

Artificial Intelligence and its Significance in Education: A Theoretical Perspectives

OPEN ACCESS

Volume: 12

Special Issue: 1

Month: December

Year: 2023

P-ISSN: 2320-2645

E-ISSN: 2582-3531

Received: 17.10.2023

Accepted: 05.12.2023

Published: 14.12.2023

Citation:

Vellaichamy, K.
“Artificial Intelligence
and Its Significance in
Education: A Theoretical
Perspectives.” *Shanlax
International Journal of
English*, vol. 12, no. S1,
2023, pp. 452–56.

DOI:

[https://doi.org/10.34293/
rtdh.v12iS1-Dec.118](https://doi.org/10.34293/rtdh.v12iS1-Dec.118)

Dr. K. Vellaichamy

*Assistant Professor, Department of Education
Madurai Kamaraj University, Madurai*

Abstract

Artificial intelligence (AI) has the potential to completely transform education in a number of ways, increasing accessibility, efficiency, and personalization of instruction. AI's place in education, one of the newest areas in educational technology has always held great importance. From the advent of automated learning to robotic. AI and answer sheet analysis systems have long benefited instructors and students. In this study, we have examined the numerous analytical advancements applied throughout the globe, like computer science methods applied in the field of education. Our Results show that artificial intelligence (AI) forms the foundation of all information science-enabled clever educational programs. These systems support the growth of attributes like self-awareness, ability to answer complex questions, ability to divide conflict statements, ability to create creative queries, and aptitude for making decisions.

Keywords: Artificial Intelligence and Education

Introduction

AI first appeared between 1952 and 1956. Logic theorist, the first artificial intelligence program, was developed in 1955 by Allen Newell and Herbert A. Simon. 38 to 52 mathematical theorems have been proven by this program, and it also finds news and more persuasive evidence. The man known as the father of artificial intelligence is John McCarthy. He was the one who first coined the term artificial intelligence. The 1960s saw the introduction of artificial intelligence into India through the research of professor H.N. Mahabala. The UNDP's 1986 creation of knowledge-based computing systems also made it possible for India to concentrate on AI. It can automate a lot of laborious administrative duties related to teaching and learning.

The psychologist B.F. Skinner, who taught psychology at Harvard University from 1948 until his retirement in 1974, is credited with founding the use of AI in education. Teachers are under appreciated and given a ton of paperwork in some of the countries. Artificial Minds in Strong learning environments and rewarding interactive experiences have been produced by education for college students throughout the years. Technology utilizing artificial intelligence has been used in education. During the last 20 years, it is a great resource for educators. It prepares students for the future by facilitating the transformational potential and comprehension of artificial intelligence and machine learning greater inclusivity in education.

Artificial intelligence is completely changing education. It allows teachers to focus on developing students' minds rather than checking copies and can customize the learning process for each individual student. Transforming the educational process of teaching and learning. The teaching strategies and the relationship exchanged between teachers and students have changed dramatically. Teaching a strategy used in the world has gotten more organized to produce better, more streamlined outcomes. This change can be primarily attributed to technology's continuous intervention. Following on from with the development of technology, we are seeing a paradigm change in the way that people teach and learn. The dynamic between teachers and students is evolving, with educators having grown more personable and adept at comprehending their students.

AI's Role and Goals in Education

Artificial intelligence facilitates better decision-making by analysing vast volumes of data and offering insights that humans might overlook. By quickly processing enormous volumes of data. Artificial Intelligence algorithms have the capacity to recognize patterns and correlations that would be hard or impossible for people to find. Artificial intelligence facilitates determining what a student knows and doesn't know, creating a customized study plan for every student taking into account the knowledge gaps. Artificial Intelligence thus customizes research in accordance with pupils' unique needs, boosting their productivity.

Significance of Artificial Intelligence in Education

Artificial intelligence holds promise for addressing some of the most pressing issues facing education today, fostering creative teaching and learning approaches, and accelerating educational advancement. Artificial intelligence refers to the ability of machines, particularly computer systems, to simulate human intelligence processes. Expert systems, machine learning, speech recognition, and vision are some of the specific applications of artificial intelligence.

Definition of AI in Education

According to Herbert Simon (1969) "Natural science is knowledge about natural objects and phenomena we ask whether there cannot also be artificial science – knowledge about artificial objects and phenomena".

According to Hari Krishna ariya (2018) "Teachers will not be replaced by technology, but teachers who do not use technology will be replaced by those who do".

AI's Advantages for Education

Learners are already benefiting greatly from AI, some of which include:

- Analyzing learning gaps
- Personalization
- Instantaneous question answers
- Timely feedback and just-in-time learning
- Engagement
- Time savings
- Improved accessibility
- Idea and content generation

AI's Application in Education

For education to be able to lead the nation toward a better future, high quality education is necessary. The education sector in India needs to modify its approach as the impact of AI on

education is increasing daily in order to support the development of young minds into tomorrow's capable leaders. Incorporating artificial intelligence and machine learning into Indian education will be essential to realizing the nation's goals. Increasing the number of qualified teachers is one of these objectives. As previously mentioned, artificial intelligence applications in education, such as text-to-speech and real-time text translation systems, can help teachers become more efficient by automating tedious chores like taking attendance.

Artificial Intelligence's Place in Education

The fundamental positions are:

- Use artificial intelligence to automate fundamental educational tasks
- Provide extra assistance to students through AI tutoring
- AI-driven programs that provide teachers and students with insightful feedback.
- Identifying areas for improvement in the AI course
- AI may alter the role of the instructor
- Use AI to personalize instruction
- Using AI to create intelligent content
- Guarantee that students with special needs have access to education
- All-encompassing access
- Evaluation and marking
- Enhanced involvement of students
- Adapting educational software to the needs of students
- It can identify areas in which courses require improvement.
- It is changing the ways in which we locate and use information.
- Trial and error learning can be less scary with AI.
- AI can assist students in learning fundamental skills current developments in AI

AI's Difficulties for Education

One of the challenges is creating a public policy on AI for development that is inclusive:

- AI in education: Equity and Inclusion
- Equipping educators for AI-powered learning
- Create inclusive and high-quality data systems.
- Transparency, ethics, and advancing AI research in education
- Data security and emphasis on teaching faculty and students digital literacy
- Provide for AI technology integration in the curriculum
- Developing critical thinking abilities and guaranteeing the accuracy and applicability of information.

AI Applications in Education

Methodologies for AI-assisted learning have already had an impact on education:

- Personalized education and learning support
- Enhanced accessibility and AI tutoring
- Automated and enhanced grading
- Supporting educators with administrative duties
- AI-powered writing assistant and location-based technologies
- Differentiated and individualized learning and conversation technologies
- Image recognition and processing and task automation.

AI's Role in Education in the Future

Researchers predict that in the near future, AI in education will advance in three directions:

Customization of Performance

As artificial intelligence (AI) technology and computing power continue to advance, personalized curricula can be created by gathering and synthesizing news data. AI solutions like Bright Space Insight can assist instructors in tracking, measuring, and monitoring students' progress as they go through their learning journeys.

Bias for Violations

Human bias has always been a problem for AI tools as well as a barrier to the educational system. In order to remove bias, artificial intelligence (AI) in education will eventually look for ways to evaluate assignments and exams based on predetermined standards.

Cooperation

College professors typically hold a master's degree in their discipline and a concentration in development studies. However, the administrative work frequently amounts to a fruitless attempt to patch things up with the students. Future smart classrooms with AI support can help with this issue by giving teachers the support they need to perform at their highest level.

Benefits of Artificial Intelligence in Education

Personalized education and organized information are two benefits of AI in the education sector.

- Enormous support for students with exceptional needs
- Integrated education and intelligent tutoring system Virtual reality education and essay grading software
- Enhancing academic standards and quality of education
- Reducing human error and enhancing teamwork
- Automating tasks
- Creating intelligent content and visualizing data

AI's Drawbacks for Education

The drawbacks of AI in the classroom are:

- Less interpersonal contact and teacher unemployment
- Having financial troubles and a lack of emotional intelligence
- AI addiction and communication issues
- Lessens students' ability to think
- Poor maintenance and teacher unemployment
- Insufficient funds and indolent students

Conclusion

In summary, AI can be applied in many different contexts and has many positive side effects. However, there are a few issues with it. We are eager to see how artificial intelligence will change the classroom in the upcoming year and don't currently believe that using it in education is too dangerous. The aforementioned examples demonstrate how it could benefit educators, school administrators, and students in a variety of ways, and we are eager for everyone to receive an education.

References

1. Boudhrioua, C. M. Bastein, D. Torkamaneh, F. Belzile (2020). Genome-wide association mapping of sclerotinasclerotiorum resistance in soybean using whole -genome resequencing data BMC plant Biol., 20, 125, 10.1186 /s12870-02002401-8.
2. Esposito, S. D. Carputo, T. Cardi, P. Tripodi (2020). Applications and trends of machine learning in genomics and phenomics for next – generation breeding plants, 9, 10.3390/plants 9010034.
3. Bissio, R. (2018). Vector of hope, source of fear. Spotlight sustain, Dev 77-86.
4. Helbing, D. & Pournaras, E. (2015). Society: build digital democracy, Nature 527, 33-34.
5. Tegmark, M. (2017). Life 3.0: Being Human in the age of AI (Random House Audio publishing Group).