

# The Role of Artificial Intelligence in Teaching

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**Abstract:** This paper examines how the growing availability of Artificial Intelligence is transforming various aspects of life, with a particular focus on education. While the use of Artificial Intelligence in education is expanding, the full scope of its applications and associated challenges remains unclear. Drawing on empirical and theoretical studies, we explore the potential benefits, challenges, and future opportunities of integrating Artificial Intelligence in educational settings. Our findings show that organizations such as UNESCO are adopting Artificial Intelligence in education, with applications including content development, assignments, automated grading, and student support. However, increased reliance on Artificial Intelligence may lead to student dependency. Benefits include greater flexibility regarding time and location, as well as a shift in the teacher's role toward facilitation. We conclude that Artificial Intelligence will play an increasingly significant role in education, though challenges must be addressed to fully realize its benefits.

**Keywords:** Artificial Intelligence, Teaching.

**Introduction** - Artificial Intelligence, which relies on machine learning and algorithms, offers significant benefits by increasing efficiency and productivity. It saves time, reduces effort, and enhances outcomes, yet raises concerns about data security, privacy, and unemployment. As AI technologies advance, their influence is seen not only in automation but also in decision-making processes, reshaping how organizations and individuals approach problem-solving. The rapid adoption of AI in various sectors demonstrates its versatility, from streamlining administrative tasks to providing personalized recommendations. As it becomes integral in daily life and fields such as education, this article examines its role in education, focusing on applications, benefits, challenges, and future opportunities.

Smart learning technologies based on artificial intelligence, such as intelligent tutoring systems, adaptive platforms, and virtual assistants, personalize instruction to improve student outcomes. AI-powered assessment tools can analyze student performance data, identify learning gaps, and suggest targeted interventions, enabling educators to tailor support more effectively. Virtual classrooms and automated grading systems also streamline administrative tasks, allowing teachers to focus on more meaningful interactions with students. However, excessive reliance on these technologies can diminish human interaction, impacting social and emotional development. Achieving success in education with AI requires balancing technical, ethical, and human considerations.

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

of Artificial Intelligence is progressively becoming more prominent in the educational sector. At first, it was referred to as Artificial Intelligence literacy, which signifies the skill to comprehend and utilize Artificial Intelligence applications without manual assistance. The phrase Artificial Intelligence was first introduced in an online article in 2015 and has since become part of a lengthy list of suggested literacies aimed at representing the grasp of specific technological frameworks, such as "media literacy" or "data literacy." Artificial Intelligence cultivates a collection of skills that allow individuals to critically assess Artificial Intelligence technologies and use them effectively as a resource for communication and collaboration. By employing artificial intelligence, learners can discover how it can logically address challenges, gain knowledge independently, make choices, and communicate. The notion of Artificial Intelligence in education has progressed as part of the integration of learning management systems, which enhance teaching, learning, decision-making, and provide virtual assistance for tailored educational experiences.

Artificial intelligence in education is reshaping how students learn, how teachers teach, and how institutions manage learning systems, with powerful benefits but also serious ethical and practical challenges that must be governed carefully. Artificial intelligence analyses performance data to adjust content, pace, and difficulty, helping each learner follow an individual path instead of a one size fits all syllabus. Intelligent tutoring and feedback: Intelligent tutoring systems, learning apps, and chatbots give on demand explanations, practice, and real time

feedback outside classroom hours. If we talking about Administrative and teaching support, Artificial intelligence automates routine tasks such as grading objective tests, tracking attendance, and monitoring progress, freeing teachers' time for higher order pedagogical work and mentoring. In Content creation and course design Artificial intelligence can draft lesson plans, quizzes, summaries, and alternative explanations, and help design syllabi and assessments tailored to diverse learners. Virtual assistants and learning analytics can be easily done by Artificial intelligence, its driven dashboards flag at risk students early, support interventions, and power virtual assistants that answer routine student queries 24/7. Tools such as speech to text, text to speech, translation, and adaptive interfaces support learners with disabilities and those in remote or under resourced settings. Enhanced engagement and effectiveness: Adaptive activities, simulations, and interactive environments support deeper understanding and self paced learning, improving motivation and outcomes when well designed. When infrastructure exists, AI can extend quality learning opportunities beyond traditional classrooms, including higher education, lifelong learning, and remote communities. Also in Data informed pedagogy, Artificial intelligence learning analytics help teachers identify misconceptions, skill gaps, and patterns of disengagement, enabling targeted support rather than purely intuition based decisions.

#### Literature Review:

**According to Kabudi and Olsen (2021)**, Artificial Intelligence can be even more effective in providing individually tailored instruction to students, meeting their cognitive and learning needs. Furthermore, if teachers utilize artificial intelligence-based teaching methods and techniques, they can deliver learning materials in a format appropriate for students.

**Chen (2020)**, suggests that Artificial Intelligence can also provide students with the opportunity to interact with chatbots, allowing them to learn and resolve issues, thereby facilitating independent learning.

**Miao and Shiohira (2021)**, point out that the growing role of Artificial Intelligence in education has led to the introduction of the concept of Artificial Intelligence education, in line with the latest educational standards, to address digital literacy levels worldwide.

**Research Methodology:** This Research is literature-based study using Primary and Secondary Sources. Interviews, Group Discussions, and Case Studies were used to collect Primary Sources, and Daily Newspapers, Monthly Magazines, Government Reports, Education-Related Policies, Scholarly Articles, etc. were used to collect Secondary Sources.

#### Challenges:

**1. Influence of the Ancient Education System** - The ancient education system has had a profound impact on Indian society, education, and culture. As a result, Indian

society faces difficulties in adopting modernity and scientific thinking and is reluctant to adopt new teaching methods and technologies.

**2. Influence of Moral Values** - Moral values are considered to have a significant influence on society, and people in society consider the use of Artificial Intelligence in teaching to be part of Western educational systems and consider its use to be against their moral values.

**3. Loss of trust between Teachers and Students** - Due to modernity and the excessive use of Artificial Intelligence in teaching, a clear decline in trust and intimacy between teachers and students can often be seen in educational institutions, as students complete their work through Artificial Intelligence and completely disregard the teacher's usefulness.

#### Suggestions:

**1. Integration of Traditional and Artificial Intelligence Methods** - Integration of traditional and Artificial Intelligence methods has become a vital need in the education sector. Together, these two methods can provide students with a balanced development of knowledge, values, skills, and modernity, along with the development of new technologies.

**2. Integration of Artificial Intelligence into the Curriculum** - Integrating Artificial Intelligence teaching methods into the curriculum is crucial for today's education system, as it will promote students' holistic development and a sense of adaptability to modernity.

**3. Establishing a Teaching-Research Link through Artificial Intelligence** - Establishing a link between teaching and research through Artificial Intelligence has become a crucial need in modern education. Artificial Intelligence is no longer limited to providing information; it also provides a comprehensive platform for dialogue and collaboration, creating a deeper and more effective link between teaching and research.

**Conclusion:** Artificial Intelligence has helped India become scientific, logical, and globally competitive. Today, there is a need to balance ancient civilization and modern technologies of Artificial Intelligence in the Indian education system. Through Artificial Intelligence, we can find inspiration to think about balancing Indianness and modernity in education reform or social development, especially when we want to promote new teaching methods among students. It is crucial to incorporate Artificial Intelligence into the curriculum and practices of educational institutions. Teachers must also learn to use Artificial Intelligence so that both students and teachers can work in an inclusive manner for academic success. In today's times, Artificial Intelligence in education is becoming a role model for the new generation. The use of Artificial Intelligence in teaching is essential for social awareness and policy making. Therefore, it is our responsibility and fundamental duty to comprehensively reform education, social thinking, and policymaking to ensure equal recognition of Artificial Intelligence.

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