*Senior Lecturer (PhD) of the "Information Technology"
department at Fergana State University.*

Minojiddinova Mukhlisa Ahrorjon qizi

*First-year student of Foreign languages faculty,
Fergana State University*

Abstracts: This article discusses the use of artificial intelligence (AI) technologies in education, including their benefits and the problems they may cause. AI can help make learning more personal, check students' knowledge automatically, and create educational platforms based on students' needs. It also helps reduce teachers' workload and improve the quality of lessons. However, using AI in education may also bring some problems. For example, the article talks about the protection of personal data, less human interaction, lack of technology, and ethical issues. It also looks at how these technologies are being used in the education system of Uzbekistan, their potential, and future development. The research shows that using AI in education can help improve digital skills and modern teaching methods. This makes the topic important both scientifically and practically.

Keywords: artificial intelligence, educational technologies, digital literacy, automated assessment, personalized learning, information security, ethics, teaching methods, technological problems, the education system of Uzbekistan.

Аннотация: В этой статье обсуждается использование технологий искусственного интеллекта (ИИ) в образовании, включая их преимущества и проблемы, которые они могут вызвать. ИИ может помочь сделать обучение более персонализированным, автоматически проверять знания учащихся и создавать образовательные платформы на основе потребностей учащихся. Он также помогает снизить нагрузку на учителей и повысить качество уроков. Однако использование ИИ в образовании может также принести некоторые проблемы. Например, в статье говорится о защите персональных данных, меньшем человеческом взаимодействии, отсутствии технологий и этических проблемах. В ней также рассматривается, как эти технологии используются в системе образования Узбекистана, их потенциал и будущее развитие. Исследование показывает, что использование ИИ в образовании может помочь улучшить цифровые навыки и современные методы обучения. Это делает тему важной как с научной, так и с практической точки зрения.

Ключевые слова: искусственный интеллект, образовательные технологии, цифровая грамотность, автоматизированная оценка, персонализированное обучение, информационная безопасность, этика, методы обучения, технологические проблемы, система образования Узбекистана.

In the 21st century, artificial intelligence (AI) technologies are rapidly developing on a global scale, causing significant changes in various sectors of society. In particular, the introduction of AI technologies into pedagogy, teaching methods, and learning processes is bringing education to an entirely new level. While AI was initially widely applied in fields such as industry, healthcare, and finance, today, the transformation of the education system stands out as a vivid example of its growing influence. Traditional teaching methods are being enriched with AI-based solutions, leading to significant changes in teacher-student interactions, knowledge acquisition processes, assessment systems, and the use of educational resources.

For example, platforms like Chat GPT, Duo lingo, and Khan Academy use AI algorithms to provide learners with personalized educational content based on their knowledge level, learning style, and interests. In addition, automated assessment systems reduce teachers' workload and help ensure objectivity. These kinds of technologies contribute not only to improving the quality of education but also to increasing students' interest in learning.

However, alongside the integration of AI technologies into education, various challenges and questions are emerging. For instance, how is the privacy of students' personal data collected by AI tools ensured? Will the role of teachers gradually diminish? Are these technologies equally accessible to all schools and students? Such questions indicate that the use of AI in education requires deep consideration not only from a technical perspective but also from social, ethical, and political angles.

This article explores the use of artificial intelligence in the field of education, analyzing its opportunities and advantages, while also highlighting the key challenges and potential risks associated with its implementation. Furthermore, it discusses recommendations for using AI tools effectively and responsibly. The relevance of this topic lies in the fact that it is of vital importance not only for education professionals but also for parents, policymakers, and broader segments of society.

1. Opportunities of Artificial Intelligence in Education.

Artificial Intelligence (AI) is taking the education sector to a new level. There is a unique role for AI technologies in creating personalized learning paths for each student, supporting teachers, and improving the quality of education. The following opportunities are key areas for effectively using AI in education:

1.1. Personalized Learning. With the help of AI, education can be tailored to the individual. The learning levels, styles, and speeds of students are analyzed, and the

most suitable educational materials are offered to them. For example, this is implemented on platforms like Khan Academy, where students can adjust their learning speed and work on lessons and exercises suited to their needs. Additionally, language learning apps like Duolingo adapt the learning methods and difficulty levels based on the student's knowledge level.

1.2. Reducing Teachers' Workload. Teachers often spend a lot of time on tasks such as grading tests, preparing lessons, and handling administrative duties. AI is automating these processes, allowing teachers to dedicate more time to focusing on their students. For example, programs like Grammarly automatically check students' written work, identify grammatical errors, and help them correct them.

1.3. Real-time Support and Feedback. Virtual assistants or chatbots can provide students with 24/7 support. Students can ask questions and receive immediate answers, which enhances their independent learning capabilities. Furthermore, AI tutors help students track their learning progress and assist them in absorbing new content.

1.4. Learning Opportunities for People with Disabilities. AI technologies are expanding learning opportunities for students with disabilities. For example, text-to-speech (TTS) technologies and speech recognition systems help students overcome challenges in reading and writing. This is especially beneficial for students with visual or hearing impairments.

2. Challenges of Artificial Intelligence in Education.

With the integration of AI technologies into the education system, a number of problems and concerns have emerged. These technologies can help make the education process more effective, but they also require addressing several social, ethical, and technical issues, which is a natural outcome.

2.1. Personal Data Security. AI systems collect, analyze, and customize educational materials based on students' data. However, this data can be sensitive and private. If this information is misused or stolen, it could pose risks. For instance, if students' psychological states or personal data are used incorrectly, it could compromise their safety and privacy.

2.2. The Role of Teachers. The introduction of AI technologies in education raises the risk of reducing the role of teachers. If students are receiving automatic answers to all their questions, it could limit teachers' ability to share their knowledge and experience. The role of the teacher is not only to provide information but also to motivate students and offer social and emotional support.

2.3. Inequity in Access to Digital Education. Not all schools or students have equal access to AI technologies. Schools with better financial resources can make use of high-quality AI tools, while schools in rural or underdeveloped areas may lack access to such technologies. This can increase educational inequality and deepen the digital divide.

3.What Role Will Artificial Intelligence Play in the Education System in the Future?

In the future, AI will become an integral part of the education system. This technology will help create effective and interactive learning opportunities for students. Communication between teachers and students will improve, and AI systems will be used to enhance the average quality of education on a global scale. Additionally, AI will support students' social and emotional development. Teachers will use AI more deeply and individually in educational processes, which will increase the opportunities to meet the unique needs of each student.

In conclusion, artificial intelligence (AI) is becoming an integral part of the modern education system. It not only simplifies the educational process, but also takes it to a qualitatively new level. AI is creating profound changes in the field of education by creating personalized curricula, automated assessments, real-time support, and wide opportunities for students with disabilities. This technology allows students and teachers to effectively manage time and resources, making the educational process flexible and effective. However, it is very important to approach the introduction of these advanced technologies with caution. In particular, issues such as the security of students' personal data, the possibility of AI limiting the role of teachers, and the digital divide remain important. Also, the fact that schools in all regions do not have equal access to these technologies can further deepen the problem of inequality in education. AI is seen as one of the main factors in the development of the education sector in the future. It is expected to support not only academic, but also emotional and social development of students. Most importantly, AI should not be seen as a replacement for teachers, but as a tool that complements and enhances their work. Therefore, the integration of AI into education is not just a technological innovation, but an important step towards finding a balance between human potential and technology. Only then can we create an innovative, just and humane education system.

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