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Artificial Intelligence in Indian higher education

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Abstract :

The integration of AI, in higher education promises to reform knowledge creation, delivery of teaching and learning experiences, and the way research is produced and disseminated; similarly, it also shows impacts on assessment, institutional administrative functions and workforce education., AI is perceived as a catalyst for institution re-imagination, redefining both ends and means of higher education. However, despite abundant academic discussions conducted on various aspects of AI-powered higher education, from applications and Ed-Tech to ethics, governance and policy measures, to date, few have investigated these interrelated dynamics, with very little appearing in Indian-context literature. There has been little attempt to explain how technology innovation, education policy, institutional readiness and pedagogy interact to constitute AI in higher education.

This paper provides a synthetic narrative review of the progressively impacting role of AI in the context of higher education in India, analysing peer reviewed-journal articles, policy documents and government- reports as well as NGO/IGO reports to explore how AI affects patterns of learning and knowledge discovery, addressing the emerging importance of generative AI on the higher education terrain, along with impacts across a scope of teaching-learning settings, research, institution governance and the grooming of future workforce.

This paper aims analyses major Indian policy responses from NEP 2020 and other government-driven digitization initiatives, evaluating their function in enabling of an ethical and sensible integration of AI.

Keywords- AI, Higher Education, Generative AI, India, Educational transformation.

Introduction

The system of higher education in India has passed through several phases of policy reforms influenced by the shifting agendas at the national level and the country's pursuit of socioeconomic development and

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technological progress. Beginning with the National Education Policy, 1968, (mostly guided by Kothari Commission's report of 1964-1966), fundamental goals of equity, quality, national integration and quantitative expansion were laid and a structure to guide and expand post-independence higher education system of India.

The early reforms mainly tried to achieve expand access, streamline curriculum and institutions; but were framed under a prevailing assumption that building new knowledge, teaching, learning, institution governance were inherently human endeavours ***(Ogunleye et al., 2024).*** With, Rapid growth of Artificial Intelligence (AI), particularly with the development of Generative AI ,this fundamental assumption is challenged by converting it from passive provider of pedagogical resources to active participant on the higher education continuum.

Generative AI, is significantly expands beyond assisting, storing, delivering and accessing the teaching/learning material, to the functions of generating knowledge through its interaction, supporting student's engagement, learning and creating new ways to perform many cognitively and procedurally intensive task, traditionally done by educators, researchers, administrative staff and students ***(Ogunleye et al., 2024; Patwardhan, 2023).*** This implies AI not just functions as a technology supporting high education institution, but has become an active agent, playing roles in teaching and learning, researching, evaluation, writing, academic publication and administrative processes. ***(Patwardhan, 2023; Ogunleye et al., 2024; Neumann et al., 2026)***.

This situation is unique for Indian higher education system with the massive youth population size, cultural variety and inherent complexity of a system to be able to reach new frontiers by making it adaptable not just technologically, but to build human capital to succeed globally and to cope up with an ever increasingly AI-driven knowledge global society ***(Kumari, 2025)***.To harness this transformation appropriately Indian policy framework needs adequate attention towards the institutional Governance, digitally enabling education systems, curriculum redesign, teacher preparation, research and evaluation infrastructure etc. Government of India in response to these needs has introduced initiatives for the digital transformation of higher education sector from time to time like Digital India, SWAYAM, ABC, NETF, NPAI, India AI Mission to boost up development of a digitally competent and future ready higher education sector.

The National Education Policy (NEP) 2020 envisions the use of technology to enhance the multidimensional education through learning, innovation, and creativity; support lifelong learning and up-skilling of faculty, scholars and students. This enables integration of AI across teaching, learning, research, and governance to achieve enhanced pedagogical outcomes and efficiency in administration of educational institutions and research (Saranya, 2025).

In recent years numerous articles and studies have discussed aspects of the growing impact of AI, in field including teaching and learning, generic AI applications, use of ICT and ed-tech, governance issues, ethics and the digital transformation of higher education, as well as how NEP 2020 will impact India's higher education sector Although, The separate nature of the studies leaves the need for an integrated understanding about how technological innovation, educational policy, changes in teaching practices, institutional preparedness and governance practices interact to influence the AI-enhanced higher education landscape in India.

AI, when viewed through an integrated lens , offers deeper insights into how educational policy and practice have interacted with rapidly advancing innovation to reshaped learning institutions (Jamunadevi et al., 2025; Neumann et al., 2026). This is vital for the planning and adoption of responsible and sustainable AI-enhanced solutions for higher education institutions.

This research article thus draws together contemporary scholarly literature together with various international and national policy documents for comprehensive and coherent overview and analyses of the role of Artificial Intelligence (AI) in higher education in India.

The analysis identifies key trends, such as; the evolution of knowledge seeking and construction; proliferation of generative AI tools for teaching, learning, research, assessment and governance; changing pedagogical, curriculum requirements and workforce demand; current government policies. The study highlights how various aspects come together to shape the higher education institutions, in the context of Artificial Intelligence transformation, providing policy makers, educators and institutional leaders with evidence informed insight to address this rapidly advancing technology and develop responsible, inclusive, equitable and future-ready higher education system.

The Evolution of Knowledge Acquisition and Information-Seeking Behaviour

As hinted at above, the changes to higher education in the AI era demands concurrently the evolution of knowledge acquisition and of information- seeking behaviour. AI is not the first, but the latest stage of a much longer epistemic transition where the value of education has shifted away from mere information access towards creation, evaluation and application of knowledge. Recent changes in education have less to do with technology, than with changing conceptions of knowledge ***(Dwivedi et al., 2019; UNESCO, 2022).***

Historically, the practice of information seeking evolved away from technology to more user-centric models.

First came (1940s-1970s) the age of technical search, that focused on efficient library cataloguing, indexing and searching technologies. Knowledge was, in effect, considered to exist externally in a sort of external information infrastructure that a user could search by navigating technical indexes. Education was mostly transmission driven and cantered on simply providing access to information. In the second age of research (1970s-1980s) researchers recognized the significance of user-specific behaviour, cognitive strategies, and motivation for Information retrieval and consequently moved from viewing Information seeking as a purely technical problem. The scope for applying those theoretical insights expanded significantly with increased digitization and expansion of the WWW ***(Dwivedi et al., 2019)***,

Tithe third age, transformed Information seeking from retrieval only in addition to searching and evaluative search, to information use or a more complex range of user goals - to interact. Digitization gave rise to demands for skills in both retrieving and applying information, changing education from the transmission of information to generation and management of knowledge and evidence-based reasoning. The broader epistemic shift, beyond technology-centric information behaviours toward human-centric forms of knowledge acquisition, makes it possible for scholars to assert that factors such as intrinsic motivation, effort and bounded rationality ***(Dwivedi et al., 2019)*** significantly affecting learning. This era suggests, More information on its own does not guarantee more knowledge; as multiple factors like-

students' abilities to analyse,comprehend and use data can ultimately influence and have a great impact on their results ***(UNESCO, 2022; Crompton & Burke, 2023)***.

There is a high potential for uneven knowledge sharing and access with digitization ***(UNESCO, 2022; Crompton & Burke, 2023).*** This explains how technology only does not guarantee equal learning for all, especially in countries such as India where disparities exist ***(Dwivedi et al., 2019).*** New forms of searching and retrieving Information are developing with Information-seeking being differentiated from knowledge seeking, whereby the latter also consists of interpretation, validation, integration, as well as, creation, though boundaries remain not fully well defined theoretically ***(Crompton & Burke, 2023).***There are considerable methodological advances in health information-seeking research and education researchers struggle with poor researchers and digital skills and inequity in access to new pedagogical technologies ***(UNESCO, 2022; Crompton & Burke, 2023)***, this shift in the nature of knowledge, Information and Information seeking ultimately determines the nature of higher education as part of the AI age.

Generative AI- and its effects on Higher Education

Generative Artificial Intelligence (Gen AI) has entered the higher education field, redefining the entire terrain by the arrival of Chat GPT in 2022. Unlike older versions of artificial intelligence, this was used mainly in supporting the administrative functions of the universities and providing information searched on campus by its students and academic staff, it later expanded into the territory of instructional delivery, teaching and learning, research, assessment, and academic content production and soon came to redefine many of the processes at the institutional level. It has transcended technical issues like the academic integrity, algorithm bias, data security and several empirical studies suggest the acceptance of these tools by the student population for not only the purposes of traditional information searching but also for a whole raft of learning activities. For instance, a global survey of 76 countries established considerable awareness and continuation of intention in the usage of generative AI, encompassing both searching for information, generating of ideas, summarizing and academic writing for student learners. Similar findings can be observed in numerous learning environments/ cohorts across a range of countries.

In fact, these studies indicate that writing support, research assistantship, generation of innovative ideas, and personalized learning are the most commonly perceived Educational Benefits generative AI presents. Many reports note the advantages of having interactive and contextually specific results delivered by generative AIs rather than sorting, browsing and searching in multiple links as in traditional search engine. ***(Reicho et al., 2026; Chan & Colloton, 2024)***.

From the above findings, one could posit that generative AI is not only increasing accessibility of information but essentially revolutionizing the learning process by reduction in the level of cognitive load. The primary stream of academic literature conceptualized, , GenAI as a learning tool or teaching companion and not as an assistant ***(Ogunleye et al., 2024; Dai et al., 2023; Lee & Moore, 2024; Katsamakas et al., 2024)***.

Along with the other technologies that have previously penetrated the higher education environment, Gen AI comes with its own set of challenges. Numerous researchers identified plagiarism concerns as an ongoing major challenge of student adoption of generative artificial intelligence in academic works, ex-texts being so original and relevant as they easily get passed plagiarism detection software's. ***(Farrelly &***

Baker, 2023; Chan & Colloton, 2024; Kohnke et al., 2023; Bhalla et al., 2024).

Other potential concerns raised includes the possibility of algorithms to harbour hidden biases, proliferation of inaccurate information/misinformation, data privacy issues, uneven access to these technological devices across different categories of student population, and the issues related to academic social responsibility and too much reliance on generated text content***(Farrelly & Baker, 2023; Chan & Colloton, 2024; Kohnke et al., 2023; Bhalla et al., 2024)***.

All in all, the available evidence signifies not every useful, technological possibility has resulted in the best positive results in the overall pedagogical outcomes. Successful integration of Artificial intelligence, thus depends more on the adoption of institutional policies and practices rather than simply the introduction of the relevant technologies alone. This software Therefore, cannot only be viewed as an experimental software anymore but a Structural change that has swept throughout the Universities. ***(Neumann et al., 2026; George & Wooden, 2023; Katsamakas et al., 2024)***.

The question now is How can we best utilize the technology rather than Whether we should adopt the technology?Even though the debate around how generative AI can improve the learning outcomes of students remains central, existing empirical evidence continuously reports the positive impact of utilizing it in higher education compared with other traditional forms of learning, including between K–12 contexts.

Systematic reviews in general, across several continents (e.g. China, the Arab World and the Middle East) and specific discipline-based contexts (e.g. Nursing Education) and some multi institution context studies corroborate these findings with positive effects documented for motivation, learning and achievement ***(Ogunleye et al., 2024; Batista et al., 2024; Juma & Patel, 2024; Chan & Colloton, 2024)*** The idea is that generative AI, it could be nothing more than a superficial facilitator until such time as it is authentically integrated into the context of students' authentic learning activities as well as the process of teaching.

Changing Educational Paradigms in the AI Era

The Role of AI in reshaping the future of education, The educational paradigm shift in the Age of AI is not an adoption of new technology: Instead, AI-mediated education can shift traditional education models at a fundamental epistemological and pedagogical level. Traditional modes of industrial education models that are based on the premises of a universal standardization of content and procedures, as well as memorizing information or procedures are reaching limitations, or have only been subjected to tinkering reform,***(Triyuth, 2025).*** For decades, students' performance in school was valued based on memorizing declarative and procedural information while the language models of ChatGPT and Bard now perform these functions with speed; thus making this skill competencies of relatively less value than before ***(Dai et al, 2025).***

Revolution to move from a knowledge economy where students are expected to master content seems underwent. This revolution seeks to create expertise in conceptual knowledge, as well as epistemology, how knowledge is generated, justified and sustained ***(UNESCO, 2021)***.Education will simply teach critical evaluations while doing rather focusses on the skills to know ***(Matthews, 2024).*** This paradigm shift in knowledge acquiring and use, critical thinking, becomes the structural paradigm: students need to move beyond information recall, production to questioning and justifying-***Matthews, 2024).***

This transformation from industrial era models to those of the 21st Century goes beyond teaching the student what we know to asking them to define knowledge. Traditional process that involved outputs to determine student success faces issues when the student produces content that cannot distinguish itself as uniquely human***(O'Dea, 2024),***. Thus, many higher institutions are replacing standardized testing with multiple stages of process based authentic assessment, which involve elements as reflective thinking, writing, and critical analysis ***(Chiu, 2024).*** Collectively known as Authentic Assessment, the student is assessed less based on his/her product than upon his/her process of critical thinking processes.

This Change in assessment has brought t corresponding changes in faculty knowledge and role. From the traditional academic know-how patterns; faculties also need to develop expertise in AI literacy, effective methods of facilitating students' meta cognition, the ethical issues of deploying AI in education of students; where AI will facilitate learning when and how best, and how to optimize. "From subject matter content presenter to that of orchestrator of learning experiences, facilitator and a guide of the learning and learning journey for students."***(Mollick & Mollick, 2023)***.

Teaching to be better informed, educators must become part of a movement that decentres subject content and knowledge production' and moves towards a model of learning centred not so much on knowers of knowledge or' providers of knowledge, but, rather, on "learners, facilitators, designers, researchers…others that facilitate knowledge 'creation' and innovation. ***(O'Donnel, 2022,).*** This demands a paradigm Shift from those that "know, or know that they know - to those one that can assist other in knowing. ***Triyuth, 2025***.

The 'knowledge' in practice will require the integration of subject content with a range of critical skillsets. Designers of experience, facilitators of creative learning, ethicists of AI use, and even Learning Design Consultants could use artificial intelligence systems in ways most beneficial for student success ***(Dai et al, 2025, Mollick & Mollick, 2023).***

One can take a defensive stance - by actively forbidding technology usage out of fear of a decline in educational quality - OR take a pro-active stance which involves anticipating technology usage." ***Chiu, 2024***, The initial higher education reaction was conservative with AI-this defence stance led to restrictions on the use of AI tools.

To sustain new educational paradigms and the deployment of technologies, system architectures must shift from technological centrist models toward models grounded in human-cantered learning principles such as equity, inclusiveness, and sustainability of education for all. ***Katsamakas et al, 2024)***.

AI requires students to challenge conventions, encourage curiosity, foster the habit of inquiry, engage in the pursuit of answers, embrace reflective learning, and culminate in the formulation of well-informed decisions that contribute to becoming a professional as well as an entire human." ***(Chiu, 2024)***. It is by virtue of this transformational framework of teaching and learning when utilizing AI. And thus, our goal should focus on helping them ask meaningful questions and encourage curiosity so students can explore what they've asked so they can become intelligent human- beings.

The education paradigms are changing across all educational stages, with varying priorities for each stage. Within the K-12 segment, the goal isn't the development of advanced technical skills but rather the nurturing of fundamental AI literacy and human-AI Collaboration***(Casal-Otero et al., 2023).*** The school

programs are accordingly shifting from stringent rule-based more on MACHINE LEARNING-based concepts, DATA LITERACY and human machine Collaboration practices, reflecting the trend toward competency-based, experiential and inquiry-based learning overwrote memorisation ***(Tedre et al., 2021).***

High Education, Curriculum Restructuring and Assessment Reinvention All education stakeholders see higher education as especially impacted by AI's advancements in AI because the generative application of artificial intelligence directly bears on the formation of new knowledge, evaluation, research, and career preparation ***(Batista et al., 2024).*** More explicitly, when more learning tasks performed by AI shift toward information retrieving or standard computational operations, higher education Institutions tend to refocus learning and training on the conceptual domain, epistemic reasoning and higher levels of the Cognitive Competences hierarchy ***(Batista et al., 2024)***. Similarly, existing assessment models tend to move from product – oriented and static tests towards multi - phase authentic evaluation designs that place a focus on the process transparency, critical reasoning, holistic assessment and reflective work ***(Chan & Colloton, 2024)***. In addition to the above mentioned, institutions are adopting sophisticated

infrastructure and policy interventions to help promote a smart campus environment by also reinforcing the AI-assisted Feedback systems ***(George & Wooden, 2023; Lee & Moore, 2024).***

Therefore, one can infer that the purpose of universities will continue expanding to training professionals ready to cope with ever changing conditions.

Lifelong learning and Work Transformation The impact of artificial intelligence does not stop to formal education, creating an expanding system of lifelong and flexible lifelong learning ***(Katsamakas et al., 2024)*** and that can be supported. Because AI will not reduce the scope of professional positions, nor the necessity of work, the future jobs required are characterized by, among others, multidisciplinary problem–solving, adaptability, Collaboration skills, creativity and meta cognitive skills ***(Katsamakas et al., 2024).*** Institutions, together with employers are therefore tending to enrich degrees with professional update and deskilling opportunities so as to deal with continuously rapidly changes related to artificial intelligence.

Providing continuous lifelong learning for teachers and students alike will s soon be required to ensure that the capacity for a continuous acquirement of new, differentiate and utilize information is of paramount importance than ever before. Indian Context Artificial intelligence in the Indian context has been a culmination of the confluence of global education reforms, extensive digital public infrastructure along with India's sizable demographic advantages. It is this convergence, which has fuelled the change, like much of the world, in conjunction with the national policy measures seeks to integrate AI in to education and met the nation's larger agenda of inclusion, exclusion and skills.

The underlying institutional architecture which will support the scaling up of AI-driven transformations in the Indian system of higher education has 'matured'.

Policy Roots and Curriculum inclusion The commencement of an AI-enabled higher education landscape in India has been led by policy reform framing AI as a learning competency and a technology specialist stream. The policy document which is governing the transition is the National Education Policy (NEP) 2020 which has recommended that artificial intelligence, Computational Thinking and future studies should be included as essential competencies in school education at all levels inclusive of beyond the Middle School stage ***(UNESCO, 2022; Ministry of Education, Government of India, 2025).*** The policy

rationale is to facilitate the transition from only learning to creating value through participation in digitized and future-centric work environments. Appropriate regulators for such curriculum inclusion include the CBSE and NCERT that are unveiling relevant curriculum content and carrying out specialized AI initiatives including skill based and Structured AI Modules across the national school education spectrum.

Furthermore, national artificial intelligence and ML-driven translations initiatives are focused on raising awareness of, and providing more equitable access to, educational content by making

resources available in multiple languages, thereby furthering inclusiveness in the field of AI education ***(Casal-Otero et al., 2023).***

Digital Infrastructure and the Nation Ecosystems At the institutional level implementation and use of AI technologies become heavily reliant on enabling settings for their effective adoption, utilization and application. In addition to various policy initiatives focused on the field of education, India is steadily advancing in building its capacity within the digital ecosystem that would endorse the use of AI in education through high-scale Digital Public Goods along with nationwide managed AI-enabled initiatives to boost-up potentials across higher education institutions ***(UNESCO, 2022; Ministry of Education, Government of India, 2025)***. One can actually argue that digital infrastructure becomes a promoter for effective implementation by satisfying policy expectations and intentions to be materialized in practice and thus buffering the successful consolidation of AI innovations in open concept of higher education institutions.

Even so the implementation challenges and Inequality Whether the benefits of enhanced infrastructure and enabling policy environment will come to fruition has much to do with how institutions scale up implementation and how the theme of inclusion is inserted in the goals of higher education institutions. Like elsewhere in the world, Indian institutions should put in place not only policies for inclusion but also a 'new market' of interdisciplinary skills, creativity, ethics, critical reasoning and problematical skills and new modes of collaborating with intelligent agents ***(Muralidharan et al., 2024)*** building on new initiatives like Akashkvani coming on line. This should translate into long-term strategies for faculty development programs rather than isolated pilot projects, anchored on sound policy new policies and tailor-able for heterogeneous educational environments following the UNESCO guidelines ***(UNESCO, 2022; Sihag, 2024).***

The evolution of AI and education

The article presents a conceptual framework outlining the likely trajectory for how our educational systems will evolve with the increased adoption of artificial intelligence: Augmentation and efficiency with tools In the first stage, the main objective of AI was focused more on augment and extend existing tools rather than creating a restructuring in learning. Institutions primarily used artificial intelligence in the administration to be more efficient, reducing administrative activities and costs, and streamlining business operations. The initial role for artificial intelligence in this phase was as an auxiliary part of traditional pedagogy, and reforms continued to be gradual with class preparations carried out manually, with students also receiving basic help where learning is assisted through simple instructional and diagnostic programs.

Teachers would use artificial intelligence primarily to reduce the time spent in administrative tasks,

whereas in students there would be interaction with text-based AI and newer adaptive learning platforms, although there were numerous concerns regarding its security and privacy.

Many organizations showed resistance to the incorporation of artificial intelligence in operations and business processes, and this stage could be termed as an era of augmentation or where an artificial technology aids a conventional learning system. A period of systemic change brought about by the widespread introduction of generative artificial intelligence made schools' current system unsustainable at this innovative or transitional phase. Changes in instructional methodology were from a standardized, traditional form of knowledge acquisition into true processes of actual learning based on problem-based and student-centric learning strategies. Evaluation techniques that rely on the use of fixed outputs became irrelevant due to the intelligence and capability of new forms of artificial intelligence, prompting the establishment of multi-tier evaluations cantered around problem reasoning as well as in the learning itself through feedback.

Teachers found themselves reevaluating their role, moving from knowledge repositories to meta cognitive coaches who guide students in exploring the world as educators begin developing rules governing ethical academic behaviour when using artificial intelligence.

It is also noteworthy that at this stage the most accepted approach involves using artificial intelligence to assist educators in various ways to create an AI driven, adaptive and collaborative learning and assessment, to improve student outcomes at scale. A future educational environment would shift its focus towards an intelligence ecosystem. Artificial intelligence would form an inherent infrastructure for education and learning rather than merely another add on to existing technological infrastructures, with adaptive learning programs and intelligent agents playing important roles.

The emphasis shifts towards the development of not just technological intelligence but also distinctly human intelligence like Emotional Intelligence, Judgment and Decision making. Future Stage and Vision for Artificial intelligence in education 373.

Epistemic shifts and human agency Even with these implementation stages, the learning implications of generative AI are spreading to the concept of knowledge itself. If generative AI makes accessing and performing information and tasks a common practice for a broader range of students, learning is increasingly geared toward critically assessing, approving, and putting this knowledge to use ***(Lee & Moore, 2024).*** This in turn places responsibility for students to demonstrate a high degree of epistemic vigilance, such as examining algorithmic assumptions and identifying false positives resulting from AI hallucinations and generating correct conclusions in uncertainty.

This means protecting human agency in an AI environment will be about positioning artificial intelligence as an intelligence enhancer rather than substitute for human intelligence.

Data governance, bias, and cognitive equity The extensive adoption of AI technology also raises a variety of serious issues around artificial intelligence ethics, governance, and equity. The biases embedded in the automation technology within predictive and grading algorithms of AI

educational software could amplify existing inequalities based on socioeconomic status and cultural differences when appropriate protections have not been instituted ***(Farrelly & Baker, 2023).*** Given this,

it is imperative that each higher education institution develops strong policies for managing student data that support privacy, transparency and algorithmic accountability as well as ensure equitable access to advanced artificial intelligence tools to prevent such learning personalization systems from magnifying educational inequities***(Dai et al., 2023; Kohnke et al., 2023).*** Redefining institutional boundaries. The widespread implementation of advanced technology is also transforming how and where the institution's own traditional boundaries are situated.

With the rise in AI-powered learning systems, the prevalence of online learning platforms and in increased utilization of micro credentials and other skills and performance-based learning, acquiring knowledge is less about following pre-set curriculum designs and now centres on the competency.

Colleges and universities as a consequence will have the burden of learning ecosystems that support both lifelong learning and work-integrated capacities rather than becoming centres for only completing of degree programs. This requires creating flexible, modular curricula and awardable credentialing, alongside processes that can continually adapt with rapidly shifting job demands ***(Triyuth, 2025; George & Wooden, 2023)***. The conclusion of these events suggest the relevancy of the university will ultimately depends on their adaptability, not their ownership of knowledge.

More specifically, the rapid rise of generative artificial intelligence represents a structural turning point both for the global labour market and higher education itself ***(Reicho et al., 2026)***. Unlike, earlier technological waves of automation, which concentrated in and re-configured agricultural and manufacturing jobs, the new generation of intelligence, however is transforming the nature of jobs historically occupied by college-educated knowledge workers with routine cognitive tasks in such as legal drafting, writing research reports, and computer coding ***(Liu et al., 2026) .*** This is the new characteristic of this round of disruption.

It expands the context of jobs affected from manual trades to professional cognitive trades, leading institutions to look past the more narrowly focused issues of academic dishonesty to the more systemic problems of curricular design, how we assessment, graduate capabilities and preparedness for the future world of work ***(Neumann et al., 2026)***.

These impacts are being felt equally in reshaping the labour markets of today as technology progressively assumes routine and cognitive tasks, the redistribution of responsibilities throughout the career structure in such as law, finance, software development and marketing industries is undergoing profound change. Traditionally, graduates entering into one of these disciplines were expected to learn on the job or by carrying out the numerous mundane, procedural-oriented tasks required to work their way into senior level professional positions.

Generative intelligence thus far not only is significantly narrowing many entry-level roles, it has changed expectations for when graduates should come fully skilled and familiar with augmented AIworkflows that are needed to perform higher-order reasoning and work collaboratively with these emerging intelligences ***(Zhang & Tian, 2026)*** Therefore employability ultimately depends on being adaptable ,able to use the higher forms of intellectual, moral, and creativity capacities to do the jobs that other intelligences and cannot do***(Zhang & Tian, 2026)***. The economic influence of generative ai also revived debate concerning whether the long time existing college wage premium will decline to non existence or otherwise.

However there is no evidence supporting widespread elimination of work, which the consensus literature frames as an era characterized not so much by the elimination of human beings by intelligent machines as it is by the task and role substitution, along with occupational change as automated routine activities prove increasingly susceptible to being replaced ***(Ogunleye et al., 2024).***

Conversely, occupations that rely on uniquely human abilities and skill set in relation to strategic judgment, creative, complex problem solving and interpersonal interaction remain largely inviolate and secure due to their uniqueness. Overall, these findings indicate the real value and importance of higher education will continue to be located, as before, in training students to deploy uniquely human capabilities, not in transmitting what is becoming a increasingly automatable body of shared knowledge***(Lee & Moore, 2024; George & Wooden, 2023)***.

Changing Workforce demands and its role in higher education

Higher education institutions face an increased degree of institutional friction, struggling to adapt the speed of technological transformation ***(Juma & Patel, 2024)***. Universities have evolved through stable systems of governance, regulatory policies, and established policies not built to keep up with the rapidly oscillating cycles of Technological Change typical in this "Age of AI" ***(Ministry of Education, Government of India, 2025)***. This institutional inertia has led to the responses to generative AI typically vacillating between an outright ban and isolated policy adjustments - suited for the long-term educational needs . ***(EY-Parthenon & FICCI, 2025).*** this highlights institutional limitations and the necessity for structural rather than techno solutions, beginning to see educational programs adapt to generative AI by layering AI literacy from basic awareness to sophisticated use with domain knowledge ***(The Policy Edge, 2026).*** Technical expertise, universities need to educate their students in transversal abilities (critical thinking, creativity, emotional intelligence, ethics and self-leadership capabilities) as they are not being supplanted byAI.

Generative AI's omnipresence challenges the continued validation of traditional product assessments - home-made take-home assignments and routine analytical reports ***(Juma & Patel, 2024)***. Thus education shifts toward authentic assessment in which each of the students needs to interpret, verify and contextualize their interactions with generative artificial intelligence by filtering and contextualizing the AI's input in specific way to use outputs as building blocks to solve complex and ambiguity for open-ended problems ***(EY-Parthenon & FICCI, 2025).*** Oral exams, high-stakes project-based learning with interdisciplinary student collaborations, interactive simulations and reflection journals are common tools utilized for teaching and learning in and with AI ***(EY-Parthenon & FICCI, 2025)***. assessment no

longer seems a pursuit for students and instead begins with building higher order reasoning, critical judgment and responsible practice with artificial intelligence, competencies that are difficult to Automate ***(EY-Parthenon & FICCI, 2025)***.

The shift of work generated by AI's increasing viability has even reimagined the interface between universities and industry. The earliest steps of professional careers have changed based on artificial intelligence that evaluates candidates and identifies strong candidate profiles, internships alone do not fully help build the relevant skill set necessary between class and industry ***(Liu et al., 2026).*** Visionary universities now partner with industry to co-create ecosystems for experiential learning to reflect what actual professions look like ***(Liu et al., 2026)***. Professional mentoring in incubator-based programs, live industry projects and work-integrated learning programs can give an environment of ambiguity, learning from industry mentors who can help integrate class and the field.

(UNESCO, 2022) Students now enter workplaces with a different framework for success beyond basic professional mastery, where sustained interaction with the professional sphere defines employability.

The interactions transcend employ ability to boost institutional adaptability; universities provide safe harbor to students to experiment with high tech products like AI also developing professional networks ***(Liu et al., 2026)***, this process also creates opportunities for universities to break up their curriculum as dynamic & modular ecosystem rather than locked and stable programming ***(The Policy Edge, 2026)***. Collectively these actions bring together greater employability of students, while ensuring that Universities can dynamically iterate and stay ahead of the rapidly moving tech landscape.

Substantively, the disruptions to work triggered by generative AI have led us to an essential questioning of the purpose of higher education. And while employ ability and economic value remains a core component and expectation of both the individual and institutions, in a world where Artificial Intelligence can execute task oriented cognitive functions, it raises our ability to be distinguished by framing profound questions, developing ethical judgments and stewardship over societal values ***(Ministry of Education, Government of India, 2025);*** Perhaps the role for the University cannot be satisfied in this new landscape merely on training a competitive workforce nor educating toward the dissemination of knowledge alone. In teaching and innovating a framework that supports critical inquiry, ethics capability and responsible engagement with artificial intelligence will prepare a new generation to not only adapt to disruption, but to actively shape its course into the future.

Indian Context

In India, generative artificial intelligence, labor market shifts, and higher education collide uniquely due to a large youth population, a globally competitive IT industry, and a proactive national policy environment ***(UNESCO, 2022).*** These conditions challenge India's higher education system to reform in dual ways: it must manage the disruption of mass modernization under generative AI, but simultaneously prepare graduates to be relevant within a restructured labor market and ensure its own large-scale, equitable, and nationally-oriented institutional evolution.

India is a nation with millions of graduates in engineering, management, and commerce who have been channeled into entry-level roles in IT services, business process outsourcing, and

corporate support ***(The Policy Edge, 2026).*** Generative AI fundamentally depends framework, replacing much routine software development, content generation, and business administration analysis with automated tools ***(Reicho et al., 2026)***. This eliminates many traditional career pathways into such jobs while creating high demand for and the need for immediacy in a new class of roles where graduates need to demonstrate expertise in how to utilize such tools ***(Liu et al., 2026).*** This in turn creates a high-demand scenario where employers are willing to pay a premium for graduates with the ability to utilize such technologies ***(Hart, 2025)***.

In essence, India's core task shifts from producing graduates to retooling millions of graduates from tasks to sophisticated experts in AI systems, knowledge creation, information science, and the generation of innovative outputs based on them ***(The Policy Edge, 2026).*** Indian policy-makers are acutely aware of this situation, developing policies that have led to more thorough and wide-reaching application of AI within Indian higher education, transforming it through institutional reforms, multi-disciplinary learning, and more flexible course offerings for a nationwide push for AI and data science education ***(UNESCO,***

2022).

Other policy directions l focus on actual operational support beyond pronouncements, investing in the innovative use of, readiness for, and open-source implementation of AI, accompanied by extensive technological and research investments across Indian universities ***(Ministry of Education, Government of India, 2025).***National and government initiatives in this space are further reinforced by substantial investment in underlying digital ecosystems to make the incorporation of AI more facile in higher education institutions.

State-of-the-art undergraduate programs in artificial intelligence, machine learning, and big data analytics are complemented by institutions' investments in areas like dedicated Centers for AI in Education ***(Ministry of Education, Government of India, 2025).*** This government action is not only an expression of equal opportunity and national development objectives but, crucially, it also leverages technology as the means to achieve wide-ranging institutional reform at scale.

while these initiatives are widespread and represent a growing national commitment, actual penetration of artificial intelligence within the Indian higher education sector remains patchy ***(EY-Parthenon & FICCI, 2025)***. Leading research universities and engineering colleges are increasingly integrating generative AI in instruction and individual tutoring, whereas many second and third-tier universities, as well as the vast majority of their students, continue to be hampered by infrastructural disparities, inadequately prepared faculty, and restricted access to resources ***(EY-Parthenon & FICCI, 2025)***.

As a result, government ministries and other key bodies ***(The Policy Edge, 2026)*** have pushed for a broad curriculum reform across all disciplines and learning contexts beyond technical specializations, emphasizing modular course structures, micro-credentials in relevant areas, and lifelong, responsible AI learning. Reducing the country's widening digital, infrastructural, and

institutional divide is key to capitalizing on the demographic dividend that can come with the disruption of generative AI ***(Chakraborty Acharya, 2025)***. Enhanced national public-private partnerships, access to more sophisticated national computing infrastructure for AI applications, and structured training programs for teachers are among recognized needs to enable equitable utilization of these AI tools and services ***(The Policy Edge, 2026)***. With the flexibility offered by NEP 2020 in terms of educational reforms, ongoing strategic public-private partnerships, and responsible integration of humans into workflows that utilize AI, India's higher education system stands ready to cultivate the critical thinking, adaptability, and creativity essential for graduates to excel in the modern economy and establish India as a global leader in AI-related knowledge, research, and innovation ***(Hart, 2025; UNESCO, 2022).***

Conclusion

Artificial intelligence, undoubtedly, is a potent paradigmatic innovation changing all aspects of higher education - knowledge creation, pedagogy, curriculum development and learning, assessment, and structure of higher education institutions. It is evident from the reviewed literature that generative AI is not just a phase of technology implementation, it is a fundamental alteration in the structure of the entire higher education system, From knowledge acquisition based, education is evolving into a structure based on conceptual learning, critical thinking, ethical inquiry, creativity, trans-disciplinary problem solving,

and life-long learning as the transactional cognitive processes gets automated. Therefore, in the age of AI, education is of essence for nurturing distinctive human qualities which act as an augment to the AI-led innovation of work-process.

The review suggests that in order to successfully harness AI in higher education it's imperative that all tiers within the Higher Education. Are reformed. Beside new technologies, institutions need to develop new curriculums and assessment models, reinforce their institutional architecture, and reinvent the roles of teachers from educators to pedagogical and metacognitive trainers cum mentors who will also engage in enabling fruitful Human -A.I collaborations.

Such evolution shows that, at the centre stage will not be just the imparting of information but the cultivation of explicitly human virtues who help enhance the capabilities of AI which in turn helps H.E.

Institutions improve teaching and learning outcomes and increase administrative capacities, to help students thrive as researchers and professionals in the AI era while simultaneously sustaining their ethical agency, transparency, integrity and critical inquiry.

In India, these developments take extra relevance due to country's youthful demographics, ever expanding digital infrastructure and visionary policy pronouncements such as the National Education Policy 2020 and the India AI Mission focusing on integration of AI into pedagogy, training, teaching practices, the administration and teaching of higher education, besides enhancing their s, The established literatures further acknowledge that until obstacles relating

to digital infrastructure, institutional preparedness, instructor expertise, algorithm bias, data accountability, and regional differences in availability, aren't systematically addressed, any positive contributions from AI will remain restricted to the privileged portions of the Indian higher education sector. The fusion between higher education, coupled with rapid evolve of labour market demands necessitate more continuous change and the fostering of skills of lifelong learning. It requires institutions to equip their graduates with abilities to navigate across diverse contexts with the help of essential skills such as problem-solving skills, communication, emotional intelligence, ethical considerations, collaborative learning abilities, and technical skills.

Thus, it may conclude that Higher Education. Institutions are increasingly being viewed as evolving structures based on adaptive learning ecosystems where a flexible curriculum would feature to suit the needs of the continuously changing labour requirements instead of a fixed structure.

Finally, this paper concludes that the enduring significance of artificial intelligence in higher education would rely not on the capacity or the advancement of technology, but more, on how well higher education institutions will be able to reconcile innovation and equity, ethics, academic honesty, transparency and human agency. If taken up via the broad ethical frames offered by responsible. Artificial intelligence is poised not only to coexist but also empower its humanistic function, enabling universities to become more efficient tools of knowledge production and sustainable human progress in the AI era.

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