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HUMAN CREATIVITY & CRITICAL
THINKING IN THE AGE OF ARTIFICIAL
INTELLIGENCE FOR A BETTER

FUTURE



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By

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MTC Global ® : Brief Introduction

AI IN EDUCATION: CHALLENGES AND OPPORTUNITIES

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Abstract

The integration of Artificial Intelligence (AI) into education has sparked significant debate about its potential to transform the learning landscape. AI offers promising benefits, including personalized learning, the automation of administrative tasks, and the enhancement of student engagement. To ensure that AI's integration benefits all, a balanced approach is necessary. Policymakers, educators, and technology developers must collaborate to create a framework that promotes the ethical use of AI while preserving the core human aspects of teaching.

Keywords: AI, personalised learning, teaching tools

Introduction

Education has been transformed with the integration of the Artificial Intelligence (AI) and the traditional teaching methods. In early days of Gurukul education was held with lot of traditional aspects. Everything was learnt in practical in nature. The major educational subject was life skills. Hence practical learning was the concept learnt through education. But as the civilization grew the role of education has seen different forms. The dimensional aspects of education has changed a lot. Technological aspect has gained lot of importance which highlights the modern aspects in the field of education.

Concepts like personalized learning, along with technological skills have started to play a vital role. AI-Powered tools have reshaped the delivery and access of knowledge. Technology have started to contribute a lot towards students engagement in learning. The technologies have the power to make learning efficient and automate various tasks relating to learning (Al-Zahrani, A., & Alasmari, T. M. (2024). Different tools that

are available in various learning platforms, are adaptable in nature.

AI tools tries to address the enduring challenges in education and helps to provide solutions in modern aspects. Individual learning experience like students and teachers have gained lot of positive experiences through AI learning AI in education have led to automated educational environment. This environment has been prevalent in European countries for long years. After COVID-19 India too have started to experience technology oriented and automated learning.

AI enabled learning leads to can enable the content delivery to customize the content according to the students needs. AI powered chatbots and virtual assistants help the students by providing instant feedback. The knowledge level of students and their capability increases to which helps the students to nurture their creative and critical thinking which is the need of the hour.

The Rise of AI in Education

Artificial intelligence, which began as simple digital tools have provided computer and technology oriented learning. This has created a robust learning environment and have led to radical change in the field of education. AI has an impact in various fields like content development, administrative efficiency and student engagement. This has led to Pedagogical advancements and helps to revolutionize the education process (Al-Zahrani AM 2023).

The advent of simple learning management systems at the close of the 20th century is when this technological revolution began. These early systems, which provided basic but essential features like digital document storage and assignment administration, were education's initial foray into the digital era. Problem solving, knowledge of programing, statistics are the basic skill sets required for technology access. But the time has grown where the development of AI Skills have let to non-engineers too. Automated user Interface programming has led to easier adaptability and easy access of the technology oriented applications. Along with the above mentioned skills, other prevalent skill sets like critical thinking, communication, emotional intelligence, domain based specific knowledge have led to AI advancements.

According to UNESCO to contemporary education personalized learning have improved with various approaches. These advance approaches have led to capacity building of the learners. AI has been one of the important forecasting techniques, where it helps to forecast the future educational trends (Harris, J. (2024). Hence this reachability was said to be possible. It has also led to enhanced individual approach. In education students aspect is considered to be one of the major developments towards learning. Learners have started to experience the revolution in the e-learning aspect.

Another innovation in educational technology is AI-powered tutoring programs, which provide 24/7 learning assistance via advanced virtual assistants. Knewton and DreamBox (Brown, S., & Martinez, L. (2023). have created intelligent learning systems based on AI. Chatbots related learning and practical implementation have provided users and learners with good self-learning skills and experience.

Revolutionizing Learning: Opportunities

Educational opportunities

The various opportunities have been created by AI origin in the educational industry. AI have created abroad education opportunities for students who possess the intention to study abroad. Advanced countries like USA, Germany have led to advancements in AI education and lot of investments in the AI infrastructure facilities has been carried out by various countries.

Personalized Learning

There is war for talents everywhere. Personalized learning is an educational technique helps to face such a challenge. We are able to experience through AI in this modern world. It provides real-time feedback to the learners. Tracking the learners interest, mode of education, all are possible through AI.

Enhanced Accessibility

AI leads to enhanced learning through AI tools. Machine learning technologies, speech recognition, Natural Language processing (NLP), Computer vision, Robotic and automation tools have provided lot of enhancement to the learners (Garcia, R., & Thompson, P. (2023).

Streamlining Administrative Tasks

The potential of artificial intelligence to automate repetitive administrative tasks is among its most significant benefits for educators and administrators. Administrative tasks like scheduling, keeping track of attendance, and grading assignments are carried out through AI. AI tools like Gradescope generate thorough performance reports and improve everyday efficiency and effectiveness through daily feedback and open-ended questions.

AI Challenges

Job Displacement and Redundancy

The fear of artificial intelligence to replace teachers is one of the biggest issues. The work of teachers is normally carried out by AI-powered teaching assistants, virtual classrooms. But the personal touch of the teachers cannot be replaced. Teachers customize and tailor to make educational-oriented tasks that is doubtful to be carried out by AI.

Training for teachers in AI-enhanced tools

Lack of experts in AI-enhanced tools is said to be the concern that needs to be looked into. Furthermore, these problems are made worse by biases and technological flaws in AI algorithms.

Striking a Balance: The Role of Teachers in an AI-Powered Classroom

The rise of artificial intelligence (AI) in education has spurred arguments regarding teachers' evolving roles in technology-driven classrooms (Davis, K. (2022)). Striking a balance between learning, practice and implementing AI-related tools is very important in modern days. Thus, proper implementation leads to professional development and improvement.

Conclusion

AI in education presents both significant challenges and exciting opportunities. It has the potential to revolutionize teaching and learning by offering various personalized, efficient, and scalable solutions and benefits.

References

Anderson, M., & Johnson, R. (2023). "The Impact of AI on Educational Systems: A Global Perspective." *Journal of Educational Technology*, 45(3), 278-295.

Al-Zahrani AM (2023) The impact of generative AI tools on researchers and research: Implications for academia in higher education. *Innovations in Education and Teaching International*, 1-15. <https://doi.org/10.1080/14703297.2023.2271445>

Brown, S., & Martinez, L. (2023). "DreamBox Learning: A Case Study in Adaptive Learning Technologies." *Educational Technology Research and Development*, 71(2), 145-162.

Davis, K. (2022). "Teacher Professional Development in the Age of AI." *Teaching and Teacher Education*, 112, 103-121.

Garcia, R., & Thompson, P. (2023). "AI-Powered Assessment Tools: Impact on Student Performance." *Assessment in Education: Principles, Policy & Practice*, 30(2), 167-184.

Harris, J. (2024). "Market Analysis: AI in Education Industry 2023-2030." *Educational Technology Market Report*, 15(1), 45-62.