

An Exploratory Study on The Impact of Artificial Intelligence on Students' Learning

OPEN ACCESS

Volume: 3

Issue: Special issue 2

Month: February

Year: 2025

ISSN: 2583-7117

Citation:

Dr. Nandita Sharma, "An Exploratory Study on The Impact of Artificial Intelligence on Students' Learning" International Journal of Innovations In Science Engineering And Management, vol. 3, no. Special Issue 2, 2025, pp.440-443.

DOI:

10.69968/ijisem.2024v3si2440-443



This work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

Dr. Nandita Sharma¹

¹Assistant Professor (Contractual), Department of Business Administration MJPRU, Bareilly, India.

Abstract

Artificial Intelligence is a digital computer's capacity to achieve tasks commonly related to intelligent beings. As everyone knows the human brain understands and responds to everything very quickly which a machine cannot. The machine can not react and respond very fast just like a human. Human learn something and respond accordingly due to their cognitive learning. Machines cannot react until and unless it receive instructions from human beings. Learning means a permanent change in behavior through observation, experiences etc. Students' learning is affected by artificial intelligence in the current era. Today students search for everything on the internet even though they do not like to inculcate themselves in schools or colleges because of their dependency on computer systems. Artificial Intelligence provides various learning platforms such as personal tutors, guidance etc. Artificial Intelligence is also helpful in understanding the students' progress time to time and giving feedback accordingly. Overdependency on Artificial Intelligence is harmful for students because it is reducing critical thinking ability and decision-making ability among student day by day. There will come a time when humans will become slaves of machines and robots will rule the entire earth. The objective behind this research study is to understand the impact of artificial intelligence on students learning in the current scenario.

Keyword: Artificial Intelligence, Student Learning.

NEED OF THE STUDY

In the current scenario, everybody depends on artificial intelligence. It is playing a pivotal role in every sector, such as health care, education, the hospitality sector, finance etc. Artificial intelligence is the development of computer systems that require human intelligence. In each and every task such as learning, reasoning, and problem solving humans need artificial intelligence. With the help of AI, humans can easily perform any task without spending much time. Everything can be easily done with Artificial Intelligence within a limited time. In today's world AI is transforming various sectors by increasing efficiency, accuracy, and innovation. In the healthcare sector, artificial intelligence helps to diagnose very complicated diseases. AI-powered algorithms analyze medical images and patient data to diagnose problems very accurately. It is very helpful to understand the medical history of a patient by using AI techniques which can be based on genetic profiles. Artificial intelligence is also useful in manufacturing sectors where it is easy to predict equipment failures and can help to improve overall efficiency. Algorithms used by artificial intelligence optimize supply chain operations and predict demand of the product in the market which can be efficiently useful to manage inventory in an organization previously it took lots of time to manage inventory physically. Agriculture sector is the backbone of India, Artificial intelligence is useful for various agricultural activities such as fertilization, irrigation techniques, and weather forecast which enable farmers to take various decisions regarding harvesting on time that can be useful to reduce time and cost. Today where lots of digital frauds are happening in India that can be prevent by inculcating artificial intelligence system such as prevent cybercrime, identifying potential threats, etc.

Special Issue on AI, Life Skills and Sustainability

Artificial Intelligence in the Education Sector

The brain plays the most important role in the human body because by utilizing the brain a human can do many things and if this work is done by a machine then the work becomes very easy. Artificial intelligence has been formed to reduce human error and reduce time and cost by using human intelligence. In the education sector, Artificial learning is useful in various ways such as customized learning where learning pedagogy is based on the student's unique learning needs, interests, etc. Today students do not prefer such traditional methods of education where teachers deliver lectures only. They can use unique teaching methods to learn updated concepts. Smart classrooms are available today which can minimize time and provide upcoming knowledge to students. AI based teaching improves interactions with students with special needs through the use of adaptive technologies. It facilitates tasks such as assessing, grading, responding to student inquiries, and so on.

The undertaken research study focuses on the impact of artificial intelligence on students' learning.

LITERATURE REVIEW

Brave A. Sugiarso, Asep Nurjain, Loso Judijanto, Luluk Firdausiyah, Ardian AI Hidayat (March 2024) have conducted research titled "The Effect of Artificial Intelligence in Improving Student Learning Achievement in High School". The research paper was published in World Psychology. The objective of the study was to analyze the influence of artificial intelligence on student achievement. The study was analyzed by collecting the data through Google Forms. The study found that artificial intelligence is helpful to assist teachers in the development of students. It is helpful for students to develop their competence. The research paper focused on the students of those who are studying in class 10th. They have not included higher studies in their research paper.

Prof. Neha Saini (2023) has conducted research titled "Artificial Intelligence and its applications". The conceptual research paper was published in "International Journal for Research Trends and Innovation". The study focused on various fields where artificial intelligence plays an active role. The researcher has not included other significant parts of artificial intelligence such as its impact on society specially students.

Sritha Vemuri, Thirjeet Singh, Ateet Anmol Anand, Manshu Agrawal, Aditi Doshi (2023) have conducted a research paper titled "Role of Artificial Intelligence in Education". The study focused on the role of artificial intelligence in education. The study found that AI is making a revolutionary change in the education sector. It is not only increasing the effectiveness of teachers but also students' engagement. Students are able to inculcate skills and abilities through artificial intelligence. It is also helpful to provide a flexible learning platform to the student.

OBJECTIVE OF THE STUDY

- To understand the role of artificial intelligence in the education sector.
- To understand the impact of artificial intelligence on students' learning.

Role And Impact of Artificial Intelligence On Students' Learning

Learning is basically the process of changing the behavior of an individual permanently. Learning is always acquired when the learner changes his behavior based on his own experiences or observations. In today's world, artificial intelligence is playing a pivotal role in learning. Students have flexible and multiple options today from where they can easily learn updated knowledge. This can be only possible through artificial intelligence. The literature review focused on the role of artificial intelligence in the education sector. Some of the studies are based on the student's engagement. In this globalized world where business is continuously growing day by day, it is necessary to develop managers and for that it is the need of an hour to focus on the growth and development of higher education. Artificial intelligence is much useful for higher education, it can easily develop the efficiency of students studying in higher education.

Recent learning tools of Artificial Intelligence in current scenario

Various artificial intelligence tools are helpful for students to develop their learning abilities such as Grammarly which is the AI-powered writing assistant that helps students improve their writing skills. Notion allows students to organize and manage their tasks, notes and projects. Gradescope is the AI tool that streamlines the grading process for students and instructors. Chat-GPT is a very famous AI tool that provides instant answers to queries of complex problems. Tutor.ai is a tutoring platform that

Special Issue on AI, Life Skills and Sustainability

connects students with qualified tutors that can be very useful for students to solve their academic issues. Copyscape is AI plagiarism detection tool that helps researchers and students to ensure their work is original or not. Yippity is a learning tool that converts any piece of information into questions and answers. Wolfram Alpha is a problem-solving AI tool that can solve any question within a second.

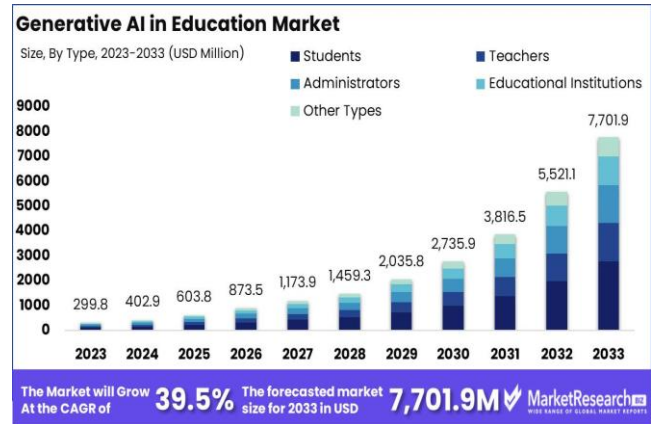
Role of Artificial Intelligence in students' learning

Today, the teaching and learning of students mainly depend on computer-based learning tools. Teachers are also focused on updated knowledge so they use artificial intelligence to upgrade students' learning. The primary role of artificial intelligence is to create the ability of engaging students in learning. Students are now able to gain repetitive lectures, it may help them to make concepts clear. Artificial intelligence provide vast amount of data and provide insights which is helpful for decision making. A student can use various innovative artificial intelligence tools to get more upgraded knowledge and they can also use AI for their personalized guidance and feedback. Teachers can provide knowledge and educational support to the students any time during a day by using artificial intelligence techniques. AI-powered grading systems can save teachers a significant amount of time by automating the assessment process. These systems can grade multiple-choice tests and essays, and even provide detailed feedback on student performance. This not only speeds up the grading process but also ensures consistency and reduces human error.

Generative AI in Education Market

Generative AI in Education Market size is expected to be worth around USD 7,701.9 Mn by 2033 from USD 299.8 Mn in 2023, growing at a CAGR of 39.5% during the forecast period from 2024 to 2033.

Generative AI in education is continuously developing the teaching and learning environment more comfortable to the students by providing 24*7 virtual assistance. GenAI provides numerous facts and knowledge to the teachers to help them upgrade and this will also help them in the teaching process.



Challenges of artificial intelligence in student learning

Despite of many benefits artificial intelligence has lots of challenges in front of students' learning such as it reduced interaction between students and teachers. Today students depend on artificial intelligence tools such as Grammarly, Chat-GPT, Tutor-ai, etc. Overdependency on any tool is not beneficial for the students because it reduces interaction between teachers and students due to which students are becoming introverted personality. They are not able to speak in public properly. Artificial intelligence is available 24*7 but it is reducing social culture where people interact and discuss any topic.

CONCLUSION

The undertaken research study focused on the role and impact of artificial intelligence on student's learning. As everybody knows artificial intelligence is playing a very important role in the field of education, it can integrate multidisciplinary knowledge by using technologies and has great potential to enrich children's learning. but if student's learning dependency on artificial intelligence increases then one day it will happen that the ability to learn and remember of the students will go away, and humans will be replaced by machines and man will become a puppet in the hands of a machine. A study conducted by the International Society for Technology in Education in 2021 highlighted that AI tutors could increase learning outcomes by 40 percent in various subjects like mathematics. Artificial intelligence should be used but limited. Traditional teaching has its own importance when the teacher interacts with students and discusses any topic. Hence, students can improve their learning and skills by using artificial intelligence along with traditional teaching. Artificial intelligence is beneficial in

Special Issue on AI, Life Skills and Sustainability

such regions where access to quality education and skilled teachers is limited.

BIBLIOGRAPHY

- [1]. Baker, J. (2011) 'The technology-organization-environment framework', Series of Integrated Series in Information Systems, 28, pp. 231–245.
- [2]. Brave A. Sugiarto, Asep Nurjain, Loso Judijanto, Luluk Firdausiyah, Ardian AI Hidayat, (2024), The Effect of Artificial Intelligence in Improving Student Learning Achievement in High School, World Psychology, pp.1-14.
- [3]. Dr. Ravishankar K., Dr. K. Logasakthi (2023), Impact Of Artificial Intelligence On Students' Sustainable Education And Career Development Using Extended Toe Framework, Korea Review of International Studies, pp. 22-35.
- [4]. Saini Neha (2023), Artificial Intelligence and its Applications, International Journal for Research Trends and Innovation, pp. 356-360.
- [5]. Zhengyu Xu, Yingjia Wei, Jinming Zhang (2021). AI Applications in Education. Artificial Intelligence for Communications and Networks (pp.326-339).
- [6]. <https://marketresearch.biz/report/generative-ai-in-education-market/>