

## APPLICATION OF ARTIFICIAL INTELLIGENCE IN EDUCATION AND ETHICAL CONCERNS

**Manish Bhatnagar<sup>1</sup>, Ph.D. & Pragati Bhatnagar<sup>2</sup>, Ph.D.**

<sup>1</sup>Assistant Professor, Department of Education, Jain Vishva Bharati Institute (Deemed University), Ladnun, Rajasthan

<sup>2</sup>Assistant Professor, Acharya Kalu Kanya Mahavidhyalaya, Jain Vishva Bharati Institute (Deemed University), Ladnun, Rajasthan

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### Abstract

Now a day's application of artificial intelligence is in every facet of our life and field of education is no more an exception. NEP 2020 has also emphasized the role of technology and specifically Artificial Intelligence in education (AIED). AIED is empowering our education system. AI is integrated in our education system in form of personalized learning, in administering tasks of an educational institutes and helping teachers in their teaching process. Though the motive of AIED is to support teachers' and students' teaching and learning experiences but such ethical intentions are not by themselves sufficient. These ethical concerns are very complex and it is not so easy to achieve them. There is need to explicitly consider ethical issues such as privacy, fairness, transparency, biases, autonomy etc. So the teachers and students using artificial intelligence tools must be fully aware of these ethical issues and should try to take full advantage of these tools. To achieve the potential benefit of artificial intelligence in education and minimizing its ethical drawbacks there is a need of well-structured framework and guidelines for implementing ethics of AIED.

**Key Words** - Artificial Intelligence, Artificial Intelligence in education (AIED)



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### Introduction –

Artificial intelligence is affecting every facet of our life and field of education is not an exception. NEP 2020 also emphasizes the role of technology and specifically Artificial Intelligence (AI) in education. Artificial intelligence is playing important role in empowering our education system. There are many potential benefits of using AI in education. It helps in individualized learning, automatizing administrative tasks, tutoring, providing universal

access to all students. On one hand AI is empowering our education system on the other side there are some ethical concerns which need to be addressed to avoid unintended consequences which may harm individual progress or wellbeing.

According to UNICEF -AI refers to machine-based systems that can, given a set of human-defined objectives, make predictions, recommendations, or decisions that influence real or virtual environments. AI systems interact with us and act on our environment, either directly or indirectly. Often, they appear to operate autonomously, and can adapt their behaviour by learning about the context.

Application of AI can be categorized in three broad areas for administrators, teachers and students

System Facing	Learner Facing	Teacher Facing
<p>These tools help administrators and managers at institutional level to gather information.</p>	<p>Tools and software that help student when they learn subject matter</p>	<p>Tools which automates various tasks which reduces burden of teachers</p>
<p>AI help institutions to analyze and interpret data and help them to take better decisions and helps in managing all tasks such as maintaining students record, budgeting, transportation, scheduling various tasks etc.</p>	<p>Personalize Education - With the help of AI student can personalize his/her learning schedule.</p>	<p>Teachers can empower their teaching using AI. AI can help teachers to manage their time efficiently by managing their organizational and administrative tasks such as making students' progress report, organizing resources and materials for lectures etc.</p>

**Role of AI in education (AIED)**

**Personalized or Individualized Learning** - Every student's learning capability is different. A teacher in a class deals with many students and it is impossible to teach as per the understanding level of each student. AI allows differentiation of levels. AI helps students to find out what they know and what they don't know and helps students to build their learning schedule based on learning gap. AI powered machine provide customized curriculum as per the need of individual student.

**Task Automation** – AI helps teachers in optimizing certain tasks like grading, assessment, replying to students, maintaining reports, making presentations and reports, organizing research papers and other administrative tasks.

**Smart Content Creation** - AI helps teachers to produce smart content in the form of customized digital learning interfaces like digital books, study guides etc. Low storage study

materials are generated with the help of AI which helps students to take the benefit of study material without consuming much space in system. AI helps students to understand information in new innovative ways like 2D and 3D visualization, simulation, and web based study environment etc. AI also helps to generate and update lessons to keep information up to date.

**Tutoring** - Now a days to support students outside the classroom and to help them to cope up with their course, personal tutoring is provided by means of AI. Students can use AI powered Chabot or personal assistants to ask or explain challenging topic to them.

**Education Accessibility to Students with Special Needs** - Visually or hearing impaired students can be trained with AI powered tools. AI tools can be trained to help students with special needs. Tools like Presentation Translator provide real time subtitles for virtual lectures

### **Applications of AI**

**Chabot-** AI application tools used by students with their iPads or laptops to chat with bots to understand or study a specific topic of any subject like math, science or reading comprehension. Chabot not only help students to understand a topic but may also help in analyzing a topic.

**Virtual Reality-** Virtual reality is an innovation which is blended in all facets of our life including education. It is a computer generated three dimensional environment where teachers and students can interact with each other as if they are interacting in real time. Although students may be sitting virtually in different classrooms at different places but they feel connected and can exchange their ideas and explore new things.

**Learning Management System** - LMS system use AI to provide a centralized system to manage all the activities of an educational institute like registration of students, fee management, assign course work, assessment & evaluation. LMS can also provide intelligent digital tutor to students which helps them to solve their problems. Digital tutor understands how students think and help them to learn better. AI powered LMS system helps teachers to create their content and helps parents to understand their child's progress in better way.

**Robotics-** Robotics is an innovative branch of science that blends engineering and creativity which enhances student's skill by boosting their knowledge through the design, construction, assembly, and operation of robots. Now a day's use of robotics with AI in education has increased. Robots are used to teach students different subjects with human like gestures and

emotion perceiving technology. Teachers can use robots as an instructional tool to teach students tough and practical subjects.

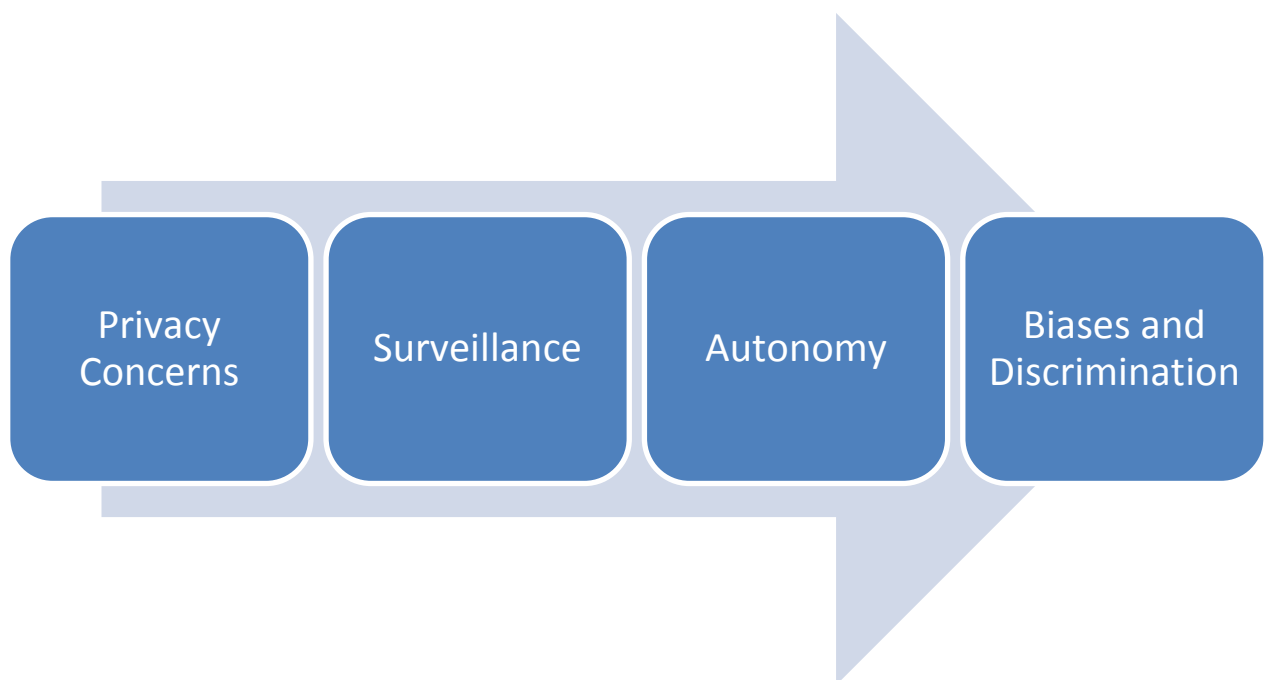
### **Advantages of Using AI**

**Learn anywhere anytime** - Using AI students can have 24\*7 accesses to learning. They can learn at their own pace managing their time as per their convenience.

**Better Engagement-** With personalized learning students can engage themselves more efficiently in learning. Digital visualization, and interactivity increases students' interest in studies.

Till now we have discussed about AI, applications of AIED and advantages of AI. Despite the advantages of AIED it poses many social and ethical drawbacks . So it is essential to deal with these ethical issues.

### **Major ethical concerns of AIED**



**Privacy Concern - One** of the major ethical concerns of AI in education is privacy concern of teacher and student with regard to their personal information. People exposes large amount of personal information in online platforms. Though there are legislations and standards which protect sensitive and private data but AI system asks users consent to access their personal data. Many persons give their consent without considering the extent of information they are sharing such as their biographical data, location, languages spoken and racial

identity. These AI systems are used by many educational institutes. So parents and students have no choice except sharing their data.

**Surveillance** - AI system keeps an eye on how a user is interacting with things which may include identifying strength, weaknesses and patterns in student's performance. The monitoring and tracking of online student's conversation and actions may limit student's participation as they may feel unsafe to take ownership for their idea.

**Autonomy** - The AI system depends on algorithm for example to find out how a student will perform in a test. The teachers and students may face difficulty in working independently or to work according to their interest and values. This poses a question for self freedom and fairness in work.

**Biases and Discrimination** - Biases and discrimination are one of the major concern of AI systems which are embedded in machine learning models. Gender bias is the most common kind of bias which occurs through gendered language translation. ( Ex. She is a Nurse but He is a Doctor). Algorithms uses data set that represent societal historic data and system biases. These biases are embedded into algorithms unintentionally but various gender and racial biases can be seen in different AI platforms.

### **Conclusion -**

Artificial intelligence is now a day used almost in every area of our life. It is integrated in our education system also. Its importance is also emphasized in NEP 2020. Application of AI in education is no doubt beneficial for students, teachers and educational institutes as it helps them to perform their tasks easily and efficiently. On the other there are many ethical concerns which if not addressed properly may cause harm to our students, teachers as well as to our education system and humanity. So the AI system in education must be transparent, efficient, fair, free from biases, should enhance our education system instead of being unethical and harmful. To minimize unintended ethical drawbacks there is a need of well-structured framework and guidelines for implementing ethics of AIED.

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