

## THE ROLE OF ARTIFICIAL INTELLIGENCE IN EDUCATION.

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**Abstract:** The contribution of computer science (AI) to education has consistently been significant. From robotic tutoring to automated answer sheet analysis, AI has always assisted both teachers and students. In this study, we conducted a thorough analysis of various analytical developments applied worldwide, including computer science methods applied to the education sector, thereby generalizing and highlighting the role of AI in student learning and analysis. Our research demonstrates that AI is the foundation of all computer science, enabling intelligent tutoring systems. These systems help develop such qualities as self-analysis, responsiveness, deep inquiry, resolving conflicting statements, creating artistic inquiries, and choosing skills.

**Key words:** Dictionary, artificial intelligence, education, feature, unity, popular expressions, linguistics

**INTRODUCTION:** Artificial intelligence (AI) is present in our lives and is successfully developing in modern conditions. The beginnings of AI are often associated with summer research at Dartmouth in 1956. Computer science. Today, AI work is being carried out by police in cancer investigations, reducing the risk of aircraft collisions, developing autonomous vehicles, etc. Robots with artificial intelligence have outperformed human surgeons in stitching cuts; performing search and rescue operations; providing care for children, the elderly, and hospital patients; and helping MasterCard companies detect fraud. [1]

Historically, education has largely followed a "one-size-fits-all" approach, often struggling to cater to the diverse learning styles, paces, and needs of individual students. Teachers, burdened by administrative tasks and large class

sizes, frequently face limitations in providing personalized attention. AI promises to address many of these systemic challenges by offering tailored learning experiences, automating routine tasks, and providing data-driven insights that can enhance pedagogical strategies.

Artificial intelligence technology has been applied to education for the past twenty years. Intelligent Tutoring Systems (ITS) cover all major AI topics (e.g., data illustration, machine learning, language, planning, reasoning, and explanation), and have therefore become a motivating test bed for formalizing theories of psychological traits and experimenting with their operationalization.

AI in education has been applied in many fields, such as physics, programming, essay writing, and reading, and also because of the development of the educational system. The most typical applications of AI in academia relate to data-driven illustration, intelligent learning, language processing, and autonomous agents. AI in education has created powerful learning environments and positive interactive experiences for college students for decades.

**Artificial intelligence is transforming the learning process in education:**

Since the dawn of education, teaching strategies, as well as the connections shared between students and teachers, have expanded significantly. The world of learning strategies has become more structured to achieve higher, more effective results. This transformation will be largely due to the ongoing intervention of technology. [2]

Following continuous technological advances, we are witnessing a paradigm shift in teaching and learning methods. The connection between teachers and students is dynamic, with teachers becoming more accessible and much more understanding of their students' perspectives. Technology has created an additional learning cooperative, as scientists and students collaborate on a bicycle built for two to achieve greater results. [3]

**How AI is now being used in education:** A recent Microsoft and McKinsey report on more than 2,000 students and 2,000 teachers from Canada, Singapore, the UK, and America shows that artificial intelligence (AI) is already providing

teachers and schools with innovative ways to understand how their students are progressing, as well as delivering fast, personalized, targeted content.

**The Role of Artificial Intelligence in Education:**

1. AI can automate basic educational tasks, such as grading. While AI may never be ready to actually replace human grading, it is becoming quite capable. Currently, scientists have the ability to change grades for virtually all types of multiple-choice and fill-in-the-blank tests, and automated grading of student writing may not be possible. [5]

2. Students could receive additional support from AI tutors. These programs will teach students the basics, but are still not ideal for helping students learn higher-order and creative thinking, which real lecturers still need to facilitate. However, this shouldn't rule out the possibility that AI tutors could try these subjects in the future. [4]

3. AI-powered programs can provide students and teachers with useful feedback. AI can't solely help researchers and students create courses tailored to their interests, but it can provide feedback to everyone about the overall success of a course. AI systems of this type allow students to seek out the support they have and professors to identify areas where they can improve their learning.

4. It can change the role of teachers. Teachers will always have a job in education, but what that role is and what it entails may change due to new technologies such as intelligent computing systems. As we've already discussed, AI can take over tasks such as grading, help students improve their learning, and even replace real-world tutoring. [4]

5. AI-powered data can transform how schools find, educate, and support students. Intelligent data collection through intelligent computer systems is already changing how colleges interact with prospective and current students. From recruiting to helping students choose the most effective courses, intelligent computer systems are helping to make each department more closely aligned with student needs and goals. [5]

The most effective future models will likely involve AI as a powerful

augmentative tool for educators, rather than a replacement. AI should free teachers from administrative burdens, provide insights into student learning, and facilitate personalized instruction, allowing educators to focus on high-value activities such as mentorship, fostering socio-emotional skills, and critical thinking development.

For AI to be successfully integrated, educators must be equipped with the necessary digital literacy and pedagogical skills to effectively use AI tools, interpret their data, and understand their limitations. Comprehensive professional development programs are crucial to empower teachers as designers and facilitators of AI-enhanced learning experiences.

**CONCLUSION:** The integration of Artificial Intelligence (AI) into education represents not merely a technological upgrade but a profound paradigm shift, reshaping how knowledge is imparted, acquired, and assessed. Throughout this article, we have explored the multifaceted ways AI promises to revolutionize learning by enabling unprecedented personalization, automating administrative tasks, enhancing accessibility, and providing data-driven insights that can optimize pedagogical strategies. From adaptive learning platforms and intelligent tutoring systems to AI-powered grading tools and virtual assistants, AI's transformative potential positions it as a powerful ally for both educators and learners, fostering a more engaging, efficient, and equitable learning environment.

This advancement shifts the educator's role from sole knowledge dispenser to facilitator, mentor, and designer of learning experiences, allowing them more time for deep engagement with students. For learners, it opens doors to adaptive pathways, immediate feedback, and engaging content tailored precisely to individual needs, paces, and learning styles, ultimately fostering greater autonomy and efficacy.

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