

# Artificial Intelligence (AI) and Education

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Abstract:-

Human beings have been engaged in the process of human emancipation in any age of human civilization. With the invention of the computer, different dimensions of human development are connected. Educational tools and techniques enabled by AI have recently attracted notice for their potential to improve education quality and enhance traditional teaching and learning methods. Artificial intelligence has the ability to improve and change education systems around the world. To help the teachers effectively streamline their education process and help students gain more personal support, there is a strong possibility of artificial intelligence that is particularly suited to their strengths and weaknesses. It involves computer programs compiled with knowledge, ideas, problem solving, perception, learning, planning and manipulation and manipulation of objects. Today, Current trends and technology find that benefits and risk of AI in class rooms, including the role of AI on Educational Aspects.

Key words - Artificial Intelligence, Data, Education, Learning.

Introduction

“Human plus machine isn't the future, it's the present,” Garry Kasparov

Human beings in any human era are engaged in the process of production, and have made their physical development. In the production process, when the human body is coordinated with the components, this system is called skill/ skill development, the person will be more skilled, and the production will be more in the same proportion. This skill really reconciles the information collected in the brain, according to the nature of the

dimensions, coordinating the working organ. The task of collecting and re-observing the information is mainly called the combined processive band of brain disciplines.

## Artificial Intelligence

Artificial intelligence is a branch or applications of computer science, in which emphasis is on the construction of machines working like human brain. It involves computer programs compiled with knowledge, ideas, problem solving, perception, learning, planning and manipulation and manipulation of objects.

John McCarthy discovered the artificial intelligence word in 1956 (Stefan A. D. Popenici 2017) Artificial intelligence is not really intelligence it is management of data & manipulation (math). Brain is the most important gift to humans by the God. Through human beings, through the brain, on the basis of their own history, humans have discovered and conquered their environment. In such a way, the computer is also prominent.

With the invention of the computer, different dimensions of human development are connected. When we write something to search in Google, Google automatically starts showing its spelling or sentence in suggestion. Marking any locator in the smartphone automatically marks its direction and distance and the shortest distance route, as is the case with many other website company organization. There are also devices which make this type of application and make it available to more users. All these devices are a miracle of artificial intelligence. (L.Y. PRATT, 2018).

Electronics, Electrical, Computer Science, Software Engineering, Robotics, Math and Physics etc are combines together and make Artificial Intelligence.

Currently 8 percent GDP is fully affected by digitized technology. It can be up to 60 percent by 2021. (Anant Maheshwari, president, Microsoft India, A study report, April, 2018). All this is just a sign of the prospect of progressing in a country like India. The modern progressive era is an era of information and communication technology and it is an important resource and power.

## Applications of AI :-

Artificial intelligence has the ability to improve and change education systems around the world. To help the teachers effectively streamline their education process and help students gain more personal support, there is a strong possibility of artificial intelligence that is particularly suited to their strengths and weaknesses. The field of education is certainly matured for innovation and the advancement of artificial intelligence can be able to provide that idea. As a result of the right applications of artificial intelligence, students can get a much more detailed and adequate education as the artificial intelligence program can do more to identify and target their personal strengths and weights.

- As a Social work - General Intelligence, Creativity, Motion & Manipulation, Cybernetics, brain Simulation, cognitive simulation, statics problem solving capacity etc.
- Search and optimization - capabilities are some of the important features that are essential by artificial intelligence.
- Data driven - by artificial intelligence can be changed how to find, teach, and support the Scheral students.
- Interaction- It is altering how we find and interact with information.
- Trial and Error - AI can make trial-and-error learning less intimidating.
- Skills - AI may change where students learn, who teaches them, and how they acquire basic skills

## AI in class rooms -

Today, Artificial intelligence teachers can be provided with large amounts of help, with effect from their students. Applications of AI-based education technology include the following:

- Artificial intelligence can automate basic activities in education, like grading. Artificial intelligence is changing by how we get information and interact with it.
- This can indicate places where the curriculum needs to be improved.
- Artificial intelligence can give supportive feedback to students and academics.
- Programs based on artificial intelligence can give supportive feedback to students and academics.
- The role of teachers can change by artificial intelligence.
- Artificial intelligence can make learning and trial less intimidating.
- AI programs generally referred to as Intelligent Tutoring Systems (ITS) engage students in dialogue, answer questions, and provide feedback.
- ITS and adaptive tutors tailor learning material, pace, sequence, and difficulty to each student's needs.
- AI also provide support for special needs students.
- Computer adaptive assessments or CAI adjust the difficulty of successive questions based on the accuracy of the student's answers, enabling more precise identification of a student's mastery level.
- AI can perform routine tasks such as taking attendance, grading assignments, and generating test questions.
- AI perform grading system or calculate results and marks in their test or assignments.

As well, at least one public school district has partnered with a university to provide a K-12 AI program aimed at teaching students AI concepts and technologies.

### **Benefits and Drawbacks of AI in Classrooms**

Researchers have yet to reach a consensus about the effectiveness of AI-based instruction. Definitions of key terms often vary from study to study, and the academic literature

includes both evidence supporting and evidence refuting AI's educational value. Additional research might help resolve the issue.

Some studies have found benefits to using AI-based classroom technologies in certain situations. For example, a 2014 meta-analysis concluded that ITS produced statistically significant improvements in student learning outcomes (e.g., mastery and retention) when compared to traditional classroom teaching, independent textbook use, and non-AI computer-based instruction. However, experts point out that ITS curricula are rather inflexible due to technical challenges in accommodating user feedback, modified core standards, or content changes.

AI technologies may help facilitate “personalized learning” (tailoring instruction to the needs of each student) and “blended learning” (combining technology with face-to-face interaction). Many school officials hope that such approaches will improve academic performance and reduce achievement gaps between groups of students. Some teachers also suggest that personalized learning increases student engagement, motivation, and independence.

AI-based learning faces significant implementation challenges. Greater student independence may disadvantage children who are less self-disciplined or who receive little educational support at home, potentially exacerbating the achievement gap. Moreover, surveys indicate that some teachers struggle to translate the data they receive from personalized learning tools into actionable instruction and spend inordinate amounts of time creating individualized assignments. There is also debate over how well students retain knowledge learned from an AI-based system, and whether spending substantial class time on computers diminishes social learning at school.

The budget implications of using AI in education are unclear, given uncertainties about the cost-effectiveness of the technology. For example, the versatility and scalability of AI might drive some institutions to reduce teaching staff in favor of AI alternatives. In

contrast, AI might create demand for education professionals who can design and implement personalized learning programs.

### **Independent task :-**

Some tasks have addressed issues related to AI in schools, such as internet access and student data privacy.

Successful implementation of AI by schools requires significant investment in Information Technology (IT) as well as reliable broadband internet sources. These resources are not uniformly distributed across school districts; for example, close to 80% of schools without fiber connections were located in rural areas as of 2017. Federal efforts to address this disparity include such programs as the Universal Service Program for Schools and Libraries. Commonly known as E-rate, the program provides subsidies of up to 90% to help ensure that qualifying schools and libraries can obtain high-speed internet access and telecommunications at affordable rates.

The National Science Foundation and the Department of Education's (ED's) Institute of Education Sciences have awarded grants to projects researching AI-enabled classroom technologies. In addition, ED's Office of Educational Technology has released several publications on topics relevant to AI in schools, such as learning analytics and educational data mining, teacher preparation, personalized learning, and student privacy.

- Protecting Student Privacy Act
- SAFE KIDS Act
- Protecting Education Privacy Act
- The Protection of Pupil Rights Amendment of 1978 (PPRA)
- The Children's Online Privacy Protection Act of 1998 (COPPA)
- Elementary and Secondary Education Act of 1965
- The Protection of Pupil Rights Amendment of 1978 (PPRA)
- The Children's Online Privacy Protection Act of 1998 (COPPA)
- The Family Educational Rights and Privacy Act of 1974 (FERPA)

The Every Student Succeeds Act (P.L. 114-95), which reauthorized the Elementary and Secondary Education Act of 1965, authorized the use of computer adaptive testing in state student academic assessments mandated under the act.

The Family Educational Rights and Privacy Act of 1974 (FERPA), as amended in 2013, limits the power of schools to disclose students' education records but has been criticized for weak enforcement mechanisms against third parties that misuse student data.

The Protection of Pupil Rights Amendment of 1978 (PPRA), as further amended in 2015, requires schools to notify parents and offer an opt-out choice if a third party surveys students for marketing purposes.

The Children's Online Privacy Protection Act of 1998 (COPPA) requires parental consent before websites collect information about children aged 13 or under.

Many experts worry that current law, passed largely before AI became a major policy consideration, is insufficient to address today's cybersecurity threats. Bills introduced in the 115th Congress, such as the Protecting Student Privacy Act (S. 877), SAFE KIDS Act (S. 2640), and Protecting Education Privacy Act (H.R. 5224), would affect how third parties can access and use students' PII.

### **Selected scheme**

Although most education policies are set at the state and local level, oversight and legislative actions on issues such as student privacy, teacher Preparation, product selection, and algorithmic accountability. (Joyce J. Lu, 7-6044)

**Student Privacy.** Like many digital services, AI-enabled education tools collect and store PII. In response to public concerns about data security and privacy, activists created a

voluntary Student Privacy Pledge in 2014. Signatories promise to place limits on the lifespan of stored data, maintain reasonable security measures, and refrain from selling data.

**Teacher Preparation.** If AI technologies are adopted on a broader scale, teachers face the task of not only learning to use specific products but also integrating a range of AI technologies into their lessons. Preparation programs offered by teacher-certifying universities and institutes might provide such training.

**Product Procurement and Support.** Choosing products can be a time- and energy-intensive effort involving teachers, administrators, IT staff, and other school officials. While some schools allow teachers to experiment freely, others require IT staff to vet hundreds of privacy policies and security measures. Some school districts have turned to digital content consultants for guidance in selecting products.

**Algorithmic Accountability.** Parents and school administrators may find it difficult to trust AI technologies used to influence or make decisions about student learning. Mistrust can stem from the refusal of companies to disclose their algorithms, which they argue are trade secrets, or from the “black box problem,” which occurs when an algorithm’s complexity renders its processes inscrutable even to developers. (Laurie A. Harris, lharris@crs.loc.gov, 7-0504 )

### **Conclusion & Suggestion: -**

Artificial intelligence is an arrangement of equipment in which the computer is prepared to calculate through electronic chip and circuit, to store data, to keep the results safe, to predict potential. The use of artificial intelligence intelligentsia in the field of health care, market management, sports space science, banking manufacturing in the current period is increasing day by day. In education and medicine, it is proving to be a boon. Therefore, it is clear that artificial intelligence has achieved more than human intellectual capacity.

- Artificial intelligence should be included in the curriculum of education.
- It is desirable to get the knowledge of technical knowledge of operating the computer's equipment and developing the program.



- The maximum application of artificial intelligence in the field of education should be done.
- Through the object, the human brain should be confined to competition with artificial intelligence.

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