



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347 - 6435 (Online)) Volume 15, Issue 6, June 2026

AI-Driven Creativity in Education: A Conceptual Study within the Framework of NEP 2020

Priyabrat Pradhan¹, Subhalaxmi Mohanty², Rabindra Singh³

¹Research Scholar, Department of Education, Central University of Odisha, Koraput

²Independent Researcher, Odisha

³Research Scholar, Department of Education, Central University of Odisha, Koraput

Abstract— Artificial intelligence (AI) is consistently used by mankind in regular life applications, including language translation tools, virtual assistants, and recommendation systems, which increase technology's interaction and response to human requirements. The article explores how AI nurture creativity in daily educational practice and teaching, led by the goals of India's National Education Policy (NEP) 2020. To promote collaboration between AI-mediated systems and learners, the study emphasises how AI tools enhance imaginary thinking, brainstorming, and creative metacognition. However, it also highlights important issues, like over-dependence on AI, ethical questions about authorship and originality, unequal access, and a downward connection of humans in the classroom. The findings highlight how crucial it is to integrate AI in a human-centred educational setting in a balanced way so that it enhances creative thinking rather than replaces human creativity and educational duties. AI as a catalyst for creativity in education, emphasis on innovation, holistic development and inclusion by exploring AI's potential and retracing the importance of humans in the creative process.

Keywords—Artificial intelligence (AI), Creativity, Education, Educational Practice, NEP 2020

I. INTRODUCTION

The swift advancement of Artificial Intelligence (AI) has revolutionised numerous industries worldwide, including education. AI's potential to revolutionise teaching, learning, and curriculum has been increasingly recognised. Artificial Intelligence (AI) has altered different industries around the globe, including education, in a very short amount of time. (Chiu et al., 2022). Technology is driving a phase of change in the Indian educational sector, especially in the wake of the COVID-19 pandemic's disruptions (Shenoy et al., 2020). The National Education Policy 2020 in India puts a major focus on inculcating AI and machine learning into the curriculum to develop a more flexible, inclusive, and future-ready educational system.

The use of AI tools has the potential to improve learning through personalized learning, encourage creativity by encouraging divergent thinking, and forecast student needs to lower school dropout rates, according to the NITI Aayog report "National Strategy for Artificial Intelligence" (2018).

The ability of an individual to produce unique and worthwhile ideas, concepts, or solutions through a mental process that incorporates imagination, originality, and thinking beyond traditional limitations is known as creative thinking (Kaufman, 2016). A commonly recognised definition of creativity is a collection of concepts deemed to have unique significance, utility, or worth to different stakeholders (Habib et al., 2024; Guilford, 1950). where Artificial Intelligence (AI) is the study of designing machines that can think and act intelligently, much like humans. In its hidden core principle, AI aims to understand how mankind intelligence works and replicate it through smart computer programs. Rather than being confined to sole field, AI implements its use across a huge range of industries and everyday life, helping to simplify tasks and improve efficiency (Fathima A., 2022). It highlights a major technological breakthrough that increasingly supports our day-to-day social and economic activities. In essence, AI integrates the creativity of science with technology to build systems that can learn, and solve the problems. Moreover, the methods, techniques, and strategies by educators employ to encourage student growth and learning in a variety of learning conditions are referred to as educational practices (Hammond & Bransford., 2005). It encompasses curriculum design, instructional approaches, classroom management, assessment methods, and the integration of technology and pedagogy to achieve educational goals.

II. SIGNIFICANCE OF STUDY

In the past, chalk-and-talk teaching methods in classrooms, with the instructor serving as the predominant knowledge source and the pupils as the passive



International Journal of Recent Development in Engineering and Technology

Website: www.ijrdet.com (ISSN 2347 - 6435 (Online)) Volume 15, Issue 6, June 2026

participants. Blackboards, textbooks, and in-person interactions were the main sources of learning. However, as conditions change, Learning became more interactive with the advent of projectors, smart boards, and multimedia materials. Teachers and students were able to move beyond textbooks because to the availability of online resources. Assignment submission, online tests, and resource sharing were made possible by platforms such as Moodle, Google Classroom, and Blackboard.

In the 21st century, Artificial Intelligence (AI) has the power to solve many major problems in education, improve teaching methods, and speed up progress toward achieving Sustainable Development Goal 4, which emphasises on giving good quality education for everyone (UNESCO, 2025). However, the fast growth of AI technology also brings risks and challenges that have advanced faster than the policies and regulations needed to address them. UNESCO is dedicated to helping countries use AI effectively to achieve the goals of the Education 2030 Agenda while focusing on the development of human potential and the advancement of social justice, sustainability, and human dignity. It ensures that its usage in education is fair, inclusive, equitable, and accessible to everyone. The 2025 International Day of Education, with the theme "AI and education: Preserving human agency in a world of automation," emphasises how education helps people and communities understand and impact technological innovation. The distinction between human purpose and machine-driven action frequently becomes increasingly hazy as computer and AI-driven systems advance in sophistication. In an era of fast technological advancement, this poses important challenges about how to maintain, redefine, and, ideally, elevate human agency (UNESCO, 2025). This study describes how the usability of Artificial Intelligence enhances students' creative thinking skills through new teaching practices at the school level. By addressing these dimensions, this thematic study seeks to contribute meaningful inputs into the potential use of AI to transform the education system.

III. LITERATURE REVIEW

To understand the existing body of knowledge, the study followed a qualitative review approach, which was based upon the following themes

3.1 Literature related to AI and Creativity

AI can be a tool to improve creativity by providing unique ideas and inspiration for creative tasks (Nicols et al., 2024), and AI has the capability to improve education,

make work easier, and make information accessible to more people (Chauhan and Soni., 2024) and it can help with idea formation and text generation in creative writing. AI significantly aids students' creative writing, particularly elaboration, varying in its effectiveness depending on the student's writing skill level and their approach to using the AI tool. (Woo and Guo., 2023). Considering its negative sides Generative AI tools may have limitations including the generation of inaccurate information and biases within its data in language generation and lack of creativity since They produce answers by looking for patterns in the recorded data (Baidoo and Ansh., 2023) and there is a chance that AI will be used excessively, which may negatively impact students' self-regulated learning skills and reduce exploration of unique ideas. (Habib et al., 2024).

A key area of focus is AI's influence on creativity and writing instruction. AI-powered writing assistants (AWAs), supported by Natural Language Processing (NLP), help students refine their writing by addressing grammar, syntax, and style while allowing them to focus on creative thinking and argumentation (Salman et al., 2024). These AI tools gives a real-time feedback, suggestions, and rephrasing sentences, helping the Cognitive Process Theory of Writing, which emphasizes planning, generating, and revising ideas. Many literature shows that tools such as Grammarly improve mechanical accuracy and enhance creativity by encouraging exploration of different writing styles. So, Human and AI collaboration have the potential to strengthen creative output, with AI offering idea generation, new stylistic perspectives, and inspiration (Dawani, 2023).

AI and Educational Practices

Exploring the practical applications of AI in educational environments, a research study discusses the integration of Artificial Intelligence, machine learning and robotics in the Indian education system (Kumar et al., 2022). Where AI is being explored in higher education for a variety of applications, including creative problem-solving and Individualized instruction that explores the capacity of AI-driven curriculum development to transform education by giving engaging and creative learning experiences (Ejjami., 2024), and there is also research on the utility of AI to improve creativity in university students (Chauhan and Soni., 2024) highlighting its modern impact on higher education in India.

Comparison to other areas of adoption of AI in education has been very slow, with new research largely focussed in STEM disciplines. This highlights the need for



International Journal of Recent Development in Engineering and Technology

Website: www.ijrdet.com (ISSN 2347 - 6435 (Online)) Volume 15, Issue 6, June 2026

interdisciplinary exploration and stronger pedagogical frameworks for AI integration (Butrimė & Zuzevičiūtė, 2024). Many research study argue that students and educators must go beyond basic awareness of AI to develop practical competencies and enhanced skill, including prompt engineering, the ability to design creative inputs for AI systems. Institutions are therefore encouraged to create comprehensive AI strategies with curricular modification, IT coordination, digital resource development, and faculty training (Hutson et al., 2022). Instead of removing AI, universities are suggested to guide students toward responsible use of AI, fostering critical reflection, ethical engagement, and creativity through modern educational practices.

3.2 Higher education-related studies

The inclusion of Artificial Intelligence (AI) in higher education has produced much opportunity over its capacity of changing pedagogy and administrative functions. Artificial Intelligence describes computational systems proficient in human-like functions, including learning, adaptation, synthesis, and self-correction, alongside the capacity to analyze data. (Popenici & Kerr, 2017). While early applications of AI were visible in learning management systems, transcription, evaluation, and plagiarism detection software, the launch of advanced models such as ChatGPT in 2022 revived direction toward AI's educational role (Butrimė & Zuzevičiūtė, 2024; Hutson et al., 2022).

AI's modern potential is widely recognised, with rapid growth in the educational AI market and positive outcomes including enhanced teaching and learning, wider access to technology, higher retention capacity, and reduced costs (Hutson et al., 2022). Future applications are expected to feature personalized AI mentors, mass-customization of content according to learners' needs, and education accessibility anywhere. Universities are also adopting AI tools to streamline administrative tasks such as admissions, curriculum planning, class size estimation, and resource distribution, enabling educators to concentrate on innovative and student-centered endeavors (Butrimė & Zuzevičiūtė, 2024). Beyond administration, AI is enhancing research through faster data analysis, pattern identification in complex datasets, and automation of literature review processes (Hutson et al., 2022). Tools like ChatGPT are increasingly valued for information processing, data interpretation, generation of new idea, drafting and paraphrasing, and citation support across research fields (Ocen et al., 2025).

3.3 Secondary education-related studies

Considering Secondary Education few research explores the impact of AI on secondary school students' creativity through AI-supported tools for writing and learning (Woo and Guo., 2023)), result found that AI significantly aids students' creative writing, particularly elaboration, varying in its effectiveness depending on the student's writing skill level and their approach to using the AI tool, simultaneously AI and VR technologies can be implemented to secondary school to improve creativity in art education describing significant improvements in concentration, creativity, and reduced test anxiety (Rong et al., 2022). Moreover, the research findings of a study conducted by Rathore et al. 2023 assessed the expected positive outcomes and barriers of AI integration and investigated its prospects in elementary education curricula, which showed a positive benefit of AI.

However, we can use Artificial Intelligence to generate adjustable learning environments that support emotional well-being and academic performance, exploring how students perceive and engage with AI is essential for promoting their holistic development and well-being. AI-integrated education should aim to create a supportive learning environment that fosters emotional resilience (Lin and Chen., 2024). While considering the psychological aspect of AI research indicates a weak positive association between attitudes toward AI and creativity, whereas certain research have identified a non-significant effect of AI attitudes (Chauhan and Soni., 2024).

IV. METHODOLOGY

This thematic study was conducted to explore the secondary data and synthesise existing research studies related to Artificial Intelligence (AI) and Creativity in Education, with special focus on Current Educational practice in our education system, aligning with NEP 2020 goals, with the aim of identifying emerging themes and answering the following central research question of the study.

RQ1: How does AI integration in higher education align with and advance NEP 2020's goals for developing creative, critical, and multidisciplinary competencies?

RQ2: What are the impacts of AI on students' creative thinking and innovative capacities?

RQ3: What systemic challenges and ethical considerations are in effective AI adoption for creativity enhancement in Indian higher education?



International Journal of Recent Development in Engineering and Technology

Website: www.ijrdet.com (ISSN 2347 - 6435 (Online) Volume 15, Issue 6, June 2026)

V. FINDINGS OF THE STUDY

This study followed a qualitative thematic review approach, which involves systematically collecting, reviewing, and analysing the existing literature to identify recurring themes, patterns, and conclusions. Relevant research articles were gathered from academic databases including Google Scholar, ERIC, Scopus, and ResearchGate. The search was conducted using combinations of keywords such as artificial intelligence in education, student creativity, AI and learning outcomes, artificial intelligence in higher education, and NEP 2020 and technology integration. To maintain relevance and quality, only English-language studies that addressed the relationship between AI and education or creativity and that complemented the goals of NEP 2020 or higher education were accepted for review and those articles that had nothing to do with education, lacked a clear methodology, or did not directly address the research question were rejected then the whole findings of the study are described as per the research questions.

RQ 01: How does AI integration in higher education align with and advance NEP 2020's goals for developing creative, critical, and multidisciplinary competencies?

The ability of computer systems to carry out operations like learning, reasoning, problem-solving, and decision-making that often require human intelligence is known as artificial intelligence (AI). AI, in contrast to conventional computer programs, is made to learn and get better over time, frequently imitating parts of human thought processes (Russell & Norvig, 2021). In the context of education, AI holds the potential to transform learning by providing personalized instruction, automating assessments, and offering intelligent tutoring support (ITS) (Holmes et al., 2019). From many research studies we founded that John McCarthy first used the term artificial intelligence (AI) in 1956. He identified AI as the scope of science and engineering related with building intelligent machines and sophisticated computer programs. Although it is related to the more general objective of utilising computers to comprehend human intelligence. Following World War II, several individuals independently began explore the development of intelligent systems. Out of all English mathematician Alan Turing, who delivered a lecture on the topic "Intelligent Machine" in 1947 (McCarthy., 2007). He was likely the first to suggest that the most effective approach to AI was through programming computers rather than constructing physical machines. By the late 1950s, AI

had attracted numerous researchers, most of whom focused their efforts on computer programming as the primary method of advancement (McCarthy., 2007). Thus, AI treated as a technological tool with partner in enhancing human capacities for learning and growth.

Technological interventions are helping educators shift from traditional teacher-centred approaches to more learner-centric and adaptive models of education, preparing students for a future driven by innovation and digital fluency where, Artificial Intelligence (AI) is increasingly influencing educational practices in India by enabling personalised learning, intelligent tutoring systems, automated assessments, and smart campus management. In alignment with the National Education Policy 2020, AI is being integrated into curriculum design, teaching methodologies, and administrative processes to improve accessibility of education (Kumar and Rose., 2022).

NEP 2020's Vision for AI in Education

Currently, with the National Education Policy 2020, India's educational system is undergoing an extensive change for the first time in over three decades. A key element of this policy is the clear recognition and incorporation of Artificial Intelligence (AI) and digital technologies into the educational structure (Prajapati., 2025). The NEP 2020 aims to create a more forward-thinking, inclusive, and fair educational system that shifts from memorization to holistic development, critical thinking, creativity, conceptual understanding, ethical values, social responsibility, and digital literacy. AI is seen as a powerful catalyst for achieving these core objectives, including equity, quality, affordability, and accountability in education. Technology is positioned as an integral component of the educational ecosystem.

Technical Education: The NEP 2020 emphasises developing a future generation that is tech-literate in an increasingly automated and AI-driven world. It aims to equip students with technological abilities such as digital literacy, coding, and computational and critical thinking from a very young age. The NEP documents takes AI as crucial for preparing students for the AI-driven economy and future job opportunities' highlighting the integration of modern skills, including machine learning, coding, and computational thinking, into higher education curriculum. It supports interdisciplinary programs, advanced research in machine learning, and initiatives like the National Educational Alliance for Technology (NEAT), which deliver AI-enabled personalized learning tools for students and educators of higher education.

Language Learning: The National Education Policy (NEP) 2020's objectives for enhancing higher education

(HE) are closely aligned with the application of artificial intelligence (AI) in language acquisition. NEP 2020 emphasises multilingualism, inclusivity, and equity, encouraging education in regional languages and promoting linguistic diversity across country. AI-powered tools, such as ANUVADINI and UDAAN, helps to translate information and content delivery in Indian languages, exploring the diversity of rural and disadvantaged students group to access higher education in their local language (Mehta & Gupta, 2022). Institutions like Indira Gandhi National Open University (IGNOU) have already adopted AI-based translation to launch MBA programs in Hindi and Odia, reflecting NEP's vision of inclusion and grater accessibility of content in regional language. In language education, AI platforms provide adaptive and individualized learning experiences for students, offering real-time feedback, conversational practice between learners, and pronunciation support. This aligns with NEP's call to move beyond rote learning toward learner-centered, experiential, and inquiry-driven pedagogy connecting curriculum to real world.

RQ 2: What are the impacts of AI on students' creative thinking and innovative capacities?

AI and Creativity

Most of the research studies describe Artificial Intelligence (AI) that it has a versatile impact on the creativity of students, presenting both significant opportunities for enhancement and exploring notable challenges faced by the learner. The following positive impacts were discussed below.

New Idea Stimulation: Through the inculcation of creative teaching methods in classroom, AI apps have the ability to introduce pupils to new concepts and improve their problem-solving abilities. This concludes that providing personalised challenges and immediate feedback inspires creative solutions made by the learner inside classrooms (Lin and Chen., 2024). For example, AI-powered software allows students to test ideas, encouraging iterative learning and creative thinking. AI can also generate alternative solutions to different perspectives and diverse points of view, promoting openness and curiosity during creative problem-solving processes (Kangiwa et al., 2024). Studies indicate that AI can significantly increase students' creativity across various dimensions of divergent thinking, including fluency, elaboration, flexibility, and originality (Habib et al., 2024).

Develop Higher-Order Thinking: With the use of AI and other digital tools in routine tasks like assignment writing,

project reporting, AI can help students focus on more intricate problem-solving and creative endeavours by freeing up their time and mental energy. This fosters an environment where creativity can thrive to develop higher-order thinking (Kumar et al., 2022; Habib et al., 2024)

Incubation and Co-Creation: Many AI technologies facilitate collaborative learning and co-creation of new thoughts between humans and machines, where novel thought arises from shared ideas and actions (Nicols et al., 2024). AI-powered brainstorming tools and online collaborative platforms can streamline communication and project management, enabling students to work together more effectively and generate creative ideas collectively (Kangiwa et al., 2024). Tool like Chatbots could serve as non-judgmental brainstorming partners, leading to more ideas and diversity in thought (Habib et al., 2024). The concept of "co-creativity," where human and AI creativity blend to incubate more new knowledge, is seen as a focal point for future research. (Dawani., 2023).

Inspires Interest and Exploration: AI and robotics tools like ChatGPT and Quizlet inspire student interest and increase their creativity, whereby these AI-powered systems adjust to the learning preferences and skills of students, producing focused results that boost their curiosity and motivation (Ejjami., 2024). Similar to this, AI's capacity to select and suggest appropriate resources from enormous databases of instructional materials also increases students' exposure to a variety of knowledge and inspiration sources, fostering their natural curiosity and drive (Lin and Chen., 2024).

Self-assessment: AI tools can greatly facilitate creative metacognition by analysing students' work through self-assessment and real-time feedback. This instant support in creative tasks allows students to reflect on their creative processes and observe the gradual enrichment of their creative products (Nicols et al., 2024). It has been observed that personalised feedback and adaptive support from AI potentially boost students' confidence and their sense of achievement and ownership over their learning process.

Emerging Educational Practice and Pedagogical Transformation in the Era of AI

Personalised learning: Following NEP 2020's vision of promoting student-centric personalised learning and flexible learning, AI-powered learning systems tailor educational content based on individual learners' preferences, interests and needs. By manipulating data mining, real-time analytics, and intelligent educational technologies, higher education institutions can offer more inclusive and effective learning experiences.



International Journal of Recent Development in Engineering and Technology

Website: www.ijrdet.com (ISSN 2347 - 6435 (Online)) Volume 15, Issue 6, June 2026

Some widely recognised AI-powered personalised learning tools that are used in educational settings.

Knewton Alta: A widely used adaptive learning platform in the field of mathematics and sciences that personalises content delivery depending on student achievements and performance by giving immediate feedback, concept mastery tracking, and individualised content pacing, commonly used in higher education.

DreamBox Learning: An AI tool that customises lessons by analysing student behaviour, errors, and strategies for an intelligent math program for K–8 that adapts in real-time to student responses as a remedial education.

Squirrel AI: A China-based, internationally recognised learning platform that uses AI to offer one-on-one tutoring tailored to students' cognitive and emotional needs.

DIKSHA (Digital Infrastructure for Knowledge Sharing): An initiative by the Government of India under NEP 2020 to provide e-content for teachers and students, with ongoing integration of AI tools, it aims to offer personalised recommendations, adaptive learning paths, and progress tracking. It was widely used in schools across Indian states, especially during COVID-19 and in blended learning models.

CENTA's MyCENTA: A professional learning platform for teachers that uses AI to personalise courses and track learning outcomes. That tool indirectly supports personalised student learning by enhancing teacher development.

Intelligent tutoring systems (ITS): Similar to a human tutor, Intelligent Tutoring systems are based on computers learning environments that give students rapid, tailored feedback. These systems explore possibility of Artificial Intelligence (AI) to study students' responses, track learning progress, and adapt require content depending on individual interest and performance. In NEP 2020 context ITS performs a major role in promoting inclusive and adaptive learning. It support students by offering customised learning paths, identifying problem, and suggesting its solutions. ITS also operate across various subjects, particularly in STEM fields, and is valuable in bridging gaps in teacher availability in underdeveloped remote areas.

AI-assisted teaching and Automated assessments: In the era of modernisation NEP 2020 emphasises the need for continuous and comprehensive evaluation (CCE) through regular assessment. AI technologies such as image recognition, predictive analytics, and computer vision significantly boost the assessment process by providing accurate results, timely feedback, and unbiased evaluations of student performance, which supports teachers in

formative and summative assessments and promotes automated assessment.

Smart campus management: Traditionally campus management like from effective planning to successful implementation largely depends upon the management and administration body of campus. In this digital era to facilitate efficient governance and administration, AI contributes significantly to building smart campuses, as envisioned by NEP 2020. Face recognition technology, sound detection, and sensor-based technologies like biometric attendance systems assist in automating campus management, ensuring safety, monitoring attendance, and improving overall operational efficiency in higher education institutions across country.

Pedagogical Transformation: In Indian context the targets of NEP 2020 is to prioritise innovation, digital integration, and capacity building in teacher education, which were strongly aligned with the application of artificial intelligence (AI) in teacher education and pedagogy. AI supports teacher educators by providing personalized learning platforms, adaptive feedback systems, and intelligent classroom management tools that help future teacher educators to design learner-centric pedagogy (Meena & Gupta, 2023). It provides insights into student performance, reinforcing reflective practice and continuous professional development (CPD). Moreover, AI-based simulations and virtual classrooms enhance experiential learning for trainee teachers, equipping them with modern teaching skills and competencies (Sharma & Singh, 2022). In India, platforms such as Digital Infrastructure for Knowledge sharing (DIKSHA) merge AI-driven tools for teacher professional development, offering digitalized content and training modules that help teachers adapt new pedagogical pattern required in diverse classroom. Such initiatives resemble with the National Education Policy (NEP) 2020's vision of crating techno friendly educators who can associate technology productively to enhance learning outcomes and more inclusion in higher education (NEP, 2020; Sharma & Singh, 2022; Meena & Gupta, 2023).

Medical Education: Sustainable development goals 3 strongly recommends for Ensuring healthy lifestyle through universal healthcare access and improving medical facility (United Nations, 2015). Studies suggest Artificial Intelligence (AI), particularly through digital anatomy tools, simulation-based clinical training and AI integration enhance healthcare education, aligning directly with the National Education Policy 2020's emphasis on technology-enhanced and skill-oriented higher education (Patil & Deshmukh, 2022). Similarly, tool like Practo and AI-based



International Journal of Recent Development in Engineering and Technology

Website: www.ijrdet.com (ISSN 2347 - 6435 (Online)) Volume 15, Issue 6, June 2026

diagnostic simulators are increasingly used in medical training institutions to close the knowledge gap between clinical theory and its application (Sharma & Kapoor, 2023). With addition of these AI-driven labs and virtual learning modules into medical programs now many medical colleges in the country growing rapidly by following NEP's vision of professional education that balances knowledge, practical experience, and innovation.

RQ 3: What systemic challenges and ethical considerations are in effective AI adoption for creativity enhancement in Indian higher education?

The inculcation of Artificial Intelligence into educational practice brings with it a ample of opportunities, Despite these opportunities, challenges and barriers remain consistent regarding ethical implications, data privacy, and algorithmic bias. Secondary source indicates that higher education educators are highly aware about the ethical use of AI, as many models are not specifically developed with educational contexts or student privacy in mind (Hutson et al., 2022; Ocen et al., 2025). Academic integrity is another critical issue, with risks of plagiarism, data fabrication, and students heavily rely on AI tools, which may undermine their analytical thought process and creativity (Ocen et al., 2025). Studies further argue that AI cannot replace human intelligence, contextual judgment, and moral reasoning, pointing to the framing problem, where AI systems excel in specific tasks but struggle with imaginative and value-driven thinking (Popenici & Kerr, 2017). Ultimately, AI can increase learning and research, but higher education must remain committed to nurturing human creativity, critical thinking, and values of humanism rather than becoming entirely technology-driven (Popenici & Kerr, 2017). For AI to truly enhance learning, policymakers, educators, and institutions must carefully examine these concerns to ensure that technology remains human-centred and supportive of meaningful education.

Ethical and Safety Concerns

Data protection and privacy rank among the most important concerns in the implementation of AI. AI systems frequently depend on gathering vast amounts of student data, including private and academic data. There is a chance of abuse, data breaches, or exploitation in the absence of strong legislation and defined ethical frameworks (Younas et al., 2023). Prioritising informed consent and transparent reporting on gathering data, retention, and use is essential. Algorithmic presumptions present another difficulty. AI models inherit the biases

found in pre-existing datasets because they are trained on them (Tkhayneh et al., 2023). This becomes especially problematic when algorithms designed in developed nations are applied in the unique social and cultural contexts of developing countries, where they may reinforce inequalities rather than reduce them.

Impact on Human Roles and Relationships

AI has also triggered anxiety regarding its impact on teachers and students. A common concern is floating across sector is job displacement, as auto generation of ideas increasingly takes over administrative and instructional tasks. Secondary sources suggest AI is unlikely to replace teachers entirely, it has potential reshape the exact roles from being direct knowledge providers to facilitators of learning (Jain & Jain, 2019). This transformation requires educators to acquire new technological teaching skills sustain their place in the classroom. The explosion of AI also induces fears of a loss of human interaction. Education has traditionally depended on mutual relationships, mentorship, and dialogue teaching methods. Overreliance on AI for teaching or assessment may lead to human isolation, due to missing out on face-to-face interaction and collaborative learning (Tkhayneh et al., 2023). Moreover, students themselves express concerns that solving problematic tasks through AI might weaken their autonomy, creativity, and critical thinking. More reluctance on machines, may affect self-regulation and problem-solving abilities that are useful in higher education and beyond.

Technical and Implementation Challenges

In the context of technological implementation, some practical barriers also hinder AI adoption. The cost of implementation of AI is too high, for institutions in developing countries like India, where infrastructure remains weak, and resources are scarce which strongly affect AI implementation. Beyond these financial challenges, AI tools are not free from programming and processing errors, that may lead to doubts about the accuracy and reliability of auto generated content. Adding to these challenges another barrier is the lack of standardisation. Because there is currently no universally accepted framework for integrating AI into diverse learning environments is available that makes it difficult to measure learning outcomes and assess effectiveness (Ezekiel and Akinyemi, 2022). Some AI tools, like essay-grading software, are still in early stages of development and lack the standardise format needed for large-scale deployment.



International Journal of Recent Development in Engineering and Technology

Website: www.ijrdet.com (ISSN 2347 - 6435 (Online)) Volume 15, Issue 6, June 2026

Pedagogical and Curricular Challenges

From a pedagogical standpoint, AI in regular classrooms demands the development of new technical skills and modern pedagogical literacies, for smooth use of AI, students and teachers need to understand how to analyze its results, considering its ethical consequences and employ creativity of humans to enhance mechanical insights. There is also the challenge of curriculum development. Integrating AI ethics into existing syllabi, especially in professional fields like medicine, nursing, and law, is complex and often slow in integration (Bond et al., 2024). To justify that AI enhances skills rather than distracts from educational quality and ideals, curricula must change with necessary adaptation with a broader goal of education that always aims to develop innovative, creative, and imaginative abilities that are not applicable to algorithms.

Equity and Access Concerns

In developing countries, the introduction of AI at grassroot level creates the concern for unequal access to technology that could lead to educational disparities, leaving students from underprivileged backgrounds further behind. Moreover, the high cost of AI tools may make higher education less affordable, potentially leading to reduced enrolment and widening gaps in equity and inclusion in terms of technical accessibility.

Student Perceptions and Readiness

In these contemporary times students themselves hold diverse perceptions regarding AI and often conflicting views about AI. Many students have questions on the accuracy of information produced by AI and wonder if using these tools amounts to cheating. On contrast to this some students believe using AI platforms makes them feel guilty, curious, or even afraid. Despite this confusion, most students acknowledge the convenience of AI but still express a strong preference for human supervision over fully automated systems as they value the unique expertise and empathy that teachers bring onto table, AI cannot replicate it.

VI. CONCLUSION

The whole study concluded that AI holds tremendous promise for enhancing creativity in education across all level, but its integration must be carefully managed for better learning outcomes. In the context of India's National Education Policy (NEP) 2020, which emphasises innovation, critical thinking, and holistic development, AI will serve as a major contributor to achieve of these goals.

A careful application, AI tools can empower both students and educators by enriching creativity, personalising learning experiences, and supporting equitable and accessibility to quality education. By thinking in a forward way that lies in a human-centric integration of AI, students and teachers usually show interest towards adoption of AI, successful implementation also requires strong AI based training and capacity building for educators. That will develop AI literacy and enable teachers to use these tools effectively, complementing traditional teaching. AI should be positioned as a virtual force that enhances human skills, Educators can rely on AI to complete repetitive tasks such as grading, personalization of content, and predictive analytics, freeing up valuable time to emphasis nurturing creativity, analytical perceptions, and social-emotional learning. Importantly, the literature study says human role remains irreplaceable in higher order thinking tasks such as problem framing, idea evaluation, and ethical judgment.

Moreover, realising this potentiality of AI, which depends on ensuring ethical safeguards, equitable access, modern teacher training, and a continuous focus on the human dimension of education. At last we can conclude that AI should be seen as a catalyst that increases opportunities for students and teachers to think creatively, take risks, and interact more deeply with information rather than as a substitute for human innovative thinking. Preserving this equilibrium, artificial intelligence (AI) can significantly contribute to the development of an technology rich educational ecosystem that is inclusive, and creatively empowering, in line with the goals of NEP 2020.

References

- [1] Ali, S., Payne, B. H., Williams, R., Park, H. W., & Breazeal, C. (2019). Constructionism, ethics, and creativity: Developing primary and middle school artificial intelligence education. In International workshop on education in artificial intelligence k-12 (eduai'19) (Vol. 2, pp. 1-4). mit media lab Palo Alto, California.
- [2] Al-Tkhayneh, K. M., Alghazo, E. M., & Tahat, D. (2023). The advantages and disadvantages of using artificial intelligence in education. *Journal of Educational and Social Research*, 13(4), 1-13. <https://doi.org/10.36941/jesr-2023-0094>
- [3] Baidoo-anu, D., & Owusu Ansah, L. (2023). Education in the Era of Generative Artificial Intelligence (AI): Understanding the Potential Benefits of ChatGPT in Promoting Teaching and Learning. *Journal of AI*, 7(1), 52-62. <https://doi.org/10.61969/jai.1337500>
- [4] Bond, M., Khosravi, H., De Laat, M., Bergdahl, N., Negrea, V., Oxley, E., Pham, P., Chong, S. W., & Siemens, G. (2024). A meta systematic review of artificial intelligence in higher education: A call for increased ethics, collaboration, and rigour. *International*



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347 - 6435 (Online) Volume 15, Issue 6, June 2026)

- Journal of Educational Technology in Higher Education, 21(4), 1-41.
<https://doi.org/10.1186/s41239-023-00436-z>
- [5] Butrimé, E., & Zuzevičiūtė, V. (2025). Creativity in contemporary higher education in the context of the artificial intelligence expansion. *Creativity Studies*, 18(1), 185–196.,
<https://doi.org/10.3846/cs.2025.20230>
- [6] Chauhan, S., & Soni, S. (2024). Relationship between Artificial Intelligence and Attitude along with Creativity and Self Esteem among Students. *International Journal of Interdisciplinary Approaches in Psychology*, 2(5), 1225-1251.
<https://psychopediajournals.com/index.php/ijiap/article/view/374>.
- [7] Ejjami, R. (2024). The future of learning: AI-based curriculum development. *International Journal For Multidisciplinary Research*, 6(4).
<https://jngr5.com/public/blog/The%20Future%20of%20Learning.pdf>
- [8] Ezekiel, O. B., & Akinyemi, A. L. (2022). Utilisation of artificial intelligence in education: The perception of University of Ibadan lecturers. *Journal of Global Research in Education and Social Science*, 16(5), 32-40.
<https://doi.org/10.56557/JOGRESS/2022/v16i58053>
- [9] Gawande, S., & Pradhan, P. (2024). Unlocking Innovation: The Role of Creativity in Students' Problem-Solving Ability. *Education and Society*, 48(3), 131-138
- [10] Habib, S., Vogel, T., Anli, X., & Thorne, E. (2024). How does generative artificial intelligence impact student creativity?. *Journal of Creativity*, 34(1), 100072.
<https://doi.org/10.1016/j.jyoc.2023.100072>
- [11] Hutson, J., Jeevanjee, T., Vander Graaf, V., Lively, J., Weber, J., Weir, G., Arnone, K., Carnes, G., Vosevich, K., Plate, D., Leary, M., & Edele, S. (2022). Artificial intelligence and the disruption of higher education: Strategies for integrations across disciplines. *Creative Education*, 13(12), 3953-3980.,
<https://doi.org/10.4236/ce.2022.1312253>
- [12] Jaiswal, A., & Arun, C. J. (2021). Potential of Artificial Intelligence for transformation of the education system in India. *International Journal of Education and Development using Information and Communication Technology*, 17(1), 142-158.
<https://eric.ed.gov/?id=EJ1285526>
- [13] Kamala, K., & Kamalakar, G. (2023). AI IS TRANSFORMING EDUCATION TECHNOLOGY AND EDUCATION SYSTEM IN INDIA. *Indian Journal of Social Research*, 64.
https://www.academia.edu/download/112460637/AI_IS_TRANSFORMING_EDUCATION_TECHNOLOGY_AND.pdf
- [14] KANGIWA, B. I., OLUDARE, O. E., NASSARAWA, H. S., ABUBAKAR, N. S., EFEOMA, E. L., & ENEFOLA, H. A. (2024). Leveraging artificial intelligence for enhancing entrepreneurship and creativity in STEM education. *Journal of Educational Research and Practice*.
- [15] Kumar, K. S., Prabu, M. M., Kalaiyarasan, G., Selvan, A., Ramnath, R., & Kumar, N. S. (2022). Exploring artificial intelligence and robotics in Indian education: Potential for teacher substitution?. *International Journal of Emerging Knowledge Studies*, 1 (1), 14, 19.
- [16] Lin, H., & Chen, Q. (2024) Artificial intelligence (AI) -integrated educational applications and college students' creativity and academic emotions: students and teachers' perceptions and attitudes. *BMC Psychol* 12, 487. <https://doi.org/10.1186/s40359-024-01979-0>
- [17] Majid, I., & Lakshmi, Y. V. (2022). Artificial Intelligence in Education. Majid, I. & Vijaya Lakshmi, Y.(2022). Artificial Intelligence In Education. *The Indian Journal of Technical Education*, 45(3), 11-16.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4463555
- [18] Ocen, S., Elasu, J., Aarakit, S. M., & Olupot, C. (2025). Artificial intelligence in higher education institutions: review of innovations, opportunities and challenges. *Frontiers in Education*, 10, Article 1530247., <https://doi.org/10.3389/educ.2025.1530247>
- [19] Pont-Niclòs, I., Echegoyen-Sanz, Y., Orozco-Gómez, P., & Martín-Expeleta, A. (2024). Creativity and artificial intelligence: A study with prospective teachers. *Digital Education Review*, (96), 91–97
- [20] Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, 12, Article 22., <https://doi.org/10.1186/s41039-017-0062-8>
- [21] Rathore, A. A., Sultana, N., Zareen, S. J., & Ahmed, A. (2023). Artificial Intelligence and Curriculum Prospects for Elementary School. *Pakistan Journal of Humanities and Social Sciences*, 11(4), 4635-4644.
<https://internationalrasd.org/journals/index.php/pjhss/article/view/1909/1264>
- [22] Rong Q, Lian Q and Tang T (2022) Research on the Influence of AI and VR Technology for Students' Concentration and Creativity. *Front. Psychol.* 13:767689. doi: 10.3389/fpsyg.2022.767689
- [23] Ruano-Borbalan, J.-C. (2025). The transformative impact of artificial intelligence on higher education: A critical reflection on current trends and futures directions. *International Journal of Chinese Education*, 14(1), 1–16.
<https://doi.org/10.1177/2212585X251319364>
- [24] Salman, H., Imran, A., Niazi, S., Rahat, A., Arif, A., Buriro, S. A., & Butt, S. M. (2024). Artificial intelligence in higher education: Strategies for fostering creativity in writing instruction. *Migration Letters*, 21(S8), 1089-1097.
- [25] Vicente-Yagüe-Jara, M.-I. de, López-Martínez, O., Navarro-Navarro, V., & Cuéllar-Santiago, F. (2023). Writing, creativity, and artificial intelligence. *ChatGPT in the university context. Comunicar*, 31(77), 45-54., <https://doi.org/10.3916/C77-2023-04>
- [26] Woo, David & Guo, Kai. (2023). Exploring an AI-supported approach to creative writing: Effects on secondary school students' creativity. 10.13140/RG.2.2.24489.06247.
- [27] Yalazi-Dawani, S. (2023). Integrating Artificial Intelligence into Creativity Education: Developing a Creative Problem-Solving Course for Higher Education. State University of New York.
- [28] Yalazi-Dawani, S. (2023). Integrating artificial intelligence into creativity education: Developing a creative problem-solving course for higher education. [Master's Degree Thesis, Buffalo State University]
- [29] Zeide, E. (2019). Artificial intelligence in higher education: Applications, promise and perils, and ethical questions. *EDUCAUSE Review*, 54(3), <https://er.educause.edu/articles/2019/8/artificial-intelligence-in-higher-education-applications-promise-and-perils-and-ethical-questions>