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ARTIFICIAL INTELLIGENCE IN EDUCATION: HOW AI IS CHANGING THE LEARNING PROCESS

Annotation. *This article examines the impact of artificial intelligence (AI) on the modern education system. Key areas of AI implementation in the educational process are analyzed: personalized learning, intelligent assistants, automated knowledge assessment, and student performance analysis. It is noted that the use of AI can improve learning efficiency and make the educational process flexible and adaptive. However, the author emphasizes the risks involved, including the loss of personal contact between teacher and student, the threat of technology dependence, and the need for digital literacy.*

Keywords. *Artificial intelligence, education, personalized learning, digitalization, adaptive systems, educational technologies.*

Introduction

Artificial intelligence is gradually becoming an integral part of the educational ecosystem. Every year, the number of schools, universities, and online platforms using AI to analyze data, adapt programs, and support teachers grows. The primary goal of implementing AI in education is to make learning more personalized, effective, and interactive. Modern systems can take into account the abilities, interests, and pace of each student, creating unique learning paths. However, along with opportunities come challenges—the need for ethical regulation, data protection, and the preservation of the human role in education.

Purpose of the study

The purpose of this study is to analyze the role of artificial intelligence in transforming traditional teaching methods and to determine how technology can improve the quality of education.

Objectives:

1. To study the key areas of AI application in education.

2. To assess the advantages and limitations of these technologies.

3. To examine examples of successful AI implementation in educational systems.

4. To identify prospects for the development of "smart learning."

Main part

1. Personalized learning

One of the main advantages of AI is the ability to personalize learning. Algorithms analyze student behavior, test results, and preferences, generating personalized recommendations. Examples of such systems include platforms like Coursera, Duolingo, and Khan Academy, where AI adapts assignment difficulty and suggests materials based on students' knowledge level. This helps students progress at their own pace, reduces stress, and increases motivation.

2. Intelligent assistants and virtual mentors

AI is being used to create chatbots and virtual assistants that can answer student questions, explain complex topics, and even assist with exam preparation. These solutions allow teachers to focus on more complex tasks, such as creative learning, critical thinking, and research.

3. Automation and analytics

AI algorithms help analyze educational data, predict academic performance, and identify learning difficulties. Automatic grading saves teachers time and improves

the objectivity of assessments. At the same time, it's important to maintain a balance between automation and a pedagogical approach to prevent learning from becoming mechanical.

4. Ethical and social aspects

The use of AI in education raises ethical and privacy concerns. Collecting data on student behavior requires strict data protection. Furthermore, there is a risk of overreliance on technology, which can lead to students losing their ability to think independently. Therefore, the implementation of AI must be accompanied by improved digital literacy and the development of a critical attitude toward technology.

Conclusion

Artificial intelligence opens new horizons for education, making the learning process more flexible, personalized, and effective. However, its implementation must occur in collaboration with teachers, not in their place. The human factor remains key —it is the teacher who guides, inspires, and develops the individual. The future of education is a partnership between humans and technology, where AI acts as an assistant, not a replacement.

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