



The Significance Of Artificial Intelligence In Education: A Critical Evaluation

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Abstract: In the 21st century, the technological revolution has ushered in a new era not only in every sphere of life but also in the field of education. The rapidly evolving new relationship between artificial intelligence (AI) and education has inspired influential policies and institutional changes. AI is having a rapidly growing impact on education. The integration of AI into the educational framework has marked a significant milestone in the history of educational revolution. AI is increasingly playing an important role in both teaching–learning systems and management practices. Using conceptual frameworks, content analysis, and qualitative and effective methods of literature review, this research paper critically evaluates the relevance of AI in the light of education. The main points of this study include the need for AI, its utility, opportunities, and the challenges associated with it. Philosophical perspectives and ethical considerations in the implementation of AI technology have also been discussed. The potential of AI in informing personalized learning, enhancing intelligent learning, and supporting data-driven decision-making has been critically examined. This research paper explores the transformative role of teachers amid the usefulness, expansion, and increasing centrality of AI, emphasizing the need to equip teachers with essential skills that promote critical thinking, creativity, and innovation. Through critical evaluation, it has been found that AI holds immense potential to create harmonious and customized learning experiences. At the same time, it brings a range of challenges and concerns such as the possibility of diminishing the human face of education, ethical issues, threats to data privacy, and algorithmic bias. Based on the findings, the paper recommends that stakeholders in the field of education should adopt a balanced approach toward the use of AI in learning and educational management. Within this approach, AI should be positioned as a supportive resource rather than as a primary source of information and knowledge. In this manner, AI acts as a complement to time-tested traditional values, enabling the holistic development of both education and learners. The challenges associated with AI can be resolved only when users and educational management employ its transformative capabilities with ethical considerations, a process that requires a long and sustained effort.

Key Words: Artificial Intelligence, Significance

Introduction

Artificial intelligence in higher education is important for both teachers and students because the application of such technologies can promote highly flexible learning solutions for students without any limitations. With the help of AI, universities around the world have witnessed an increase in the number of students due to enhanced flexibility and speed. Although its implementation in teaching has proven to be relatively expensive, it is still cost-effective compared to other manual tasks. For a long time, AI use among college students has been far more effective than the traditionally conducted education and manually performed tasks.

Developed countries of the world have already successfully adopted the process of artificial intelligence. However, developing countries are still in the initial stages of AI implementation compared to developed nations. Weak infrastructure, lack of access to information, lack of institutional support, shortage of essential resources, and poor technical skills are some of the barriers for developing countries that wish to implement artificial intelligence as a tool in higher education.

AI is used in the education system for grading, where teachers can mechanize the grading of students based on certain predefined questions. AI can also be used in adaptive and personalized learning to meet the needs of students. It helps teachers assess students' understanding during their lectures and empowers them to give appropriate cues to students. It also acts as a tutor for students and helps them learn concepts more easily.

Artificial Intelligence

Artificial Intelligence (AI) is the simulation of human knowledge processes, such as speech and visual recognition, language translation, and virtual decision-making by machines and robots. The ability of machines to think and act like humans has given AI an exceptional place in all fields. From smart sensors to personal assistants, AI is present in almost every aspect of our lives.

Objectives

- To understand the concept of AI.
- To study the role of AI in the field of education.
- To examine the usefulness of AI in education.
- To identify the various challenges of AI in the field of education.

Usefulness of AI in Education

- **Personalized Learning-** It is widely accepted that adapting the teaching and learning process to the characteristics, needs, and interests of each student is essential to improve their motivation, engagement, understanding, and academic performance. However, promoting personalized learning remains one of the greatest challenges in education. Even in leading countries in the field of education, classrooms are often so large that teachers do not have enough time to focus on each student's individual needs. Similarly, educational content is usually uniform and often fails to engage students. In this context, generative AI is considered a significant technology that enables personalized learning. By analyzing large amounts of student data, generative AI tools can identify students' strengths and weaknesses and create new personalized content and assignments tailored to their needs. This information is valuable not only for AI assistants in preparing appropriate material but also for teachers, who can identify students' potential difficulties and design their lessons accordingly.

- **Enhanced Engagement-** Generative AI can also be an effective technique to increase student engagement. Every student is different, and a traditional one-size-fits-all curriculum may not be suitable for everyone. Preferences and learning styles also play an important role. With generative AI, students can learn exactly what suits their interests, needs, and level. Videos and images can replace text-heavy lessons, practice can replace theory, and quizzes can replace long assignments to make learning more engaging—offering endless possibilities with the help of AI.
- **Education for All-** Generative AI has the potential to democratize education and make learning opportunities more accessible to students. It can be particularly effective in highly diverse classrooms where students come from different backgrounds, socioeconomic conditions, and languages. By helping teachers provide personalized and adaptive learning experiences to all students, generative AI can play a crucial role in promoting an inclusive and accessible learning environment.
- **Administrative Efficiency-** A teacher's daily life is not limited to teaching alone. Many administrative tasks require time and energy, including evaluating assignments and exams, preparing lessons and materials, filling forms, and writing reports. Generative AI can streamline and speed up many of these tasks, reducing teachers' workload and enabling them to focus more on students' needs.
- **Support for Creative and Critical Thinking-** Generative AI can be a valuable tool for enhancing students' capacity for higher-order thinking. By creating complex and unconventional scenarios across subjects, generative AI can challenge students' existing perspectives and inspire them to think critically to solve problems. For creativity, AI tools can assist in tasks like story writing, and the creation of images, videos, or music. When used wisely, AI can foster intellectual creativity, encourage innovation in specific fields, and help overcome barriers like mental blocks during creative processes.
- **Improving the Quality of Teacher Education-** AI can play a significant role in improving the quality of teacher education. In India, AI has become an integral part of smart ICT-based apps designed for digital education. A major challenge in teacher education is ensuring that teachers receive a strong foundation in the subjects they teach. AI can provide teachers with high-quality educational resources and teaching materials tailored to their individual needs. It can help identify knowledge gaps and provide feedback on areas requiring improvement. Teachers can also use AI tools to enhance their teaching skills.
- **Useful for Teachers' Skill Enhancement-** AI can enhance teachers' skills by providing a variety of tools and resources that help them become better educators. For example, AI-powered assessment tools can offer real-time feedback on student performance, allowing teachers to adjust their teaching strategies. AI can also assist teachers in personalizing learning and designing lessons based on students' specific needs.
- **Support for Continuous Professional Development-** The National Education Policy (NEP) 2020 emphasizes the professional development of teachers. AI can provide continuous professional development opportunities by offering performance-based feedback and highlighting areas where teachers may need further improvement. It can also suggest courses and training programs tailored to the specific needs of individual teachers.

Challenges of Artificial Intelligence in Education

AI is developing rapidly in India, and although educational systems are adopting it, several challenges remain. Skill development and training programs are being affected because existing training schemes may become inadequate after the expansion of AI education. Additionally, there is a shortage of teachers and trainers skilled in artificial intelligence. The country also lacks sufficient infrastructure for AI-based education.

In the higher education sector, many universities still do not offer AI education or advanced AI-integrated courses. Moreover, AI raises concerns related to ethics and privacy. Issues such as data security, accuracy, transparency, and accountability pose significant challenges. There are also concerns related to privacy, ethical considerations, overall efficiency, career prospects, human values, and unclear government policies. All these issues together make AI in education a matter of concern.

Review of Related Literature

Vellaichamy, K. (2023) conducted research on “Artificial Intelligence and Its Importance in Education: A Theoretical Perspective”, which revealed that along with the positive aspects of AI, there are some challenges in its use. The researcher predicts that in the near future, AI in education will progress in multiple directions, provided it is used carefully, which can positively influence its performance and adaptability.

Amrani, Mundhir, et al. (2025) carried out a study on “A Critical Evaluation of the Use of Artificial Intelligence in Learning”. Their research highlights the role of AI in personalized learning and discusses its benefits and challenges in higher education.

Rastogi, Himanshu (2024) in his study “A Critical Analysis of the Use of Artificial Intelligence in the Education Sector” found that AI can help students build a bright future. Through AI, students receive personalized feedback that guides them toward their goals.

G. N. Ekeh and G. C. Anebuchi (2025), in their study “The Significance of Artificial Intelligence in Teaching and Educational Management in the Light of Educational Philosophy: A Critical Evaluation”, examined the impact of AI on learning, educational management, and ethical considerations within the philosophy of education.

Holmes, Wayne; Muta, Anna; and Hillman, Schiff (2025) undertook a critical analysis in “Critical Studies on Artificial Intelligence and Education: Betting on the Ground Realities”. The study concludes that there is a need to renew and share meaningful education, which can lead to a renaissance in the field of education.

Sharma, Sudha (2024) in her study “Usefulness and Problems of Artificial Intelligence in Education” accepted AI as a positive and advanced tool. According to her research, AI can provide easy and accessible learning resources to both students and teachers.

Arya, Harish & Ruchi (2018) in their work “Impact of Artificial Intelligence in Education” found that AI has influenced all aspects of education, including teaching, learning, administration, and management. The study suggests that AI can help enhance decision-making, management, and leadership abilities.

Sharma, Sunita (2025) completed her research titled “Analysis of the Utility of Artificial Intelligence (AI) in Modern Education”. The main objectives were to analyze the usefulness of AI in modern education, study the changes brought by AI, examine the quality and improvements in education due to AI, and identify the problems arising from its use. The study concludes that training, policy formulation, and adequate resources are essential for the successful implementation of AI in education in order to reduce its challenges.

Conclusion

AI has given a new dimension to the modern education system. It is making education more personalized, accessible, and effective. However, for its efficient implementation, proper training, policy formulation, and the availability of adequate resources are essential. If these challenges are addressed, AI can bring revolutionary changes to the field of education.

Artificial Intelligence can be used as an educational tool that guides students toward their goals by providing personalized feedback on homework, quizzes, and other tasks based on AI algorithms. AI has the potential to make everyone's life easier through automation, as it is capable of handling small and repetitive

tasks. AI is an important driver for transformation in education. With its numerous advantages, AI can help students shape a brighter future.

Recommendations

In the light of the conclusion, the following recommendations are presented:

- Education stakeholders should adopt a balanced approach toward the use of AI in learning and educational management.
- AI should be given a supportive role as a source of information and knowledge in the educational process.
- Education should be directed toward playing a complementary role to time-tested traditional values, through which efforts can be made to ensure the holistic development of learners and the well-being of society.
- Teachers should be provided training for the effective use of AI.
- Digital infrastructure should be strengthened in rural and underdeveloped areas.
- The ethical and social aspects of AI should be considered during policy formulation.
- A system of regular evaluation and review should be established for monitoring the use of AI in education.

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