

# Integrating Artificial Intelligence in Higher Education in India: Policy Considerations for Making Education More Integrated

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**Abstract:** Recent developments in the field of technology are transforming the higher education landscape of India in a massive way. The traditional models of teaching and learning are getting replaced by AI driven modalities and pedagogy which fosters innovation, entrepreneurship and employability. However, serious concerns are also being raised highlighting the diminishing critical thinking and decision making skill along with declining engagement and language skills among the learners. The present paper ascertaining reflective literature review proposes policy considerations for AI integration into the higher educational framework of India. The research focuses on exploring the current status of integration of artificial intelligence with higher education in India and propose suitable policy framework for making artificial Intelligence being integrated into teaching learning functions of Indian higher education to ensure inclusivity, diversity and equity. Finally, the paper highlights the roadmap towards the achievement of the SDGs along with the vision of becoming a developed nation or 'Viksit Bharat' by incorporating inclusivity, diversity and equity in Indian higher education framework through artificial intelligence.

**Key Words:** Artificial intelligence, higher education, innovation, inclusivity, diversity, equity.

**Introduction:** Higher educational institutions in recent years are battling hard to integrate technological disruptions, particularly artificial intelligence, within their ecosystem to align with the changing world of academics. The traditional definition of 'literacy' highlighting one's capacity to read and write has now shifted to incorporate exhaustive dimensions of 'digital literacy' along with other aspects like visual, media and computer literacy (Kong et al., 2021; Potter, 2018). Sufficient empirical evidences exist to substantiate the critical role of artificial intelligence in enhancing knowledge, skills and abilities among the learners and creating a more economically stable society and valued human capital (Kovalainen et al., 2025). Higher educational institutions have also been acknowledged as critical partners towards achieving SDGs by 2030 through ensuring quality learning opportunities which is inclusive, democratic, and within reach to all (Borsatto et al., 2024). In this regard, there are evidences to establish crucial linkage between artificial intelligence and achievement of sustainable development goals from multifarious perspective (Leal Filho et al., 2022). Implementation of artificial intelligence takes the way of academics a way ahead through enhancement of governance and ensuring academic effectiveness of the educational system (C. Wang et al., 2025). However, the scenario of adoption and implementation artificial intelligence in a developing country like India is still at its nascent stage. The problem concerning low intake and dropout of students in higher education in India are ascribed to causes of inclusivity and accessibility, which if addressed through leveraging the benefits of artificial intelligence, can address the problem of gross enrollment ratio in the higher education landscape. Along with these,

issues related to flexibility, engagement, attendance, accessibility can also be addressed through customized AI tools resulting in making the higher education more inclusive and result driven. With these considerations, the present paper performs reflective literature review to understand the current educational scenario in India pointing out the major concerns and issues and suggests suitable policy framework for making artificial intelligence more integrated into the Indian higher educational system. The central review objectives in the present research are focused around exploring the challenges and deliverables related to adoption of AI in the higher education system in India and propose policy recommendations for effective and inclusive AI integration to make the higher education system more inclusive, diversified and equitable. The reason for ascertaining reflective literature review is embedded in the argument that reflective literature review, through eliciting deeper understanding, offers the roadmap for future learning and development (Campbell & Rogers, 2022). This understanding and learning can be used to propose suggestions and policy frameworks. The final outcome of the paper draws on conclusion that, artificial intelligence, despite the concerns being raised in recent years, if implemented and used under proper policy guidelines can make the Indian higher education system, which is marked by anomalies, more equal, democratic and inclusive. This will also help nation move forward towards achieving the SDG goals along with the vision of becoming a developed nation or 'Viksit Bharat' by incorporating inclusivity, diversity and equity through artificial intelligence.

**Artificial Intelligence in Higher Education:** The term 'Artificial Intelligence' or AI came into limelight after the publication of Dartmouth Summer Research Project in the year 1956 which gave wide publicity to artificial intelligence as a field of research and application in diversified field of study (McCarthy et al., 1955; Tzirides et al., 2024)). In general parlance, AI refers to the cognitive and decision making functions of human minds performed by computers and allied technological devices (Mohd Ali et al., 2015). With its evolving nature, artificial intelligence has now been integrated into our everyday lives and transformed the world in significant ways. The adoption of AI has been more speedy in professional contexts like medicine, management etc. (Laupichler et al., 2022). The domain of higher education did not remain immune of this technological disruption and has been appreciated and accepted by higher educational institutions across the globe. However, the field of higher education largely remained immune to this technological infringement and it was only after global pandemic that the world of academics took notice to this unstoppable wave of technological disruption. While the reliance on artificial intelligence paved way to multiple benefits, it also suffered from several drawbacks. Studies supporting enhanced communication skills, particularly learning of English language, and better academic writing exist in scholarly journals (Annamalai et al., 2025). AI also highlighted the potential to reach out to the learning population primarily due to two reasons: the easy and cheap availability of electronic devices, and the availability of digital platforms offering different academic courses along with AI enabled application software like ChatGPT has made learning more engaging and easy for learners. Unfortunately, these AI enabled applications suffer from serious flaws. Data privacy, ethics, transparency remain at high stake while AI is at display. Alongside, the resistance from the side of educational institutions and perception of the teachers are also observed to be major barriers in adoption of AI in higher education system (McGrath et al., 2023). Artificial intelligence can improvise and strengthen the governance structure of higher education institutions. AI can facilitate an institution to utilize information in accurate way resulting in better decision making and efficient delivery of results. Higher education institutions are mainly driven by research and innovation. Delayed decision making reduces the novelty and relevance of ideas hurting the very spirit of innovation. This can be understood through the theoretical framework of Dynamic Capability which asserts that innovative capabilities are enhanced through use and leveraging of artificial intelligence (Gao et al., 2025). This theory has been practically implemented in different business enterprises where new heights have been achieved through nurturing innovative ideas with proper use of artificial intelligence. This requires a research oriented approach in which educational institutions lag behind. Adoption of artificial intelligence in higher education ecosystem will make the educational institutes more adaptable

to the changing and volatile environment. This remains one of the primary requisites for the students undertaking higher education, more particularly professional courses like management and technology. Also, the acute shortage of quality faculty, which remains one of the critical challenge for higher education in India can be addressed through artificial intelligence.

Computing technologies along with big data has transforming the world of academics in unimaginable ways (Pargman et al., 2024). This has resulted in personalization or customization of learning experiences based on the personal characteristics or preferences of the learners (Hwang et al., 2020). This learning flexibility can address the problem related to poor gross enrollment ratio of GER in countries situated in Global South and African Continent. India, in this context has been struggling hard to improvise the gross enrollment ratio in recent years. With this objective, the Indian government also implemented New Education Policy (NEP) 2020 which largely focused on improving gross enrollment ratio by restructuring the educational system of the country. Considering flexibility as the foundational pillar of education system, NEP 2020 intended to improve the inflow of students into higher education through offering flexible educational arrangements to the learners. In this perspective, AI can play a crucial role in helping the government reach the target of achieving the desired gross enrollment ratio in higher education. The presence of artificial intelligence in the field of academics has been felt since early 1980s with the introduction of intelligent tutoring systems or the ITS (Hwang et al., 2020). Nowadays this use of AI in education has given birth to an integrated term called 'AIED' or Artificial Intelligence in Education which encompasses all the AI tools which are currently being used to make the education system more flexible, convenient and learning friendly. However, there are concerns among the scholars regarding different issues related to AI which are affecting the academics in educational institutions. For example, different AI tools facilitating learning are now being treated by the students as substitutes of teachers which is emerging out as a grave cause of concern. Alongside, issues also remain regarding the motivation, engagement, discipline among the learners who accept AI as learning tools. There still remains enough empirical research vacuum to substantiate claims underlining positive aspects of AI in higher education (McGrath et al., 2024). AI as facilitators of teaching and learning are yet to be evaluated on parameters of fairness, transparency, accountability and social responsibility (Floridi & Cowls, 2019). The upcoming section explores different concerns related to AI in higher education.

**Artificial Intelligence in Higher Education: Concerns and Issues:** The primary concerns regarding adoption and implementation of AI in higher education may largely be ascribed to aspects related to the ethical knowledge regarding application of artificial intelligence (Yue Yim, 2024). Despite the fact that AI is very soon going to penetrate every aspect related to teaching and learning, all the concerned stakeholders have very limited understanding related to the ethical and biasness issues governing AI in higher education. Debates on whether AI in academics creates a world of digital divide are on rise. The use of AI is largely depended on high tech devices. Since a substantial part of the population do not have access to digital devices owing to poor financial condition and limited IT infrastructure, the benefits of AI are leveraged by only those who have access to digital devices. This creates a world of digital divide. Even if it is assumed that different government schemes emphasizing on distribution of mobile devices very soon will address this issue, the problem lies in the limited exposure of the learners (and faculty as well) to the proper usage of artificial intelligence to facilitate learning. Also, as these AI tools are heavily dependent on the data provided by the users, there are high chances of misuse of data amidst the rising cases of cyber crimes. Learners from marginalized communities are more vulnerable to violation of data privacy and data exploitation since the permission to use data has been obtained from them without their proper consent (Hanna et al., 2025). With the advent of generative AI, the chances of discrimination and prejudices in academic world may become a new challenge. Based on inaccurate and incomplete data, generative AI may project a picture which may be discriminating the teaching and learning community from different perspective. For example, the courses which are expensive and are preferred by affluent

class of students may be presented as 'highly popular' on different platforms forcing the financially deprived to refrain from choosing the course. This will hurt the spirit of inclusivity, equity and diversity in higher academics in the country. India has been a country of much diversified culture, language, religions, and demographic profiles. AI should be developed and implemented in such a manner that it suits and meets the diversified needs of the different stakeholders in academics.

Issues related to engagement, involvement and motivation are also found to be serious concerns with AI based teaching and learning. Since the AI based modality of teaching and learning offers the students the flexibility to learn at their own pace, it leads to loss of engagement, involvement and motivation in academics. This often hurts the spirit of research which stands as the primary fulcrums of higher education in the country. It also hurts the critical thinking and decision making power among the students (Nguyen et al., 2024). The homogeneity of the materials offered by the AI tools makes learning 'not so engaging' resulting in loss of interest of the students. This also propels the problem of 'employability' in a labour surplus country like India. Limited research is available to highlight the extent to which AI enabled learning promotes employability among the students. A personalized approach may address the issue and make the learning experience more immersive and engaging. Also, introducing game-like elements or gamification of the instructional materials are found to be making the teaching learning experience more engaging and fun driven (Alam, 2023).

In the year 2018, the National Institution for Transforming India or NITI Aayog emphasized the need for incorporation of artificial intelligence in transforming the landscape of higher education in India. India and China have the unique achievement of establishing highest number of universities in the world. India ranks second. However, when compared to the manpower in India, the human resource in China is more valued due their technological advancement and skill level. This mismatch can be address through integrating artificial intelligence with education. The New Education Policy emphasizes more on revamping the institutions and making education more holistic. Whereas China has been completely committed towards making their higher education ecosystem driven and governed by high end technological advancements and AI enabled teaching and learning framework (Jain, 2020). The upcoming section will highlight some the policy recommendations to integrate higher education in India more integrated with artificial intelligence.

**Artificial Intelligence in Higher Education: Policy Considerations:** On the basis of the discussions highlighted in the previous section, it can be assumed with valid justifications that alignment and integration of artificial intelligence with the higher educational framework has become an imperative to address multiple challenges inherent within the higher educational system. However, the country is still to come up with concrete roadmap in terms of policy considerations for integration of artificial intelligence into the higher education framework. In case, the inconsistency between AI and higher education widens up, there are high chances that higher education scenario which is rapidly changing shall fail to adapt with the changing needs of the hour. With India inhabited by large number of manpower, appropriate strategies must be put in place to integrate AI with higher education to address the skill gap and make the learning community more employable. This section offers some policy recommendations for effective integration of AI and higher education in India.

- Artificial intelligence nurtures innovative spirit and improvises learning experiences making the students and learners better equipped with latest digital and technological advancements (Abulibdeh et al., 2024). There should be policy guidelines for every higher education institution to improve the IT infrastructure to impart education using artificial intelligence. Budgetary guidelines shall be there to guide the institutions regarding ratio of spending of the sanctioned budget for the implementation of AI. AI related courses can be made mandatory for the students. Regular quality assessments shall be put in place to assess whether institutions are offering AI based courses along with measuring the effectiveness of the teaching pedagogy to impart

teaching and learning. To make higher education more technological oriented, New Education Policy proposes to establish the National Educational Technology Forum (NETF) and National Digital Education Architecture (NDEA) which will oversee the technology related aspects in higher education in India. However, more data driven approach shall be required to make these bodies successful in helping higher education institutions to integrate AI with academics.

- AI based education shall be made available to every individual who is willing to learn. Since digital devices (or gadgets) are critical to artificial intelligence, the government shall emphasize more policies like 'Make in India' to make digital devices available at reduced costs to each and every learner. Policies with respect to this area shall reduce the broadening digital divide. This is also critical to driving AI driven learning among the students.
- Subjectivity during performance evaluation and assessment of the students has remained a primary concern in academics. Humans are governed by cultural, educational, economic backgrounds while making an assessment of others. Humans tend to take side or favour while assessing the performance of the students. Studies reveal that AI can address the issue and bring transparency and ensure objectivity in academics. Policy related to students' feedback and evaluation must be done through integration of AI and not through any assessor. This will ensure fairness in examinations in higher education and establish trust among the stakeholders.
- Majority of the AI tools are developed in American or European countries which are essentially English speaking countries. Biasness may prevail while assessing non-English learners. Also, the upgraded or premium versions of AI tools can offer an edge to the students who can afford them resulting in biasness. Therefore, only selected AI tools shall be used by educational institutions which focus on content of the examiners only. The higher educational institutions may be asked to select AI tools as per their own convenience and provide the required training to use the tools. The Malaviya Mission Teacher Training Centres (MMTTCs), shall be provided with guidelines to frequently offer hands on training programmes on how to use artificial intelligence tools in evaluation and assessment. This will ensure parity in examination system and mitigate the biasness and unethical use of AI in education (P. S. , 2023). In line with Faculty Induction Programmes and Refresher Courses, the teachers and administrators shall also be oriented every year with the emerging patterns of assessment and evaluation and parameters shall be proposed for the effective implementation of these tools.
- Another issues highlighted in previous section was related to disengagement and lack of motivation among the students learning with AI. AI tools are yet to evolve to understand human emotions resulting in failure to come up with engaging learning experience. However, courses using gamification pedagogy can help address this issue. The courses run in higher educational institutions, particularly in government run institutions are traditional and instruction medium is generally one sided. Proper policies related to developing courses which incorporate AI simulations, games etc will enhance the student engagement and motivate the students. Simultaneously, the teachers shall perform teaching exercise to make teaching learning more interactive. The courses developed integrating human and AI interaction shall create a better environment for teaching and learning. This will also ensure that even the slow learners receive equal treatment while they learn. Adaptive Learning Systems of ALS can help in this regard as these tools keep on improving the quality and standard of the course content with the academic progress of the students making the learning experience more immersive and engaging. This will also put little burden on the already overburdened teachers in the field of higher education in the country. The faculty members are already engaged in research related activities which consume a majority portion of their time. Courses developed with an integration of human and technology interaction will offer benefits to the students as well as to the faculty members.

- Policies underlining avoidance of course developed using AI shall also be put in place. Use of AI tools like ChatGPT, Metaverse, etc are likely to develop course contents which may not be reliable and authentic as they fetch information from already uploaded information on several platforms and websites. This will also help in mitigating the problem of plagiarism in research related activities which has become a menace in recent years. There is an increase in the use of academic literature created through using AI which is often very inaccurate, biased, lack rigorous methodological approach and proper citations. This has also affected the research orientation among the research fraternity in higher education. The students are also found to be using AI tools to prepare their reports making them more dependent on AI tools giving very little scope to think beyond the boundaries. Often termed as ‘academic misconduct’, this diminishes critical thinking among students. In the year 2019, the University Grants Commission introduced a course on Research and Publication Ethics for the students enrolled in research programmes across all universities in India. The same can be introduced at graduate and post graduate levels. Use of AI in higher education cannot be accepted at all the levels and even if it is used, it shall be limited. Therefore, courses focusing on awareness to avoid (and use as well) artificial intelligence in academics shall be introduced. All India Council of Technical Education (AICTE) has introduced policy for avoidance of plagiarism in technical courses. However, it does not specifically say anything about use of AI by the students in such courses. Specific policy guidelines in this regard can address the issue in a better way. Since use of artificial intelligence has been prevalent across all the aspects of teaching and learning, the policy guidelines should be holistic in nature incorporating pedagogical, governance and operational sides of higher education (Chan, 2023). AI, available in different versions like the big data, predictive analytics, generative AI, etc, if used properly can address different issues related to mapping the trajectory of students academic progress, developing suitable assessment and feedback mechanism and creating courses which are in alignment with the industry needs and interest of the students. The higher educational institutes may be directed to establish ethical committees to oversee the issue of ethical concerns in teaching, learning and research. These committees shall be made mandatory and matters related to violation may reported online directly to the concerned stakeholders.
- The Beijing Consensus on Artificial Intelligence adopted in the year 2019, which was an outcome of International Conference on Artificial Intelligence and Education shall also be taken into consideration for preparing policy with respect to integration of AI and higher education in the country. Beijing Consensus emphasized on the need for policies to address the issue related to gender gap in AI in the field of higher education. Policy preventing use of tools fostering discriminating among the students shall be put in place to make the academic landscape of India more democratic and inclusive. Special funded courses or programmes on artificial intelligence can be organized for female and older population by the higher educational institutions to ensure participation of the marginalized community in India.

**Achieving SDGs: Integrating NEP 2020, Higher Education and Artificial Intelligence:** India, as a signatory to the UN Agenda 2030 aspires to achieve the vision of Viksit Bharat or a developed nation by the year 2047. This also marks 100 years of Indian gaining independence from the British rule. The roadmap to achieve this goal passes through achieving 17 integrated goals, also known as Sustainable Development Goals or SDGs, which focus largely on inclusivity, equity, sustainability, and social justice. To achieve the goal, New Education Policy 2020 was implemented to make the educational structure in India more inclusive, democratic and relevant. India faces multiple changes in terms of regional and socio-economic divides, linguistic and cultural barriers, to name a few. These challenges can be mitigated to a great extent through education only. However, the task of unifying the academic structure into a single framework is a very difficult one. NEP 2020, through leveraging artificial intelligence attempts to address this gap. Technology through bringing different stakeholders of higher education system at a single platform can address the problems related to inequity and inclusivity. To address the diversification of the stakeholders, the

NEP 2020 encourages institutions to adopt adaptive learning systems. As the learning pedagogy becomes personalized and flexible under adaptive learning systems, backed by AI tracking the real time progress of a learner, it makes students more engaged in learning and minimizes the problem of dropout (Kabudi et al., 2021). Also, as these adopt adaptive learning systems are multilingual and developed for differently-abled students, they endorse inclusivity and reduce language barriers ensuring all learners learn same thing in same manner and at the same time. The key policy decision to establish Multidisciplinary Education and Research Universities or MERU which will serve as model centres for development of AI enabled platforms to promote teaching and learning alongside making the stakeholders of the advantages of AI in academics. This will help the nation achieve the target of 50 percent Gross Enrolment Ratio by the end of 2035. By incorporating adult and lifelong learning provisions, NEP 2020 makes itself aligned with the SDG goal 4. This attempt ensures skill enhancement and skill upgradation among already employed workforce and budding entrepreneurs. There are empirical evidences to establish how lifelong learning strategies adopted by governments have resulted in nurturing the culture of entrepreneurship and vocational education which promotes innovative spirit and continuous development (M. Wang et al., 2024; Zuo et al., 2025). NEP 2020 also encourages institutions to minimize the widening gap between male and female students when it comes to learning. Studies underline the decline of female students, particularly in subjects like science and technology which ultimately results in occupational segregation when it comes to employment of female employees (Hammond et al., 2020). Also, female students, due to limited exposure to technology lag behind in the job market. Women are observed to be become financially independent when they gain an access to employment oriented knowledge resulting in formal employment chances by 35% (India Employment Report, 2024). Therefore, integrating AI and other technological disruptions into the higher educational framework will ensure better employability and skill upgradation of female students. This will help to achieve the SDG 5 concerning gender equality and empowerment. One of the strategies to ensure this can be formulating policy to provide better access to digital devices to the female learners in higher educational institutions. Corporations can offer a helping hand in this direction. Through industry-institute partnership formula, which is one of the initiatives under NEP 2020, the higher educational institutions can enter into collaboration with IT related corporations to provide IT enabled devices which are no more required by them. This will also address the problem of e-waste management as redundant electronic devices will again come into use by the students and learners who are not in a position to avail them. In exchange, the corporations can also claim benefit of CSR spending towards skill development.

NEP through offering scholarships to female learners and marginalized communities, in indirect ways, also tries to achieve the target of gender equality and social equality. Also, through promoting interdisciplinary approach, courses which teach AI with other subjects in humanities, social science etc. are prepared to make female students develop their skills in technology. This will address the problem of skill shortage in the coming future. The dream of digital transformation and technology advanced nation can be achieved if each and every individual can leverage technology to earn their livelihood. NEP 2020 in multiple ways explores to make country advanced in technology through incorporating Sustainable Development Goals across its policy framework of education.

**Conclusion:** Artificial intelligence, despite its certain drawbacks, can revolutionize the academic landscape of higher education in India. Technology has the potential to make the society more democratic and eradicate inequality from diversified angles. Simply using a digital device, the learners can have access to knowledge in their own language, suited to their own culture and as per their interest. This will transform the entire dynamics of higher education in India which still is stuck between the modern and traditional modalities of imparting education. The world is moving very fast adapting latest technological advancements. No individual, no sector, no industry will remain immune to the technological advancements, specifically artificial intelligence in the upcoming times. The way it is taking an indispensable role in our lives, it is hard to imagine its trajectory and future impacts in the world of academics as well.

By putting in place appropriate policies, the ill-sides of artificial intelligence can be tackled and controlled. The false apprehension that artificial intelligence will replace the job of the educators shall also be taken due care (Al Dhaen et al., 2022). Implementation of artificial intelligence in higher education will improve employability among the learners. Professional skills can be learned easily with artificial intelligence. For example, using artificial intelligence, accounting skills on Microsoft Excel can be performed easily. This will lead to value addition among the learners and make them more saleable in the job market. Through AI integration, higher educational institutions can cater to the need of developing human capital in the country. India is vastly rich when it comes to human capital. The need of the hour is to nurture, enrich and leverage the human capital of the country to move ahead fast forward.

The Indian higher education system comprises of both private and public universities and institutions. The present research adopts theoretical approach to propose policy frameworks for making AI and higher education system more integrated. This makes the present study limited as it does not incorporate the empirical evidences to assess the impacts of AI on higher educational institutions. Longitudinal studies are required to understand the impacts of AI on the outcomes of higher educational institutions. Ground breaking empirical research shall be conducted to compare and contrast the performance of both private and public higher educational institutions with respect to the integration of AI in teaching, learning and research from a holistic perspective. Institutional case studies can further explore and suggest ways to make AI more integrated into the higher education ecosystem of the country.

Integration of artificial intelligence with higher education becomes an imperative and must be done at the earliest to achieve the vision of becoming a developed nation by the year 2047. Higher education and artificial intelligence must go hand in hand to achieve the vision.

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