

THE ROLE OF ARTIFICIAL INTELLIGENCE PLATFORMS IN EDUCATION

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Abstract

The article provides theoretical and practical information on the integration of artificial intelligence (AI) technology into educational processes and its significance in determining efficiency, including the use of platforms for individualizing educational processes, correcting the workload of teachers and improving the quality of education and obtaining educational resources, automatic guidance of student knowledge, and effective organization of distance learning. The article presents international experiences, impact, and scientific research on the development of technology in the role of artificial intelligence in education.

Keywords: Artificial intelligence, educational technologies, digital education, digital transformation in education, AI and pedagogy.

Introduction

Artificial intelligence (AI) has been revolutionizing various industries, and education is no exception. With the increasing integration of AI platforms into classrooms and online learning environments, the way students learn and educators teach is being transformed. From personalized learning experiences to automated administrative tasks, AI is reshaping the education landscape in numerous ways.

AI-powered language learning apps and tools can offer personalized language learning experiences for students. Furthermore, AI systems can help in the early detection of learning disabilities or difficulties by analyzing student interaction and performance data, enabling timely intervention.

AI's data-based feedback system allows for transparent communication among teachers, families, and students. It can improve student satisfaction, reduce or eliminate bias, and identify which students are not yet meeting content standards

These findings demonstrate how intelligence is necessary for learning and any form of training, and that those who are more intelligent learn more rapidly and effectively than those who are less intelligent. This could explain the high correlations between intelligence and educational attainment.

Artificial intelligence (AI) has rapidly transformed from a futuristic concept to an integral part of our daily lives, and education is no exception. In 2024, AI technologies are revolutionizing the academic landscape, offering unprecedented opportunities for personalized learning, administrative efficiency and improved educational outcomes. From intelligent tutoring systems to AI-driven classroom management, the impact of AI is profound and far-reaching.

The use of AI in Education is quickly changing the way we learn. Many students use AI tools for studying and homework, and teachers use AI for planning lessons and analyzing data.



Notably, 89% of students admit to using ChatGPT for homework, and approximately 97% of students in higher education institutions use AI-powered tools to enhance their learning.

Between managing the classroom, grading assignments, planning lessons, communicating with parents and families, and meeting administrative requirements, teachers are stretched thin as they strive to meet all of their occupational demands. Generative AI is well suited to address these pressing teacher needs.

According to Carnegie Learning, teachers who use AI are finding multiple benefits from doing so:

42% found that using AI reduced the time spent on administrative tasks.

25% reported benefits in AI's ability to assist with personalized learning.

18% reported benefits related to improving student engagement.

17% noted AI benefits in enhancing student learning outcomes.

The academic efforts of researchers have also accelerated to explore the effects of artificial intelligence on education in general and higher education in particular, so the study (Khare, Stewart and Khare, 2018) emphasized the positive impact of artificial intelligence applications on student success, and the study (Tuomi, 2018) stressed the importance of artificial intelligence. In providing rich educational environments and the possibilities of solving traditional problems of education using artificial intelligence applications, the study (Fryer, 2019) emphasized the role of robots in developing students' interests in learning other languages. The study (Ma and Siau, 2018) emphasized the importance of artificial intelligence in developing higher education and changing traditional methods of education.

One of the most significant contributions of AI to education is personalized learning. Traditional teaching methods often struggle to address the individual needs of every student due to time and resource constraints. AI platforms, however, can analyze a student's learning patterns, strengths, and weaknesses to create customized learning pathways. For instance, tools like Khan Academy's AI-driven features adapt the content difficulty based on a learner's progress, ensuring that students receive the right level of challenge.

AI platforms are also breaking down barriers to education for students with disabilities. Voice recognition software, text-to-speech tools, and real-time translation services powered by AI enable students with visual, auditory, or language challenges to access educational content more effectively. Platforms like Microsoft's Immersive Reader are making learning more inclusive by providing features such as reading comprehension assistance and language translation.

Educators often spend a significant amount of time on repetitive administrative tasks such as grading assignments, managing schedules, and tracking attendance. AI can automate many of these processes, freeing up time for teachers to focus on instruction and student engagement. For example, platforms like Gradescope use AI to quickly grade assignments and provide detailed feedback, reducing the workload for educators.

AI-powered tutoring systems are becoming increasingly sophisticated. These systems, such as Carnegie Learning's MATHia, provide students with real-time feedback and step-by-step guidance as they work through problems. By simulating a one-on-one tutoring experience, these platforms help students grasp complex concepts and improve their understanding.



AI makes learning more interactive and engaging through gamified content and adaptive learning platforms. Programs like Kahoot! and Minecraft: Education Edition use AI to create interactive quizzes and simulations that respond to student input, keeping learners motivated and involved.

AI platforms can analyze vast amounts of data to provide insights into student performance and learning trends. This enables educators to identify at-risk students early and intervene with targeted support. Schools and institutions can also use this data to refine their curricula and teaching strategies, ensuring that educational programs remain effective and relevant.

AI is also playing a crucial role in promoting lifelong learning. Platforms like Coursera and edX leverage AI to recommend courses and resources tailored to individual career goals and interests. By providing flexible and personalized learning options, AI helps learners acquire new skills and stay competitive in the job market.

Despite its many benefits, the integration of AI in education comes with challenges. Privacy concerns, data security, and potential biases in AI algorithms are significant issues that need to be addressed. Additionally, the reliance on AI should not replace the human elements of education, such as mentorship and emotional support, which are critical for student development.

Digital transformation in education refers to the integration of digital technologies into all aspects of teaching, learning, and learning management. It is changing how education systems, institutions, and stakeholders use technology to enhance the learning experience, increase efficiency, and prepare students for learning.

Artificial intelligence in education is a rapidly growing field that combines technology with teaching practices to improve the learning experience. The integration of AI into education offers a variety of benefits, but it also raises challenges and ethical considerations. Here is a study of AI

AI as a tool for personalized learning

One of the most important applications of AI in education is personalized learning. AI-powered platforms, such as adaptive learning systems, analyze student performance in real time and adapt the curriculum based on individual strengths, weaknesses, and learning styles. For example, tools like DreamBox or Knewton can offer customized lessons and quizzes to help students understand concepts at their own pace. Personalized learning not only improves engagement, but also ensures that each student receives the support they need to succeed.

AI and Assessment: AI can revolutionize assessment methods by offering immediate feedback, personalized assessments, and insights into student success. Traditional assessment systems may not always capture the nuances of student understanding, but AI-powered platforms can provide a more holistic assessment of student performance. In subjects such as math, science, and language learning, AI tools can identify specific problem areas and offer targeted practice exercises. AI can also help me

Intelligent Tutoring Systems (ITS): Intelligent tutoring systems provide students with individualized tutoring without human intervention. These systems use AI to analyze student responses, identify misconceptions, and provide targeted advice or additional resources. ITS can be especially valuable in STEM education, where students may need extra help understanding complex concepts. AI can complement one-on-one tutoring by simulating



Artificial intelligence platforms are undoubtedly transforming education by making it more personalized, accessible, and efficient. While challenges remain, the potential benefits of AI in education are immense. By embracing these technologies thoughtfully and ethically, educators and institutions can create a more inclusive and effective learning environment that meets the diverse needs of students in the 21st century.

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