



“AI Intervention in Indian Higher Education”

Mrs. Sheetal Deshmukh

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Abstract –

Artificial Intelligence (AI) is revolutionizing Indian education sector. It provides highly personalized learning tailored to the unique educational needs of every student of higher education. AI is very effective technology and brought significant changes in the educational system of India. The intervention of AI in education, especially in higher education has made the teaching learning process much easier for the students. AI technology was invented by John McCarthy in 1956. Over the period the intervention of this technology in every sector has increased. Education sector is no exception for this. Today, it has become an integral part of education system in India. There are several advantages and disadvantages of applying AI technology in higher education. It supports diverse classrooms, promotes inclusivity and equity as it addresses the students’ academic strengths and weaknesses AI technology enables convenient, self-based learning, that provides quick feedback and personalized support, while automating repetitive tasks for teachers, reducing their time and efforts. It also proved helpful in tracking students’ progress and helps to allocate resources appropriately, enabling scalable personalized learning for more students and reducing the burden of teachers. AI technology can automatically adapt learning strategies to account for this diversity and ensure that no students are left behind. Through the present study an attempt has been made to explore the contribution of AI technology to higher education, its advantages and disadvantages, and future prospects. Apart from this, an attempt has been made to explore the various challenges of AI in Higher education.

Key words – Artificial Intelligence, Higher education, advantages disadvantages, challenges, future prospect.

Introduction

Artificial intelligence involves rapid advancement and development in higher education sector in India. AI technology has started being applied in the higher education sector with a view to offering students adaptive learning, feedback and automatic task completion. Due to intervention of AI technology in the higher education sector, learning and teaching process in educational sector is now becoming more convenient and efficient. The scope of AI technology intervention in higher education sector has been significantly widened because of recent updated and developed versions of AI technology. AI technology in higher education sector facilitates personalized learning by creating learning content as per the educational requirements of the students. It also proved as useful in tracking student’s academic performance and helps to allocate resources appropriately, enabling scalable personalized learning for more students learning in higher educational institutions and proved helpful in reducing the burden of teachers also. Multiplicity of AI operations have changed education sector together with other sectors. AI operations have changed education sector together with other sectors. AI technology has brought progressive and effective educational modes to the Indian higher



education system. AI technology has the potential to result in the creation of a new era, in the higher education sector. Now, AI technology has taken long strides to change every aspect of the higher education system of India, from curriculum to test delivery. In the mission of Vikasit Bharat, the transformation in higher education sector is caused to paradigm shift and to help Indian education system come at par with global educational systems. This literature focused on the contribution of AI technology in Indian higher education sector, its advantages and disadvantages, challenges in implementation etc.

Literature Review –

- 1) A. S. Ghori, (2023), has attempted to investigate the relations between gender and awareness of AI in education. Author has focused on the opinion and perception of teachers and students about the disruption caused due to AI usage in education. Author has also focused on that, how AI intervention will enhance personalization and interactivity in the education sector of India.
- 2) Madhuri Hooda and B. Chandan, (2023), have focused on the contribution of AI technology in the field of education and discussed equity through AI. Apart from these authors have explored the various challenges for AI in Indian education. Authors have also critically discussed on new education policy about the usage of AI tools in education sector of India.
- 3) Srinivas Narayan and B. D. Nivedita, (2025), have explored the effects of AI intervention in Indian higher education sector. Apart from these authors have focused on its benefits and challenges. Authors have critically discussed the role of AI in shaping the future of higher education in the context of research, skill development and accessibility.
- 4) Anju Agarwal and Rownet Kaur, (2025), have examined how the usage of AI tools in higher educational tasks and how it impacts on the students' academic performance. Authors have also explored the students opinion and perception about usage of AI tools in high-stake situations. Authors have also focused on the need for educational institutions to use AI in a way that is equitable.

Objectives -

- 1) To explore the intervention of AI in higher education.
- 2) To explore the AI tools used by college students for their academic purposes.
- 3) To focus on the advantages and disadvantages of Ai intervention in higher education.
- 4) To focus on the challenges of AI in higher education system.

Method of study –

The present study is exclusively based on the secondary information which is collected through the various study papers, articles, published in national and international journals, periodicals, magazines etc. The information available on Internet is also referred for the study.

Intervention of AI in Indian higher education system –

AI technology has developed to such an extent that it can help the students to store huge data in a small device, that is smart phone. Teachers also need to learn constantly and assimilate the innovative modes of teaching. Especially in education the usage of AI based technology in teaching process can transform the teaching technique. At the same time the learning style of the students will also change. Imparting person-centered education in a classroom with a large number of students is a major challenge for the teachers. However, if there is effective application of AI based technology in learning and teaching process, there may be a drastic transformation in the education system. With the help of AI technology, the education process can change from a stereotyped system and more towards person-centered education. This will primarily consider the needs and interests of the students. There is a need to develop AI tools, so that the interest of the students in education increases along with the increase in the number of students. Apart from this AI technology is used



to get the right feedback from the assessment to the teachers by analyzing the answers written by the students in the examination AI based technology can help the teachers that, whether the students understood the topic correctly or not. It may help the teachers to make the appropriate changes in the teaching modes, style, pace and teaching tools. AI technology can help the students with improving learning and possibly be a substitute for genuine world mentoring. Teachers can encourage AI based exercise which helps the students who are attempting to cope up. The role of AI technology is very important in the context of personalized learning process, providing intelligent tutoring classes pertaining to complex topics for students, assisting students in analyzing huge data quickly, identifying patterns, and generating insights, predictive analysis of student's performance, their skill development and career guidance. Apart from this, AI technology has also proved useful in increasing the writing ability and vocabulary of students. With the help of AI technology, the administrative tasks in educational institutes and universities have become faster than before. It has proved useful in curriculum planning, preparation of timetable etc. AI technology has provided interactive and adaptive learning and teaching methods, where the students can explore the content at their own pace, get quick feedback and can seek personalized help which has caused them to increase their motivation and active involvement in the education process and helps them in successful learning process. Teachers are also getting valuable insights due to intervention of AI technology in the education system. It helps them in understanding students' needs and tailor instructions accordingly.

AI tools usage by college students for their academic purposes

Now a days, majority of college students prefer for using different academic apps through the smart phone because these Apps are easily accessible. These Apps can fulfill the academic needs of higher education students that is – online courses. Some Apps serve as an escape from academic pressure. Based on some empirical studies, findings, BYJU's, Vedantu, Topper are some of the popular Apps which provides interactive lessons, live classes etc. Apart from this, Khan Academy provides free core subject learning and the Apps like – Quizlet, kaboot are also offers interactive study tools. Doubtnut App is also popular among higher education students for instant video solutions to maths and science problems. All these Apps proved as a supportive tool for self-paced learning and live classes with teachers. These Apps have the main objective of improving conceptual clarity, practice and exam performance. The App like-Topper offers adaptive learning, practical tests and AI driven insights to the students.

The Apps like – Notion, Google suite, Quizlet, Grammarly etc. are also supported to the students in managing their academic tasks – from taking down notes and research work. The scope of AI tools usage has widened because of its updated and improved versions of AI. With the help of AI tools, education can be imparted according to academic strengths and weaknesses and as per the potentials of the students and as per their grasping ability. Apps like Coursers and Udemy provide university level courses and provide professional skills training from global experts for the academic career development of the students. Utilization of AI tools by the higher education students facilitates personalized learning by creating contents as per their academic needs. Intervention of AI technology in higher education facilitates the students to personalize the acquisition of information at their own pace and acceptance within the field where they require more assistance. Some academic experts have pointed out that; majority of the students are using generative AI Chatbots like – Chat GPT which assisting them in their studies and other academic tasks. According to these experts' students and teachers believe that AI tools usage has improved their learning and teaching ability. Ability to tailor instruction as per the needs of the students is a significant advantage of AI usage in higher education. AI Apps also proved useful in understanding the complex concepts, and terminologies in the mathematics, sciences, economics etc. in simple words.



Through the AI intervention in higher education proved as useful, there are some disadvantages also existed due to excessive usage of AI technology by higher education students. Due to dependency on AI Apps, their ability to think, testing and ability of logical analysis, criticism and ability of self-learning are negatively impacted, due to excessive usage of AI in learning process. Based on the above discussion, some advantages and disadvantages are presented in the following -

Advantages and disadvantages of AI intervention in Higher Education.

Intervention of AI technology in higher education streamlines different tasks and it makes the entire education process (teaching and learning) hassle free.

Advantages of AI intervention in Higher education –

- 1) Integration of AI technology in higher education enables personalized learning through tailoring educational contents to meet the educational requirements of the students.
- 2) AI technology has provided innovative and immersive learning experiences to the students that involve them in ways that conservational teaching and learning modes can not.
- 3) Technology like virtual reality and augmented reality can simulate the real-world scenarios and conceptual complexities and make learning process for students attractive and interactive.
- 4) Due to the advanced and innovative nature of AI technology there is an improvement in the students' involvement in learning process and growth in their motivation.
- 5) Education has become cost-effective to some extent, due to automation of administrative tasks like grading assignments, scheduling and managing the students; that frees up time for teachers to concentrate on teaching.
- 6) AI oriented tutoring systems provide guidance and support to the students through one-on-one tutoring. Because of AI technology teachers are now able to identify knowledge gaps, and they can suggest the appropriate resources and can adjust the difficulties in tasks to cope with the students' ability.
- 7) Due to the intervention of AI technology, there is an improvement in the academic standards and improvement in the quality of education.

Disadvantages of AI intervention in Higher Education –

- 1) Risk of data privacy is one of the major disadvantages of AI intervention in higher education. Inadequate safety information of students. It can potentially result in theft of information or other forms of misuse.
- 2) Increasing dependency on technology is also one of the major disadvantages. This dependency can be caused to disruptions at the time of technological failures or cyber-attacks. It may also diminish the thinking and problem-solving ability of the students.
- 3) Absence of human touch is a critical disadvantage. It can lead to de-humanized learning experience. It can negatively impact students' social-emotional development and their motivation in education process.
- 4) Intervention of AI in higher education can increase the risk of cheating. AI tools can be misused by the students to find ways to bypass academic integrity measures.

Challenges of AI intervention in higher education system

- 1) Inequality in accessing AI based educational platforms, in rural areas and accessing by economically weaker section is a major challenge of AI usage it caused to digital deviations.
- 2) Privacy and security of data are also one of the major challenges for the application AI tools in higher education.
- 3) Application of AI tools in higher education processes need huge amounts of investment for the establishment of infrastructure, software and maintenance.
- 4) Bias in AI algorithms can cause unfair evaluations. This is also one of the major challenges of AI intervention in education



Inconclusion –

The integration of AI tools into higher educational system is a requirement to address the educational challenges and it prepare students for an increasingly AI integrated world. Indian teachers are at the central point of this educational transformation, developing critical thinkers who can effectively collaborate with AI systems while maintaining their creative autonomy and ethical reasoning. The AI technology serves learning and the future of higher education is neither fully human nor fully artificial. It is a thoughtful synthesis that harnesses the complementary strengths of teachers and AI systems to create learning environment, in which every student, regardless of their background, can thrive.

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