JOURNAL OF INTERNATIONAL SCIENTIFIC RESEARCH
Volume 3, Issue 1, June, 2025 Online ISSN: 3030-3508
https://spaceknowladge.com

ARTIFICIAL INTELLIGENCE AND MODERN TEACHING PRACTICES

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ARTICLE INFO

ARTICLE HISTORY:
Received:05.06.2025
Revised: 06.06.2025
Accepted:07.06.2025

KEYWORDS:
Artificial intelligence (AI), modern teaching practices,personalized learning, automated assessment, chatbots, distance education, AR/VR technologies, data security, equal opportunities, teacher professional development.

ABSTRACT:

This article discusses how artificial intelligence (AI) technologies are impacting modern education, how they are transforming the teaching and learning process, and what new opportunities and challenges are expected in the field of education in the future. The article examines the role of AI in personalized learning, automated assessment, chatbots, and distance education, as well as its integration with modern technologies such as AR/VR. Furthermore, it addresses important issues related to the use of AI in education, including data security, equal opportunities, and the need for teachers to acquire new skills.

INTRODUCTION. In today's world, technology is developing rapidly and its impact is evident in all areas of life, including education. Artificial Intelligence (AI) is one of the most relevant technologies that has introduced new opportunities and approaches in the field of education. This article discusses the connection between artificial intelligence and modern teaching practices, how AI has introduced innovative approaches in education, as well as the challenges and future prospects of this process.

Main body:The implementation of artificial intelligence technologies in the field of education has created a number of new opportunities. Through AI systems, the educational process can become more personalized, efficient, and convenient. Below are the main areas where AI is applied in education:

Personalized learning:AI systems analyze each student's level of knowledge, learning speed, and interests to create customized educational programs. This allows students to improve their knowledge more effectively. For example, adaptive learning platforms provide students with exercises and materials that match their level.

Automated assessment:AI enables the automation of tests, exams, and other forms of evaluation. This saves time for teachers and provides students with quick and accurate feedback. AI systems can also assess students' written work and even detect logical errors.

Chatbots and Virtual Assistants:AI-based chatbots are used to answer students' questions, provide guidance, and support them. For instance, assistants like ChatGPT can help students with complex topics, offering explanations and examples.

Development of distance learning:AI is used to enhance the effectiveness of distance learning. It can track student engagement, assess their knowledge levels, and provide personalized recommendations. This makes distance education more interactive and effective.

Modern teaching practices are being integrated with AI technologies, taking education to a new level. Below are some key contributions of AI to modern education:

Interactive learning environment:AI helps make educational materials more interactive and engaging.

Data utilization:Using data collected through AI systems, educational institutions can improve curricula, identify students' weaknesses, and provide support.

Global learning opportunities:AI provides access to high-quality educational resources for students worldwide, promoting the democratization of education. For example, AI-based translation tools are expanding access to education in different languages.

However, the application of artificial intelligence in education also requires addressing several challenges and considerations:

Data security risks:The misuse or theft of data can lead to serious problems. Improperly configured AI systems may create unfair conditions for some students. Therefore, fairness must be ensured when designing and implementing AI systems.

Teacher training:To effectively use AI technologies, teachers need to be equipped with new skills and knowledge. This requires professional development and adaptation to new technologies.

Artificial intelligence and modern teaching practices complement and enhance each other. AI technologies offer the potential to make education more personalized, efficient, and accessible. However, issues such as data security, equitable access, and teacher training

must be addressed. In the future, AI's role in education will strengthen further, bringing new opportunities and achievements. All participants in the education sector must be prepared for this new era and use it effectively.

Literature review and methodology:One of the key components of artificial intelligence is machine learning and its application in education and other fields. Machine learning is the practice and theory of creating self-learning programs and is a significant part of artificial intelligence. Developers teach algorithms to identify general patterns from specific cases. As a result, the computer makes decisions not based on pre-defined commands, but using its acquired experience.There are many methods of such learning that can relate to data mining. The first definition of machine learning was given in 1959 by American computer scientist Arthur Samuel, who developed the world's first self-learning checkers game with elements of AI. Through machine learning, computers can not only recognize faces in images but also landscapes, objects, texts, and numbers.

In terms of text, machine learning has become important in grammar checking—now available in almost any text editor or even on smartphones. It considers not only spelling but also context, shades of meaning, and subtle linguistic features. Moreover, software now exists that can write news articles (e.g., in economics or sports) without human intervention.Globally, great attention is being given to the education and upbringing of younger generations. Extensive work is being carried out to provide modern education and moral development opportunities for youth. In the 21st century, science has advanced so much that it is impossible to imagine a day of life without technological achievements. Especially, concepts like an information society and artificial intelligence have become integral parts of our lives.To understand the term artificial intelligence, we must first understand what "intelligence" means. In our country, extensive reforms are being carried out across all educational levels—preschool, school, secondary specialized, and higher education—such as building new institutions and renovating existing ones. These efforts are yielding positive outcomes for the development of youth. Artificial intelligence is a rapidly evolving field of technology aimed at creating intelligent machines that imitate human behavior and can perform tasks with human-like accuracy.

Results:The field of artificial intelligence focuses on creating software and systems capable of learning from data, reasoning, understanding natural language, perceiving images and sounds, and making decisions using gathered information. In supervised learning, machines learn from labeled examples provided by humans, while in unsupervised learning, they identify patterns in data without specific instructions.

Deep learning, a recent advancement in machine learning, enables the processing of large-scale data through layered neural networks. These large datasets help algorithms learn or perform complex tasks. Today, AI programs have become quite advanced, ranging from voice assistants and stock market prediction tools to natural language processing and image recognition systems. AI also works with robotics and helps automate repetitive tasks.

Discussion:Recently, data digitization has advanced significantly. However, like any technology, student data can be vulnerable to hacking. If such data falls into the wrong hands, schools may face serious threats regarding misuse of personal information.There is no doubt that artificial intelligence will continue to progress. It is often argued that its benefits outweigh its shortcomings. Our education system is now due for renewal, and AI may guide us in the right direction. While intelligent machines may improve the educational experience, they should not be considered replacements for personal interaction. Overreliance on these technologies in classrooms may lead to ineffective educational programs for students.Computers now demonstrate the ability not only to organize intelligent schedules but also to teach other computers. However, they are still likely unable to make intuitive decisions in new classroom situations that require human judgment.

List of used literature:

1. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in Education: Promises and implications for teaching and learning.
2. Luckin, R. (2017). Towards artificial intelligence-based assessment Systems. Nature human behaviour.
3. Baker, T., & Smith, L. (2019). Educ-AI-tion rebooted? Exploring the future of artificial intelligence in schools and colleges.
4. Chen, X., Xie, H., & Hwang, G. J. (2020). A Multi-Perspective study on Artificial intelligence in education: Opportunities, challenges, and future Directions.
5. UNESCO (2021). AI and education: Guidance for policy-makers.