Introduction of Artificial Intelligence to Revolutionize the Indian Education System: A Buzz or Reality?

[*]Adarsh Mishra & [**] Prabhat Kumar
[*]M.Ed. Scholar, School of Teacher Education, CSJM University, Kanpur (U.P.), India
[**]M.Ed. Scholar, School of Teacher Education, CSJM University, Kanpur (U.P.), India

Abstract

Artificial Intelligence is no more a fictional Hollywood movie thought, it is now reality. It uses data for analysis and it can give interpretation such as human brain does. The world is now adopting this due to its efficiency and accuracy. The experts are even threatened since due to its enormous capabilities it can change the basic structure of various industries where a lot of people can lose their jobs. India as we know is world's most populous country and Indian education system is also one of the large systems of the world. AI driven technologies has changed whole education system from traditional teacher centric classroom to flexible anywhere, anytime learner centric model. The various challenges which are faced by Indian education system can easily solved by Artificial Intelligence. Various research paper are being written on the Artificial Intelligence world wide the present paper will focus mainly on Indian Perspectives for Artificial Intelligence which can revolutionize education.

Keywords: *Artificial Intelligence, Artificial intelligence related technologies, Learner centric.*

Introduction :-

To bring the change in our society we need education. From the decades education has been prioritized by humans and it has made significant changes in the life of human beings **(Kumar et. al., 2022).** Indian education system has been remain dynamic and also gone through a systematic change in last few years. These changes have led the ushering of Indian education system in the era of Technology.

The burgeoning of the new technology has introduced the Artificial Intelligence which has the potential to revamp diverse fields along with education. Generally artificial intelligence technologies are used through Chatbot & ChatGPT-most sophisticated artificial intelligence system that can replicate responses like human.AI related technologies have the capabilities to remodel our conventional teaching learning methods **(Adriguzel et. al., 2023)**. It can advance us to those domains of education which has been remained a serious concern for Indian Education system like access to education, quality education, affordability in education, and accountability towards education. AI related technologies can be a great solution to our most problems because it has the efficiency to deal with bulk of data in a blink of eye and can avoid tedious and monotonous work **(Khan et. al., 2022).**

NEP-2020 also advocated promoting artificial intelligence in teaching learning process to address the various issues through advancing AI core research which would enable to allow the maximum intervention of AI in this process. It is also envisioned in NEP-2020 to offer various PG and PhD programmes in machine learning as well as multidisciplinary fields.

What is Artificial Intelligence?

Artificial Intelligence, the term was invented by John McCarthy in 1955. AI ≠ human intelligence by default in contrary the tasks that are accomplished by it are taken up as intelligent with a surity of success **(Adriguzel et. al., 2023).**

Artificial Intelligence is perceived as the potential of digital computers to do the tasks related to intelligence which match the level of human intelligence. It generally replicates human intelligence. It has become prominent among the masses through the application of Chatbots & Open AI's ChatGPT (Generative Pre-Training Transformer). Machine learning is also a type of artificial intelligence.

AI enabled devices are able to think rationally, analysis the data, visualize patterns, recognize the patterns and can make suitable changes in its intelligence from experience. Today we are focusing to make it more sophisticated and more efficient than humans. It can be seen as replacement of human intelligence from various places. Today AI's presence encompasses all the diverse fields which are related to human beings.

Artificial Intelligence and Education: A New Paradigm -

Education is a lifelong process of learning about various horizons of life. Technologies time to time impacted how humanity thinks and acts. Now artificial intelligence which uses data mining, machine learning is a new venture in our modern world which impacted our lives substantially. Some psychologists especially from the cognitivism their learning theories also embrace the use of machine-learning allied technologies to create an intelligent education system.

Artificial Intelligence in Education (AIEd) is an interdisciplinary approach which incorporates computer science, psychology, and education with an intent to bolster the support of AI in education **(Kumar et.al, 2022).** AIEd tangles the applicability of various AI technologies to facilitate and to maximize the participation in teaching-learning process. Harnessing the potentialities of AIEd technologies, subject-matter, and pedagogical methods all are interlinked and must be designed in such a way where all are integrated to maximize the learning experiences. **(Adriguzel et. al., 2023).**

AI in Classroom: A Friend of A Teacher -

Traditionally Classroom is formal settings where teaching learning process is performed, for effective implementation teacher uses a lot of methods in the classroom. Now with the advent of Artificial intelligence the whole process of education will be revolutionized now teacher can use AI as his friend or helper in the formal classroom teaching learning process in the following way.

- AI will enhance the capability of teacher it will help him to prepare for the topic or lesson which is to be taught in classroom.
- AI will give instant and innovative way to evaluate the learning outcome of the students.
- AI will help teacher to know about his method of teaching and suggest improvement for this.
- AI powered tool can be used by teachers to give personalized instructions to the students.

- AI will help teacher in management of the classroom it will take attendance, maintain digital record etc.
- AI will help in content creation and its presentation to the students.

Artificial Intelligence : A Promising Partner of Students -

AI can transform the whole education sector by its unparallel potential. Students can also be leveraged by its prowess which is discussed in following points;

- Induction of AI technologies can enhance the motivation and participation of students.
- AI can also substantially increase learning outcomes and advances students' academic achievement.
- It provides specialized learning which is based on individuality of students.
- Students can ask as many questions they can because there is no human on the other side which can refuse to do so. **(Hemchandran et.al., 2022)**
- Students can learn at their own pace because there is no such fixed time slot.
- It facilitates collaborative learning among the students.
- It enabled students to aware with the technological skills.
- It can track students' previous choices, interests, selection etc. by AI and on the basis of this database it can recommend new customized course on online mode **(Shalini, Tewari, 2020)**
- It provides support to those students who need assistance outside of the classroom because these technologies are at your service at 24x7.
- Performing teaching- process related tasks are very tedious like evaluation, giving grades, checking assignments etc. but deploying AI in classroom make this process automated.
- In India, there are some terrains where accessibility of education is still like a day dreaming so by the help of AI now it will become reality for them as well.
- AI is not restricted to only providing customized course but it can also provide feedbacks about the performance of the students and reports about the success level of students to administration.

Can AI Replace Teacher in Classrooms?

It is now a matter of great concern, in future for the educational purposes AI can replace physical teachers. Various researchers have pointed out this in their respective researches. The study done by **Harshita Bhatnagar (2020)** suggests that in higher education AI can be great to improvement in teaching quality, students retention, decision making, easy assessment.

For the overall development of the students we need a human intervention because some of the skills like social skills, emotional intelligence, ethical behaviour, humanity, and compassion can only be learn with real teachers. Although AI can help as an assistant to the teachers.

AI can be a valuable tool for educators. It can be used to provide personalized instruction, track student progress, and provide feedback. AI can also be used to create engaging and interactive learning experiences. With the use of AI, teachers can free up their time to focus on teaching.

Does India Really Need the AI For its Education System?

Artificial intelligence is a new venture in the modern world. All the countries are adopting this by and by. The experts are saying it will change a lot of things about our life. For the country like India, where it was always a challenge for the government to provide quality education Artificial Intelligence can be of great importance. There is following reasons why Indian education system needs AI.

- Assessing the students need was always a challenge for the teacher in Indian education system because of the large number of students Artificial Intelligence can definitely solve this problem hence we need it.
- Cost is a big issue in Indian education system because the country stills a developed and a large number of people cannot spend money for quality education, Artificial Intelligence can provide quality content to the students with minimal cost, hence we need it.
- Teacher Pupil ratio in Indian education system is a great challenge for the government and even to private educational enterprises, **Vi**rtual Assistant which are powers by Artificial intelligence can be used to solve the problem.

How Potentially AI Could Impact Indian Education System?

India is now world's most populated country, for this crowd to survive and make a better place for society to live education is an important milestone. Indian education system has a lot of challenges in front of him although it is expanded at various levels with its uniqueness. The Artificial intelligence sure can help to overcome some of challenges faced by our education system and can provide certain ease to the formal education system.

- AI can be potentially used to overcome the language barriers which are faced by our education system.
- AI can give smooth functioning to the various levels of education.
- AI can give individual instructions to the students based upon their past academic performances, which will of great significance because in traditional settings it was not possible for a teacher to do this.
- AI powered tools will enhance the management capabilities of the teachers at various levels of Indian education.
- AI powered tools can be used in curriculum development; research data analysis related to education, this will enhance the capabilities of teacher, educational administrator and policy makers.

NEP 2020: Give Ground to AI To Make its Intervention -

National educational policy is a document which gives the direction to the education system. Various policies in India have suggested various new recommendations depending upon the time when they created. NEP 2020 talks about various new innovations for the Indian education system Artificial Intelligence is one of them. In this various courses are suggested based upon artificial intelligence. It talks about 360 degree assessment of the students, artificial intelligence can surely be of a great advantage. NEP also emphasized on the quality of education at various levels AI supported tools can be of great importance for this.

NEP 2020 emphasizes to upgrade the research in the fields of AI by which we would be enabled to cater the needs of our educational system.. It recommends for the establishment of National Research Foundation (NRF) and National Education Technological Forum (NETF) to envision the unmatched potentialities of artificial intelligence and to conduct research regarding these disruptive technologies to make our students aware about the negative aspects of AI as well. NEP 2020 also suggested to develop the AI based software to track the educational growth of students by the support of various data sources. These software will also offers assistance in the career choices of students ,their preferences, their strength or weakness, interest zones etc which could be based on the data that is received by the machine by tracking students through their learning years.

Future of Artificial Intelligence in Indian Education System-

Artificial intelligence is an unavoidable reality of today. Government and educational policy makers should upgrade the curriculum of various courses at various stages of educational level.

Some of new courses in machine learning, internet of things, data mining, and robotics should be initiated & some topics should be included in the existing courses to increase the employability of our youth.

There is strong need to develop some of skills which machine does not have so that they could not replace human easily. The set of skills are in such a way.

- High Order Thinking
- Creativity
- Metacognition Skills
- Analytical Thinking
- Creativity
- Life Skills

Conclusion :-

In Marvel movie iron man always take help of Jarvis in his decision, this Jarvis is now reality it is a personal assistant which are backed by artificial intelligence. In our real life artificial intelligence uses machine learning, data mining for its effective functioning. Artificial intelligence basically a machine which can think, reason, analyze based upon our prompt. Various fields are being affected by its intervention. Industries across the globe are adopting this for various purposes. In the field of education various ways these are being used. Internet of things, robotics, are some of new words which are reality of our present life, and in future there intervention will increase. In field of education can they cannot replace the teacher but they can be a great assistant to a teacher and can help him in many ways. Teacher will use AI for effective teaching learning process. In India the use of AI are growing rapidly. As it happens with other technologies they can support or destroy our living if not handled properly. Hence there is needed to make regulations for the use of AI in various fields including education. Machine learning which is a fundamental base of AI is still in development mode in India, hence in future there is a lot need to skill our youth in modern technologies for effective adoption of AI.

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