# Unlocking Potential: Systematic Review of Generative AI in Higher Education

**Dr. Varsha Parikh., Ms. Jigyasha Deka**

**Department of Extension and Communication, Faculty of Family and Community Sciences the Maharaja Sayajirao University of Baroda, Vadodara, Gujarat**

**DOI: https://dx.doi.org/10.47772/IJRISS.2025.905000424**

**Received: 15 May 2025; Accepted: 19 May 2025; Published: 20 June 2025**

## ABSTRACT

This comprehensive analysis of the literature looks at how generative artificial intelligence (GenAI) is changing education. Using the PRISMA methodology, the review examines research that was published between 2020 and 2024. Key research patterns are identified in the paper, such as how GenAI affects learning outcomes, academic integrity, and ethical issues. The possible advantages and difficulties of GenAI in educational contexts are highlighted by a comparative analysis of the results, which also provides suggestions for further study and the responsible incorporation of GenAI in education.

**Keywords:** Generative AI, Higher Education, Benefits, Concerns, Ethics

## INTRODUCTION

Artificial intelligence has advanced significantly with the advent of Generative Artificial Intelligence (Gen AI). Gen AI is distinguished by its ability to produce new content in a variety of formats, such as text, images, computer code, and more, by using patterns identified from large datasets. By separating Gen AI from standard analytical AI, which mostly concentrates on data interpretation and prediction, this capacity creates new opportunities for innovative and useful applications. Sophisticated Gen AI tools, like Google's Bard (now Gemini) and OpenAI's ChatGPT, have been developed and made much more accessible in recent years. These tools have attracted a lot of interest from the academic and general public. These tools' user-friendly interfaces and powerful content creation capabilities have enabled their quick acceptance in a variety of industries, with higher education institutions being one notable example. This broad accessibility has sparked a global conversation on the revolutionary possibilities and related difficulties of incorporating Gen AI into the core of teaching methods. There is a rare chance to transform conventional teaching and learning paradigms at the nexus of Gen AI and higher education. Through AI-generated simulations and gamified content, Gen AI has the potential to create more dynamic and engaging learning environments, automate time-consuming administrative work for teachers, and provide individualized learning experiences catered to the requirements of individual students.

With the ability to customize learning routes, AI systems can guarantee that every student gets the ideal amount of challenge and support. The accessibility and inclusivity of educational resources can also be improved by using these technologies to help create a variety of educational materials, including exercises, tests, and even eBooks. But in addition to these possible advantages, there are several serious issues and difficulties with integrating Gen AI into higher education. Academic integrity concerns have gained attention, especially the possibility of plagiarism and the challenge of identifying content produced by artificial intelligence. Careful examination and the development of precise rules and frameworks are also necessary for ethical issues of algorithmic bias, data privacy, and the appropriate application of AI technologies.

Furthermore, there are concerns regarding how an excessive dependence on Gen AI may affect students' capacity for creative ideation and critical thinking. The quick development and expanding potential of Gen AI in higher education have sparked an increase in the amount of literature that tries to comprehend its complex effects on students, teachers, and institutions in India and throughout the world. A thorough and methodical

synthesis of the existing level of knowledge is necessary to guide future research, policy, and practice in this quickly developing sector, as this research boom highlights.

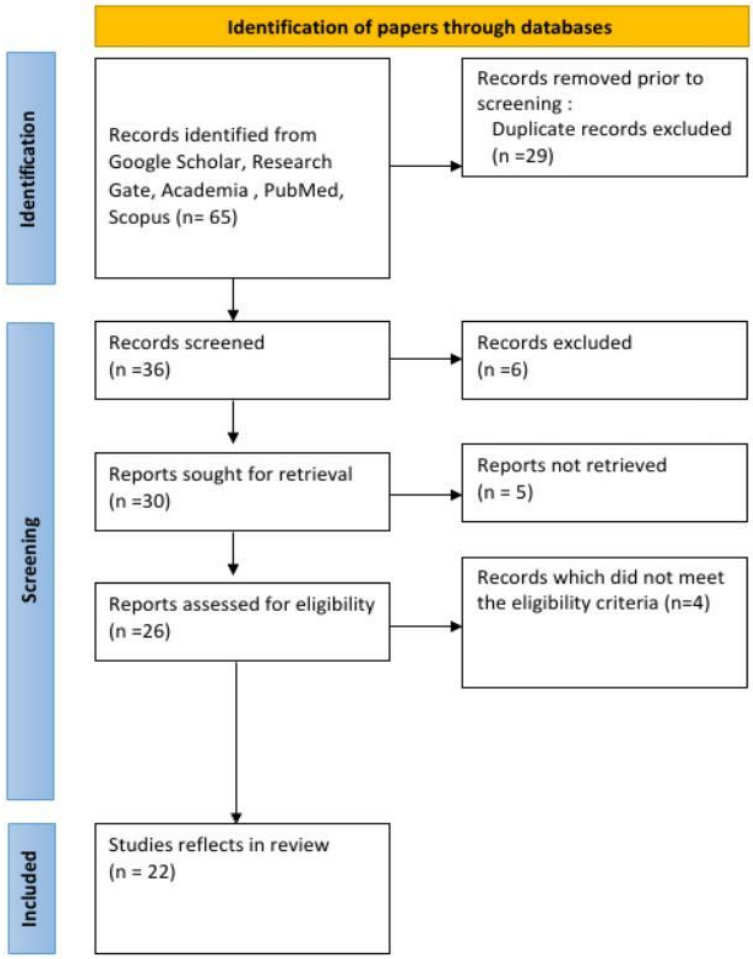
This article of the systematic review of literature draws from five conceptual articles and twenty empirical studies, providing insights into the applications, roles, usage, benefits, and concerns regarding the application of GenAI in higher education, both within India and internationally. The objective of this systematic literature review is to present a thorough and fact-based evaluation of the corpus of research on the use of generative artificial intelligence in higher education.

The main goals of this review are to:

- systematically identify and synthesize the existing literature on the application of Gen AI in higher education; analyze the reported uses, roles, challenges, and importance of Gen AI in this educational context;
- compare and contrast the findings across various studies, taking into account both Indian and international perspectives; identify important research gaps in the current literature; and
- discuss the implications of these findings for future research, policy development, and practical implementation in higher education settings.

## METHODOLOGY

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework's standards were followed in the execution of this systematic review to guarantee a thorough and open procedure.



Using a PRISMA flow diagram, the various phases of the research selection procedure for this article were shown graphically in the above diagram.

**Information Sources and Search Strategy**

The steps of writing the review of literature (RoL) involved the following steps:

2.2.1) Identifying relevant articles,

2.2.2) Screening and selecting articles based on specific criteria, and

2.2.3) Including the final set of articles in the review.

**2.2.1) Identification of research articles:**

The search strategy involved databases like Google Scholar, Research Gate, Academia, PubMed, Scopus, IEEE Xplore, and Science Direct, to search for articles related to GenAI in higher education. Further books, conference proceedings, and newspapers were also considered as important literature for this study. Articles were selected based on specific inclusion and exclusion criteria.

Key terms used for the literature search "Generative AI in higher education", "Generative Artificial Intelligence and university students", "Concerns of application of GenAI in universities", "Benefits of application of Generative AI in higher education", "India Gen AI usage education policies", "Role and usage of Gen AI in higher education"

**2.2.2) Screening and selecting articles based on specific criteria –**

**Inclusion Criteria:**

- The inclusion criteria comprised articles published between 2020 and 2024, peer-reviewed journal articles, conference proceedings, and reports on GenAI in higher education focusing on the application, usage, benefits, and concerns of GenAI in higher education, both conceptual and empirical studies and those conducted within India and outside India.
- Research that specifically addressed the application, usage, benefits, role, impact, significance and concerns of GenAI in higher education environments.
- Empirical investigations using mixed-methods, quantitative, or qualitative research approaches.
- Theoretical studies, conceptual essays, and literature reviews that offered important new perspectives on the subject.
- Research where the main focus of the study was higher education students, instructors, administrators, or institutions.
- To provide accessibility for the researcher, studies were published in English.

**Exclusion Criteria:**

- Exclusion criteria consisted, of articles not published in English, studies unrelated to higher education, and articles focusing solely on technical aspects of GenAI without an educational context.
- Research that covered artificial intelligence in general but did not particularly examine generative AI or its uses.
- Publications that were not academic in nature, such as blog entries, opinion pieces, and news items that lacked peer review and intellectual rigor.

- Research that was published in languages other than English due to a lack of translation resources.
- The same findings from the same dataset were published in duplicate articles.

**2.2.3) Including the final set of articles in the review:** In all from 65 total articles, 24 articles relevant and meaningful articles as per the topic of the study were selected by the researcher.The titles and abstracts of all identified records were first screened using the preset inclusion and exclusion criteria as part of the research selection procedure. After then, records that seemed possibly pertinent were obtained for full-text examination. To ensure that the whole texts qualified for the systematic review, they underwent a thorough examination. To maintain openness and to keep track of the rationale for the inclusion or exclusion of each study, this procedure was documented.

Each of the included studies had pertinent data rigorously extracted using a standardized data extraction form. The study's title, the author or authors, the year of publication, the nation or location where the study was carried out, the main variables examined, the methodology used, the sample size and participant characteristics, the sampling technique used, the study's main conclusions, any gaps in the literature the authors identified, and the study's implications for research or practice were among the important data points that were extracted.

## RESULTS

### Characteristics of Included Studies

A total of 24 papers that satisfied the review's inclusion requirements were found using a methodical search and selection procedure. With the bulk of these studies published in 2020 and 2025, the distribution of these papers by publication year shows a notable surge in research effort on the use of generative AI in higher education in recent years. Geographically speaking, a significant portion of the studies came from India, indicating a keen interest in this subject in the context of Indian higher education. Nonetheless, a sizable percentage of the papers included also featured viewpoints from other countries, offering a more comprehensive grasp of the worldwide patterns and ramifications of Gen AI in higher education.

The included publications comprised a mix of empirical research articles that employed quantitative, qualitative, and mixed methods approaches, as well as conceptual papers and literature reviews that offered valuable insights and theoretical frameworks for understanding the role and impact of Gen AI in this domain.

### Details of Original Evidence

The following narration of conceptual and empirical researches overview of the characteristics and key findings of the studies are as follows. To enhance understanding, the literature is categorized into two main types: conceptual articles and empirical studies. The empirical studies have been thoroughly examined and organized based on their themes, focusing on:

a) Benefits of Applying Generative AI in Higher Education

b) Concerns Related to the Application of Generative AI in Higher Education

c) Role and Usage of Generative AI in Higher Education

This structure allows for a comprehensive exploration of the topic, incorporating insights from both Indian and international contexts.

### Conceptual articles

- ✓ Capano et al. (2025) explore the impact of generative AI on higher education policy in Asia. The article consolidates empirical evidence, practices, assessments, and normative discussions regarding the integration of GenAI into higher education policies.

- ✓ Anu & Ansah (2024) examine the potential benefits and drawbacks of using ChatGPT and related generative AI tools in education. In this article, they highlight how these tools can promote personalized and interactive learning, generate prompts for formative assessments, and address privacy and bias issues.

- ✓ Logan (2024) discusses the ethical concerns associated with the use of generative large language models (LLMs) like ChatGPT in publishing research. This article raises awareness about concerns associated with environmental impact, exploitive labor practices, bias, plagiarism, authorship, and reference accuracy while using GenAI in higher education.

- ✓ Niraj (2023) explores the role of generative AI in higher education, emphasizing its potential to transform teaching and learning. In his article, he discusses several use cases, including personalized learning and customized learning paths based on students' performance data. It also highlights how Generative AI can automate the creation of curriculum materials, save time, reduce costs, and enable educators to focus on personalized instruction.

**Empirical Studies**

**Benefits of application of GenAI in higher education**

**A) Within India**

- ✓ Sahu & Sahu (2024) conducted a study titled "Revolutionary Applications of Generative AI in Higher Education Institutes (HEIs) and its Implications" at an unspecified Indian university. This study used a descriptive research design and survey method with a sample size of 200 students selected through systematic random sampling. The key findings suggest that generative AI significantly enhances educational practices by improving student learning outcomes and reducing repetitive tasks for educators. However, it also highlights the risks of misuse, particularly concerning students' writing and critical thinking abilities.

- ✓ Sharma & Singh (2024) carried out a study titled "Adoption of Artificial Intelligence in Higher Education: An Empirical Study of the UTAUT Model in Indian Universities." This quantitative study used a correlational research design with a sample of 150 students, academics, and support staff from various universities, selected through multistage sampling. The major findings support significant hypotheses and provide recommendations for stakeholders in developing strategies to maximize AI's potential in the unique context of Indian higher education.

**B) Outside India**

- ✓ Saúde et al. (2024) examined the impacts of GenAI in higher education in a mixed-methods study at two higher education institutions in Portugal, with a sample of 112 students selected through snowball sampling. The findings suggest that GenAI can enhance academic work and learning feedback but requires pedagogical support to foster critical, ethical, and digital literacy skills.

- ✓ Abdullah & Zaid (2023) conducted a study titled "Perception of Generative Artificial Intelligence in Higher Education Research" at a single institution in Jordan, targeting postgraduate research students in the field of social sciences. Using a qualitative case study approach with a purposive sample of 33 researchers, the findings reveal significant engagement with Generative AI, emphasizing the importance of responsible and ethical AI usage.

- ✓ Chan & Hu (2023) explored students' perceptions of generative AI technologies such as ChatGPT in Hong Kong. This cross-sectional study surveyed 399 undergraduate and postgraduate students from various disciplines, selected through quota sampling. The findings indicate a generally positive attitude toward GenAI, recognizing its potential for personalized learning support, writing assistance, and research capabilities. Concerns were raised about accuracy, privacy, and ethical issues.

**Concerns of application of GenAI in Higher Education**

**A) Within India**

- ✓ Baruah & Baruah (2024) explored the ethics of generative AI in open and distance learning (ODL) in Guwahati, Assam. Their study assessed the importance of generative AI, particularly ChatGPT, in enhancing learning experiences in ODL. The findings highlighted the need for transparency in AI-generated content to prevent misinformation and underscored the necessity of strong regulations to mitigate potential misuse.

- ✓ Guleria et al. (2023) examined ChatGPT's ethical concerns and challenges in academics and research in Chandigarh. The study aimed to highlight the use of AI and AI-assisted technologies like ChatGPT in scientific writing, addressing biases, the spread of inaccurate information, and plagiarism. The findings revealed inaccuracies in the content generated by ChatGPT, often with incorrect or fabricated references. This raises significant concerns about the potential for spreading misinformation, particularly in critical fields like medicine.

**B) Outside India**

- ✓ Acosta-Enriquez et al. (2024) examined the knowledge, attitudes, and perceived ethics regarding the use of ChatGPT among Generation Z university students in Peru. The study revealed that while students had knowledge and generally positive attitudes toward ChatGPT, these did not guarantee its effective adoption and use. Ethical concerns must be addressed with responsible use programs in higher education to ensure academic integrity and privacy.

- ✓ Gasayameh et al. (2024) conducted a study in Jordan examining university students' insights into generative AI writing tools. The research found moderate levels of familiarity and concerns, with students highlighting worries about misinformation and data security. Despite these concerns, significant benefits, such as enhanced creativity and innovation, were acknowledged.

- ✓ Mironova et al. (2024) explored ethical concerns in the use of generative tools in higher education across different countries. The study found significant differences in perceptions of the ethicality of using generative AI tools among students from various countries, with Bulgarian students considering the use of ChatGPT more unethical compared to others. This highlighted the critical need to understand student attitudes towards generative AI technology to enhance engagement and acceptance in educational contexts.

**Role and Usage of GenAI in Higher Education**

**A) Within India**

- ✓ Panda & Kaur (2024) explored the role of generative AI in academia at Punjabi University, Patiala, Punjab. The study examined various applications of generative AI, such as literature review, visualization, content generation, plagiarism detection, language enhancement, data analysis, and journal selection. The findings emphasized that generative AI significantly reduces researchers' workloads, saves time, and enhances the quality of scholarly outputs.

- ✓ Mazumder et al. (2024) evaluated the responsible use of generative AI in research publication in Indian research journals indexed in Scopus. The study found that more than 50% of the journals had guidelines on the use of generative AI, with the highest presence in Mathematics. However, the lack of standardized and structured information regarding these guidelines poses challenges for authors.

- ✓ Rane (2023) investigated the roles and challenges of generative AI, particularly ChatGPT, in achieving the Sustainable Development Goals (SDGs), with a focus on quality education (SDG 4). The study, conducted in Mumbai, found that ChatGPT significantly contributes to quality education by providing

personalized learning experiences and supporting educators, but also highlighted ethical concerns and biases in AI algorithms.

**B) Outside India**

- ✓ In a study conducted by Aldossary et al. (2024), on the perceptions of Saudi students towards the role of generative artificial intelligence (GenAI) tools in education were analyzed. The study, which surveyed 1,390 students from 15 Saudi universities, followed a descriptive quantitative methodology. Key findings revealed that students had positive perceptions of GenAI tools, showing high levels of awareness and acceptance. The GenAI tools were recognized for improving understanding of complex concepts, skill development, self-efficacy, learning outcomes, providing feedback, and making learning meaningful.

- ✓ Almassaad et al. (2024) investigated student perceptions of generative AI at King Saud University, Riyadh, Saudi Arabia. The study found that the majority of students frequently use generative AI tools for academic purposes, citing benefits such as ease of access and time-saving. However, challenges such as subscription fees, unreliable information, and impacts on learning autonomy were also noted.

- ✓ Diao et al. (2024) conducted a meta-analysis of college students' intention to use generative AI, analyzing factors influencing students' behavioural intentions. The study found strong correlations between identified variables (performance expectancy, attitude, effort expectancy, habit) and students' intention to use generative AI.

- ✓ Nie et al. (2024) explored the role of AI autonomy in higher education through an onlinesurvey of 673 participants. The study focused on three types of AI autonomy (sense, thought, action) and their impact on students; usage intentions, using the uses and gratification framework. Key findings indicated that sensing autonomy positively influences usage intention through social interaction and entertainment gratifications, thought autonomy is positively related to usage intention via information-seeking and social interaction gratifications, and action autonomy is linked to usage intention through information-seeking and entertainment gratifications.

- ✓ Pierrès et al. (2024) conducted a qualitative study using semi-structured interviews with 33 students with disabilities to explore how ChatGPT aids in higher education. The study found that ChatGPT significantly enhances learning outcomes and assists in teaching, writing, reading, research, and self-organization for students with disabilities. The results suggested that higher education institutions should consider the benefits of such tools and provide proper training and information to students.

- ✓ Zhou (2024) explored the impact of generative AI on student learning at the University of Washington, USA. The study revealed that students generally hold a positive attitude toward generative AI and utilize it for various academic tasks. However, ethical concerns and the need for guidelines for its integration were highlighted.

- ✓ Chukwuere (2023) conducted a narrative literature review to develop a generative AIchatbots conceptual framework for higher education. The study synthesized peer-reviewed English-language publications from 2020-2023 and focused on user adoption factors such as optimism, innovativeness, discomfort, and insecurity. The findings highlighted the transformative potential of generative AI chatbots in streamlining administrative tasks, enhancing student learning experiences, and supporting research activities. However, the study also emphasized the need for ongoing research and adaptation to address challenges such as academic integrity concerns and resource allocation.

**Research Trends**

- From the above literature, the reviewed studies were conducted in various regions, with eight studies in India viz., Assam, Punjab, New Delhi, and Mumbai and twelve studies were from abroad viz., Hong Kong, Jordan, Latvia, Washington D.C., Peru, China, Saudi Arabia.

- Regarding research methods, it was observed that the survey method was predominantly used for collecting quantitative data. Other methods included interviews, descriptive research design, cross-sectional research design, and case studies.

- In the above empirical studies, sample sizes ranged from 11 to 1390, with various sampling techniques such as simple random, systematic random, quota, snowball, and multistage sampling. Data was collected using pre-structured questionnaires and structured interviews.

- Further, the above studies examined benefits, concerns, usages, and the role of GenAI in higher education, wherein variables included the impact of GenAI on student learning, role of libraries, challenges, familiarity with GenAI, readiness to adopt the technology, perception of its ease of use and usefulness, ethical concerns, and presence of guidelines for GenAI usage.

- A significant trend observed was the emphasis on ethical concerns surrounding using GenAI, including plagiarism, academic integrity, and data privacy. Institutions were encouraged to develop robust policies to address these ethical dilemmas.

- Some studies also indicated a trend of increasing student engagement with GenAI tools, with a positive correlation between students' familiarity with these technologies and their willingness to use them in academic settings.

- A number of significant research trends in the area of generative AI in higher education are revealed by the examination of the included papers. Understanding students' and teachers' attitudes and views of Gen AI technologies like ChatGPT is a major focus of the research. In order to guide the development of instructional practices and policies, these studies investigate the familiarity, perceived advantages, and issues related to the use of Gen AI in academic contexts.

- Examining how Gen AI affects academic integrity and evaluation procedures is another significant trend. In order to uphold academic standards, researchers are investigating novel assessment techniques and the problems presented by AI-generated content, such as plagiarism and detection difficulties.

# DISCUSSION

### Comparison and Contrast of Results

The studied literature consistently portrays Gen AI as a formidable instrument that might have a big influence on higher education. Similar uses of Gen AI, such as for writing help, research support, and tailored learning, are highlighted by studies conducted in a variety of worldwide settings as well as in India.32 The perceived significance of Gen AI and the focus on certain jobs, however, might differ. International studies may concentrate more emphasis on India's role in educating students for a global AI-driven future, but research on India, for example, frequently highlights its capacity to close access gaps and foster inclusion in a varied educational landscape.

Additionally, the issues and worries surrounding Gen AI are often the same throughout the literature. Both in India and elsewhere, academic integrity and the possibility of plagiarism are commonly mentioned as significant problems.One Common worries also include ethical issues like partiality and data privacy.5. However, depending on the particular educational setting and cultural norms, the subtleties of these difficulties may vary. Studies on foreign students, for instance, can draw attention to further issues with language accessibility and cultural competency in AI applications.

Despite widespread agreement over Gen AI's disruptive potential, there are numerous inconsistencies and differing points of emphasis. For instance, whereas some research highlights how Gen AI may improve critical thinking through assignments like as evaluating AI-generated material 6, others raise concerns that an over dependence on these tools could impair students' capacity for autonomous thought.9. These contrasting

viewpoints highlight how difficult it is to integrate Gen AI and how implementation tactics must be well thought out.

**Research Gaps**

The researcher found limited studies from India compared to the global level and a few studies from north-eastern and western India, specifically Assam and Gujarat of India.

- Gap was also observed by noting, lack of studies addressing the perceptions of generative AI in higher education within the context of north-eastern and western Indian regions and very few studies found which were focusing on specific generative AI tools like Chatgpt, Jemini, Grammarly, QuillBot, used by students.

- Regarding research areas also insufficient research on the specific challenges faced by students while using generative AI tools were observed by the researcher.

- Also, very few studies addressed the concerns of GenAI in higher education.

- A thorough analysis of the literature identifies a number of important research gaps that need to be filled. Longitudinal research that investigate the long-term effects of Gen AI on student learning outcomes, skill development, and academic advancement are conspicuously lacking.One The majority of recent studies only offer a glimpse of early usage and impressions; the long-term impacts are still mostly unknown. Additionally, even if student viewpoints are receiving increasing attention, more study is required to comprehend the attitudes and experiences of administrators and teachers with relation to incorporating Gen AI into institutional rules, assessment procedures, and curriculum design. Further investigation is needed into the efficacy of various teaching strategies for integrating Gen AI across academic fields.

- It is imperative that future research focus on creating and assessing successful methods for fostering academic integrity in the era of Gen AI.9. This entails developing strong AI detection tools and investigating novel evaluation techniques that can differentiate between AI-augmented work and authentic student comprehension. In order to comprehend the distinct effects of Gen AI technologies on higher education and how to effectively exploit or minimize their characteristics, additional study is also required to concentrate on certain tools like ChatGPT and Google Bard.One Lastly, in order to customize implementation tactics to particular demands and situations, further research is needed on the cultural and contextual aspects impacting the acceptance and usage of Gen AI in various institutions and areas.

**Implications for Research and Practice**

The above comprehensive review of the literature have important implications for both present and future higher education research. Longitudinal studies should be given top priority in future research in order to monitor the long-term impacts of Gen AI on student learning and proficiency. Developing successful integration techniques and institutional policies requires research into the viewpoints of administrators and educators. Teachers will benefit greatly from empirical research examining the efficacy of diverse teaching strategies utilizing Gen AI across disciplines. To guarantee that everyone in the higher education community can benefit from Gen AI, research addressing equality and access challenges is crucial. Additionally, it is crucial to create and validate strategies to support academic integrity in the context of Gen AI.

In order to ensure that students and teachers utilize Gen AI in an ethical and responsible manner, higher education institutions should create thorough and unambiguous norms and guidelines. One This involves giving all stakeholders access to tools and training to improve their AI literacy.1 Teachers ought to investigate cutting-edge evaluation techniques that emphasize learning and higher-order thinking abilities rather than just the end product.58 To guarantee that all students and faculty have fair access to Gen AI technologies and training, institutions should make the required infrastructure and support investments.60 To overcome the

obstacles and seize the potential that Gen AI in higher education presents, educators, tech specialists, and legislators must work together to create a fair and efficient integration that benefits all students.

## CONCLUSION

In conclusion, this review highlights the transformative potential of AI in education, acknowledging both its advantages, concerns as well inherent challenges. AI-powered adaptive learning and automated assessments offer opportunities for personalized education and efficient workflows. However, ethical considerations, potential biases in algorithms, and infrastructural limitations must be carefully addressed to ensure equitable implementation. In order to understand this scenario for Northeast and Western regions of India, proposed study have been conceptualised by the researcher.

This comprehensive overview of the literature has highlighted the present research on the use of generative artificial intelligence (AI) in higher education, emphasizing its wide range of applications, transformational potential, noteworthy difficulties, and increasing significance. According to the data, Gen AI is being used more and more by educators and students for a range of academic jobs. It provides advantages including automated content generation, individualized learning, and increased productivity. Nonetheless, important issues with regard to ethical issues, academic integrity, and the possible influence on critical thinking continue to be at the forefront of the discussion. The necessity of preparing students for an AI-driven future and utilizing its potential to improve the caliber and accessibility of education highlight the significance of incorporating Gen AI into higher education.

### Way Forward

Future studies should concentrate on filling in the gaps that have been found, especially with regard to the long-term effects of Gen AI, the viewpoints of administrators and teachers, the efficacy of pedagogical techniques, concerns of access and equity, and tactics for fostering academic integrity. Recommendations for establishing unambiguous rules and regulations, offering thorough instruction, investigating cutting-edge evaluation techniques, and making the required infrastructure investments are all part of higher education institutions. concentrate on helping students develop their critical thinking and AI literacy, while legislators should take into account the wider cultural and ethical ramifications of Gen AI in education. By addressing these areas would help the higher education sector integrate generative AI in a way that optimizes its advantages while minimizing its hazards, giving students more efficient and fair learning opportunities.

Declaring that, there is no Conflict of Interest for this article.

## REFERENCES

1. Abdullah, Z., & Zaid, N. M. (2023). Perception of Generative Artificial Intelligence in Higher Education Research. Innovative Teaching and Learning Journal, 7(2), 84–95. https://doi.org/10.11113/itlj.v7.137
2. Afrita, F. (2023). Artificial intelligence in education: Benefits, challenges, and future research directions. Journal of Educational Management and Leadership, 1(1), 1–10.
3. Ahajjam, S., En-Naimi, M., & Benlahmar, E. H. (2022). Artificial intelligence in education: A review. International Journal of Educational Technology in Higher Education, 19(1), 1–20.
4. Almassaad, A., Alajlan, H., & Alebaikan, R. (2024b). Student Perceptions of Generative Artificial Intelligence: Investigating Utilization, Benefits, and Challenges in Higher Education. Systems, 12(10), 385. https://doi.org/10.3390/systems12100385
5. Alshater, A. M. (2023). ChatGPT in higher education: Opportunities, challenges, and the way forward. Journal of Educational Technology & Online Learning, 6(3), 340–359.
6. Aminah Saad Aldossary, Aljindi, A. A., & Jamilah Mohammed Alamri. (2024). The role of generative AI in education: Perceptions of Saudi students. Contemporary Educational Technology, 16(4), ep536–ep536. https://doi.org/10.30935/cedtech/15496

7. Ankita Guleria, Krishan, K., Sharma, V., & Tanuj Kanchan. (2023). ChatGPT: ethical concerns and challenges in academics and research. Journal of Infection in Developing Countries, 17(09), 1292–1299. https://doi.org/10.3855/jidc.18738
8. 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. SSRN Electronic Journal, 7(1), 52–62. https://doi.org/10.2139/ssrn.4337484
9. Bansal. (2024). Artificial Intelligence in Higher Education: Opportunities and Challenges in India.
10. Bansal. (2024). Generative AI in Modern Education Society.
11. Baruah, T. D., & Apratim Baruah. (2024). Generative AI Ethics in Open and Distance Learning: ChatGPT's Role Under the Lens. Journal of Communication and Management, 3(04), 287–294. https://doi.org/10.58966/JCM2024342
12. Benicio Gonzalo Acosta-Enriquez, Agustín, M., Graciela, C., Orellana, N., Cristian, Micaela, J., Gutiérrez, D., Cuenca, U., Xavier, D., & Carlos López Roca. (2024). Knowledge, attitudes, and perceived Ethics regarding the use of ChatGPT among generation Z university students. International Journal for Educational Integrity, 20(1). https://doi.org/10.1007/s40979-024-00157-4
13. Capano, G., He, A. J., & McMinn, S. (2025). Riding the tide of generative artificial intelligence in higher education policy: an Asian perspective. Journal of Asian Public Policy, 1–15. https://doi.org/10.1080/17516234.2025.2450571
14. Chakraborty, S. (2024). Generative AI in Modern Education Society.
15. Chan, C. K. Y., & Hu, W. (2023c). Students' voices on generative AI: Perceptions, benefits, and challenges in higher education. International Journal of Educational Technology in Higher Education, 20(1), 1–18. https://doi.org/10.1186/s41239-023-00411-8
16. Chukwuere, J. (n.d.). Developing generative AI chatbots conceptual framework for higher education. https://arxiv.org/pdf/2403.19303
17. Chukwuere, J. E. (2025). The future of generative AI chatbots in higher education.
18. Costa, K., Ntsobi, P. M., & Mfolo, L. (2024). Challenges, benefits and recommendations for using generative artificial intelligence in academic writing–a case of ChatGPT. Medicon Engineering Themes, 7(1), 1–8.
19. Dhagare, R. P. (2025). Generative AI and Education: A Symbiotic Relationship. International Journal for Research in Applied Science and Engineering Technology, 12(11), 1042–1045.
20. Dubey, S. S. (2024). ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION: OPPORTUNITIES AND CHALLENGES IN INDIA.
21. Farrelly, T., & Baker, N. (2025). Generative Artificial Intelligence: Implications and Considerations for Higher Education. Education Sciences, 13(11), 1109.
22. Gautam, M. B., Gogoi, P., & Mazumdar, K. (2024). Responsible use of Generative Artificial Intelligence in Research Publication: A case study of Indian research journals in Scopus. Inflibnet.ac.in. http://ir.inflibnet.ac.in/handle/1944/2482
23. Generative AI in Higher Education: Importance, Use Cases, Integration. (n.d.). Harbinger. https://www.harbingergroup.com/blogs/generative-ai-in-higher-education-importance-use-cases-integration/
24. Jain, K. K., & Raghuram, J. N. V. (2024). Gen-AI integration in higher education: Predicting intentions using SEM-ANN approach. Education and Information Technologies, 29(13), 17169–17209.
25. Jūlija Mironova, Viktoriia Riashchenko, Remigijus Kinderis, Djakona, V., & Dimitrova, S. (2024). ETHICAL CONCERNS IN USING OF GENERATIVE TOOLS IN HIGHER EDUCATION: CROSS - COUNTRY STUDY. Environment Technology Resources Proceedings of the International Scientific and Practical Conference, 2, 444–447. https://doi.org/10.17770/etr2024vol2.8097
26. Jūlija Mironova, Viktoriia Riashchenko, Remigijus Kinderis, Djakona, V., & Dimitrova, S. (2024b). ETHICAL CONCERNS IN USING OF GENERATIVE TOOLS IN HIGHER EDUCATION: CROSS - COUNTRY STUDY. Environment Technology Resources Proceedings of the International Scientific and Practical Conference, 2, 444–447. https://doi.org/10.17770/etr2024vol2.8097
27. Li, Z. (2024). Generative AI in Higher Education Academic Assignments: Policy Implications from a Systematic Review of Student and Teacher Perceptions.

28. Logan, S. W. (2024). Generative Artificial Intelligence Users Beware: Ethical Concerns of ChatGPT Use in Publishing Research. Journal of Motor Learning and Development, 1–8. https://doi.org/10.1123/jmld.2024-0024
29. Niu, W., Zhang, W., Zhang, C., & Chen, X. (2024). The Role of Artificial Intelligence Autonomy in Higher Education: A Uses and Gratification Perspective. Sustainability, 16(3), 1276–1276. https://doi.org/10.3390/su16031276
30. Nitin Liladhar Rane. (2023). Roles and Challenges of ChatGPT and Similar Generative Artificial Intelligence for Achieving the Sustainable Development Goals (SDGs). Social Science Research Network. https://doi.org/10.2139/ssrn.4603244
31. Oriane Pierrès, Alireza Darvishy, & Christen, M. (2024). Exploring the role of generative AI in higher education: Semi-structured interviews with students with disabilities. Education and Information Technologies. https://doi.org/10.1007/s10639-024-13134-8
32. Panda, S., & Kaur, N. (2024). Exploring the role of generative AI in academia: Opportunities and challenges. IP Indian Journal of Library Science and Information Technology, 9(1), 12–23. https://doi.org/10.18231/j.ijlsit.2024.003
33. Risana, M. N., John, S., Sabu, S., & Anoopkumar, K. (2024). Artificial Intelligence and Pharmacy Education: A Survey to Assess the Knowledge, Application, and Perspective of B. Pharm. Students from India. Research in Pharmacy, 12(1), 1–10.
34. Sabu, S. (2024). Importance of Incorporating Generative AI into Indian University Curriculums. International Journal of Advanced Research in Science, Communication and Technology, 4(5), 234–237.
35. Sahu, A., & Sahu, A. (2024). Revolutionary Applications of Generative AI in Higher Education Institutes (HEIs) and its Implications. Library Philosophy and Practice (e-journal), 1–18. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=15499&context=libphilprac
36. Saúde, S., Barros, J. P., & Almeida, I. (2024). Impacts of Generative Artificial Intelligence in Higher Education: Research Trends and Students' Perceptions. Social Sciences, 13(8), 410. https://doi.org/10.3390/socsci13080410
37. Shahzad, M. F., Xu, S., & Zahid, H. (2024). Exploring the impact of generative AI-based technologies on learning performance through self-efficacy, fairness & ethics, creativity, and trust in higher education. Education and Information Technologies, 29(13), 1–26.
38. Sharma, N. (2024). Impact of Generative AI in Education. International Journal of Advanced Research in Science, Communication and Technology, 4(5), 230–233.
39. Sharma, S., & Singh, G. (2024). Adoption of artificial intelligence in higher education: an empirical study of the UTAUT model in Indian universities. International Journal of Systems Assurance Engineering and Management. https://doi.org/10.1007/s13198-024-02558-7
40. Solanke, S. A. (2024). The Prospects of Generative AI in Higher Education. International Journal of Scientific Research in Engineering and Management (IJSREM), 8(04), 1–6.
41. Suryanti, R., & Ramadhanti, G. (2024). The Use of Generative AI in Higher Education Students' Writing: A Systematic Literature Review. Journal of English as a Foreign Language Education, 2(1), 1–10.
42. Vo, T. K. A., & Nguyen, H. (2024). Generative Artificial Intelligence and ChatGPT in Language Learning: EFL Students' Perceptions of Technology Acceptance. Journal of University Teaching & Learning Practice, 21(6), 199–218.
43. Zafar, S., Shaheen, F., & Rehan, J. (2024). Use of ChatGPT and Generative AI in Higher Education: Opportunities, Obstacles and Impact on Student Performance. IRASD Journal of Educational Research, 5(1), 1–12.
44. Zhou, Y. (2024). An Exploratory Study on the Impact of Generative AI on Student Learning in Higher Education. TechTrends, 68(4), 687–690.
45. Zhou, Y. (2024, September 9). An Exploratory Study on the Impact of Generative AI on Student Learning in Higher Education. Washington.edu. https://digital.lib.washington.edu/researchworks/items/6d3545a3-4b4b-4347-8528-218c80da6bfb/full AI assistance
46. Grammarly. (2025). Grammarly Citation Generator [AI-powered citation tool]. https://www.grammarly.com/citations/apa/generative-ai71012

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue V May 2025

47. MyBib. (2024). MyBib Citation Generator [AI-powered citation tool]. https://www.mybib.com7
48. Perplexity. (2023). Perplexity.ai [AI chatbot]. https://www.perplexity.ai/6
49. Google. (2024). Gemini [Large language model]. https://gemini.google.com