Role of Artificial Intelligence in Education systems, its challenges and opportunities in India

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ABSTRACT:

The origin of the term AI can be traced back to early 1950. The relatively recent advancement in information technology, AI can be described as a system’s ability to learn and interpret external data via software or machines/devices for problems solving by performing specific roles and tasks currently executed by human.

Within the education sector, AI can be deployed to improve teacher effectiveness and student engagement by offering capabilities such as intelligent game-based learning environment, tutoring systems, and intelligent narrative technologies. In this article, I aim to outline the opportunities and challenges in AI in the Education sector.

KEYWORDS:

Artificial intelligence, machines, devices, education, technology

Introduction:

The modern arena of education have massively revolutionized and overturned in digitally driven world, on such technology that have slowly paved its way inside the world of education is artificial intelligence.

The technology has overturned the world of learning as education materials specially during the pandemic of covid-19. It becomes the more accessible to all with the use of smart phone and computer. This allowing facilities to invest more time for the students. Facilities can get the opportunity for close evaluation of students their aptitude, attitude, interest etc.

Firstly A.I enabled hyper personalization helps in developing customized learning in environment based on ability performed mode of learning and experience. Secondly the use of smart assistant (Amazon alexa, google home, Microsoft cortana) and associated technologies offer significant potential to help students. Universities are already using voice assistants to help answer common questions about campus, students’ schedule and courses.
Thirdly AI systems can assist education with secondary task such as grading activities providing personalized responses to the students handling routine and repetitive paperwork and dealing with logistics related matters. AI based analytics can help with academic research within various disciplines.

And potentially transform library process and staffing requirement with aim to provide a richer user experience.

The Tamilnadu e-Governance Agency has partnered with Anna University to launch a Tamil smart assistant called ANIL. They implementing an innovative use of AI through face recognition for recording attendance. The system is saving more than one hour per day and is freeing up extra time for core educational activities.

REVIEW OF LITERATURE:

The relevant exploratory research papers based on data’s, journals and Google scholar website had been reviewed to collect maximum information on relative topic. The entire paper based on secondary data which details has been mentioned in references to examine pros and cons effect of AI in developing country like India. The various aspects of the topics are considered as under:

1) Distinguishing what has been done from what need to be done.
2) Discovering important variable relevant to the topics.
3) Synthesizing and gaining a new perspective on this topics.
4) Relating idea and theory to application.
5) Placing the research in a historical context to show familiarity with state of art development.

OBJECTIVE OF STUDY

1) How to reach excellence in education with AI.
2) How AI help to fulfill the gap of 50 percent less teachers per thousand students when compared with developed countries.
3) Unemployment is the major issue of India. Can AI relevant in this context.
4) Can AI achieve inclusive and sustainable support in education system of India.

OPPORTUNITIES OF AI

India has 1.1 billion mobile phone users with 600 million internet users and 374 million smart phone users it has one of the cheapest data rate in the world( $ 0.24/Gb) and average data speed of 6 mbps these factors open up huge potential adoption of AI technology in India.
1) **PERSONALISED LEARNING.**

AI is being employed for personalizing learning for each and every student. The hyper-personalization concept which is enabled through machine learning. The AI incorporated to design a customized learning profile as well as tailor make training materials. Various AI powered apps systems helps the students in accessing instant and customized response as well as in getting their doubt cleared from their teachers.AI also play role in augmenting tutoring and designing personal conversation assistant, who can offer them aid education or assignment tasks this also provide freedom to student to learn at their own place and time.

2) **VOICE ASSISTANT**

These includes Amazon’s alexa, apple siri, Microsoft cortona etc. allow the students to converse with education materials without the involvement of teacher. the objective behind these voice assistant is to supply answers to all common reducing the requirement for internal support as well as cut down the expense of printing college handbooks which are only temporarily used.

The employment of these assistant system break the monotony and fetches an existing prospects of students. the implementation of this technology is expected to escalate in coming year.

3) **AIDING EDUCATORS IN ADMINISTRATIVE TASK**

Teachers don’t just battle the work of education oriented duties but are also handed the responsibility of handling classroom environment and dealing with variety of Institutional tasks like evaluation of exams papers, necessary paperwork, handling personal and administrative issues, self development activities like research work, publication, seminars, workshops etc. So AI system have been crucial aid at dealing with back-office and task related duties such as grading task as well as facilitating personalized response for students. Alongside they can also deal with the routine and monotonous paper work related to logistics and personnel issues.

4) **BREAKING BARRIERS.**

AI tools and device has been aiding in making global classroom accessible to all irrespective of their language or disabilities. The programmes are all inclusive. For instance presentation translator is a free power point plug-in that develops subtitle in real-time of what the teacher is saying. These also provide access to students of the courses which is not available in their own campus.

**CHALLENGES AND SHORTCOMINGS.**

1) **LACK OF EXPLAINABILITY.**

Generally AI operates effectively as a black-box-based system that does not transparently provide the reasoning behind any particular concept, classification and decision made by system. These are the major limitation.

2) **LACK OF CONTEXUAL AWARENESS AND INABILITY TO LEARN.**

AI based systems are good at performing with given parameters and rules. However, they still have major limitation in terms of making decisions where context plays a critical role. Unlike human, AI –based systems cannot learn from their environment. This limits the application of AI to specific types of domains.
3) JOB LOSSES

**Increasing automation** will lead to significant job losses particularly at operational and lower skill levels for repetitive tasks. This critical consequence of AI use will continue to impact all sectors and countries across the world but particularly developing economics where employment opportunities are already limited.

The major challenges are: How to select tasks for automation, how to select the level of automation for each task, how to manage the impact of all AI and how to manage AI enabled automation errors.

4) LACK OF TRUST AND RESISTANCE TO CHANGE

Due to negative media coverage on the consequences of AI people are generally apprehensive about implementation. This poses a major challenge on How to establish trust among society, parents and students.

5) LACK OF ETHICS AND VALUE

Ethics for machine has been an area of immense interest for the researchers. To deal with ethics purely from an AI perspective. There are two dimension in AI:

1) Privacy and data protection
2) Human and environmental values

Privacy is possibly the top most concern while using AI system. Secondly policy makers need to ask Has the AI as respective, dignity and kindness, compassion equity or not? An important aspect which need to be built into AI system is the overall cost of decision on the society.

CONCLUSION

AI as a technology holds tremendous potential for a country like India which is data rich and has the requisite technological capability to create AI solution in all level of educational levels.

Not so far in the future we can expect AI and machine learning to occupy an integral place in all educational experiences AI has started to prove its advantages and power in a guide range of education area and it remain to be seen how the technology will empower and enhance overall learning outcomes for all.

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