

Artificial Intelligence and the Changing Aims of Higher Education

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Abstract

The swift growth of artificial intelligence (AI) is reshaping societies worldwide, exerting a profound impact on crucial sectors such as healthcare, employment, and education. Within higher education, AI has become a transformative force, altering teaching and learning practices, influencing curriculum development, and redefining institutional goals. Although AI promotes progress through greater accuracy, efficiency, and personalized learning experiences, it simultaneously presents significant challenges, including potential job losses, skill gaps, and ethical concerns. The growing gap between industry requirements and traditional higher education curricula has contributed to a shift in the aims of higher education (Tmanova, L., 2025)—from rote learning and content-based instruction to skill-oriented and lifelong learning models. Technologies powered by artificial intelligence, including adaptive learning systems, automated evaluation methods, and learning analytics, are enabling more individualized and outcome-focused education. In India, the National Education Policy (NEP) 2020 places strong emphasis on digital transformation, innovation in technology, and the development of skills, thereby recognizing AI as a key driver of educational reform. However, the increasing reliance on AI also raises ethical concerns, including algorithmic bias (Ali, I., Nguyen, K., Ali, A. M., & Cui, T., 2025), lack of transparency, and the potential marginalization of human educators. This paper argues that while AI offers substantial opportunities for enhancing higher education, it must complement rather than replace human judgment to preserve academic integrity, ethical standards, and the public purpose of higher education. The study highlights the need for a balanced, human-centric approach to AI integration in higher education.

Keywords: artificial intelligence, higher education, employability, ethical concerns, NEP 2020, lifelong learning

Introduction

Artificial Intelligence (AI) has emerged as a transformative force behind everything in the 21st century. AI is increasingly shaping the future of society, influencing economic structures, governance mechanisms, and social institutions, with no sector remaining unaffected by its accelerated development (UNESCO, 2019). The education system, particularly higher education, is undergoing a profound transformation as AI reshapes its aims, institutional structures, and modes of knowledge production and dissemination. Traditionally, higher education largely emphasised rote learning and theoretical knowledge, with limited focus on skill-based, interdisciplinary, and application-oriented learning. However, in the contemporary era of artificial intelligence, the nature of the employment sector is rapidly changing due to automation, digitalisation, and the growing demand for advanced cognitive and technological skills (OECD, 2021).

Consequently, the aims of higher education are also evolving, shifting towards the development of critical thinking, innovation, adaptability, digital literacy, and lifelong learning to ensure graduate employability in an AI-driven global economy (World Economic Forum, 2020).

The growing use of AI-driven tools in higher education—such as adaptive learning platforms (Aljuaid, H., 2024), automated assessment systems, and learning analytics—has begun to reshape teaching-learning processes and institutional governance. These technologies promise enhanced efficiency, personalised learning experiences, and expanded access to education across national boundaries. At the same time, they raise critical questions about the changing aims of higher education. The increasing reliance on data-driven and algorithmic systems risks prioritising measurable outcomes and technical skills over broader educational values such as intellectual autonomy, democratic engagement, and ethical reflection.

Although substantial research has explored the role of artificial intelligence in higher education, significant gaps remain. Much of the existing literature prioritises technological efficiency, while comparatively less attention is paid to the impact of artificial intelligence on employment opportunities, students' values, and ethical development. Issues related to data privacy, algorithmic bias, and responsible use also remain underexamined. This study examines how artificial intelligence is transforming conventional methods in higher education and investigates its ethical and responsible use for the overall development of students and society.

Literature review

The intersection of artificial intelligence (AI) (Jembu, J. P., & Balang, R. V., 2025). and higher education has attracted growing scholarly attention, particularly regarding its role in reshaping educational practices and institutional objectives. Several studies emphasise the transformative potential of AI in enhancing teaching, learning, and administrative efficiency, while others highlight concerns about marketisation, ethical challenges, and the erosion of the traditional public purpose of higher education. Together, these perspectives suggest that AI is both an opportunity and a challenge for contemporary higher education systems.

Emerging technologies enable the personalisation of curricula, allowing institutions to respond to the diverse learning needs of individual students (Uğur, S. (Ed.). M., 2026). Effective implementation, however, requires strategic planning aligned with institutional goals and educational priorities, ensuring that technological tools complement rather than replace pedagogical objectives (Ocaña-Fernández, Valenzuela-Fernández, & Garro-Aburto, 2019). AI is expected to significantly influence the higher education landscape, as certain traditional jobs may become obsolete while new skill sets are required. Institutions must therefore equip students with the competencies necessary to thrive in an AI-driven environment, preparing them for evolving employment demands (Ma & Siau, 2018).

In the Indian context, higher education faces persistent challenges such as low enrollment—only 26.3% in 2018—and high dropout rates due to financial constraints, limited resources, and familial responsibilities, including early marriage. These conditions underscore the importance of low-cost, accessible technologies capable of delivering personalised support to students. Tools such as chatbots and other self-service platforms can enhance institutional responsiveness and innovation. Furthermore, the application of advanced AI and machine learning techniques allows the rapid development of solutions that would otherwise require years of traditional effort, thereby improving accessibility, efficiency, and the overall quality of the student experience (Kuleto et al., 2021).

Despite these advantages, the integration of AI in higher education raises significant ethical and academic integrity concerns. AI tools have the potential to facilitate plagiarism, suppress creativity, limit critical thinking, and undermine originality in both teaching and research. Ensuring the integrity of higher education thus requires institutions to prioritise human intelligence, critical analysis, and ethical standards alongside technological adoption. While AI offers opportunities for innovation and efficiency, proactive strategies are necessary to mitigate risks and uphold the foundational principles of academic integrity (Khatri & Karki, 2023).

Although considerable research exists on AI in higher education, several gaps remain. Few studies specifically examine how AI can be leveraged to generate meaningful employment opportunities for graduates, influence the ethical and social values of students, or provide solutions for ensuring equitable access and personalised learning in resource-constrained settings. Furthermore, while many scholars highlight technological potential, limited research addresses how institutions can balance innovation with the preservation of critical thinking, creativity, and the public mission of higher education (Zhou, Y., 2024). These gaps indicate the need for further investigation into the responsible and context-sensitive integration of AI in higher education systems globally and in India.

Overall, the literature indicates that artificial intelligence in higher education is a double-edged sword: it presents transformative possibilities for personalised learning, skill development, and institutional innovation, while also raising critical questions regarding ethics, equity, and the broader societal purpose of education (Azoury, N., & Hajj, C., 2024). By synthesising these findings, this review establishes the conceptual and empirical context for the present study, which seeks to critically analyse how AI is reshaping the traditional aims of higher education and how it can be adopted responsibly to benefit students and society as a whole. However, much of the existing literature tends to focus on technological benefits while giving comparatively less attention to the broader socio-ethical implications of AI in higher education.

Conceptual Framework

Artificial Intelligence refers to systems capable of performing tasks that typically require human intelligence, including learning, reasoning, and decision-making (UNESCO, 2019). AI systems often rely on external datasets (Cando, D. A. F., Rodríguez, L. E., Torres, A. G., & Gómez, J. D. G., 2026), including big data, to optimise performance and achieve high efficiency in assigned tasks. Once confined to the realm of science fiction and theoretical debate, AI has now become an integral part of daily life, influencing a wide range of sectors including manufacturing, healthcare, and supply chain management. Its ability to perform functions beyond human capabilities has led to significant improvements in productivity, operational efficiency, and innovation across industries.

Artificial Intelligence in Higher Education

Artificial intelligence has emerged as a significant force in reshaping higher education by transforming teaching (Fan, S., & Muyunda, G., 2025) learning, and administrative processes. The integration of AI-driven tools such as intelligent tutoring systems, learning analytics, adaptive learning platforms, and chatbots has enabled institutions to enhance instructional efficiency and student engagement (Zhao, G., Li, M., Long, Z., & Fan, H., 2025). AI facilitates personalised learning experiences by analysing student data, identifying learning patterns, and tailoring educational content to individual needs, thereby improving academic outcomes and learner retention. In addition, AI supports faculty and institutions by

automating routine administrative tasks (Tripathi, Sumit, and Joanna Rosak-Szyrocka, eds., 2024), enabling data-informed decision-making, and optimising institutional management.

At the same time, the adoption of artificial intelligence in higher education (Berisha Qehaja, A., 2025) reflects broader structural changes linked to globalisation, digitalisation, and the knowledge economy. With growing demand for required skills in the private sector higher education institutions are under pressure to align curricula (Majumder, S., & Misra, 2024) with emerging technological competencies. AI plays a crucial role in preparing students for this evolving employment landscape by fostering skills such as problem-solving, critical thinking, and technological literacy. However, scholars also caution that excessive reliance on AI-driven systems may reinforce market-oriented approaches to education and will marginalize the weaker sections of the society who lack digital literacy and cannot afford these technologies; this can in fact increase the digital divide. Therefore, the integration of artificial intelligence in higher education requires a balanced approach that maximises its pedagogical benefits while safeguarding academic values, equity, and ethical standards.

Traditional Education versus Artificial Intelligence–Based Education

Traditional systems of higher education have largely relied on classroom-based instructional methods such as the chalk-and-board approach, lectures, interactive discussions, debates, and case studies. While these methods have historically contributed to knowledge transmission and intellectual development, they are often criticised for their strong emphasis on rote learning and limited focus on practical skill application. Student engagement in traditional classrooms is frequently passive, with restricted opportunities for personalised learning and experiential engagement. Consequently, many learners perceive the knowledge imparted through conventional educational practices as outdated and insufficiently aligned with contemporary socio-economic and employment demands.

Empirical evidence supports these concerns. Data from the All India Survey on Higher Education, conducted by the Ministry of Education, indicate a steady increase in enrolment in higher education institutions across India (Misra, P. K., & Sabharwal, N. S., 2025). By 2024, total enrolment reached approximately 43.3 million students, reflecting significant quantitative expansion. However, this growth has not resulted in commensurate improvements in graduate employability. Reports suggest that only 42.6% of graduates were considered job-ready in 2025, representing a decline from earlier years. Additionally, according to reports published by The New Indian Express, nearly 44.5% of individuals aged 20–24 remain unemployed despite possessing higher education qualifications.

These trends underscore a widening disconnect between the objectives of traditional higher education and the evolving requirements of the labour market. The persistence of this gap has intensified scholarly and policy debates on the need to reorient higher education towards skill development, adaptability, and employability—areas increasingly associated with artificial intelligence–based educational models.

Artificial intelligence and employment

The rapid advancement of artificial intelligence has significantly altered labour market structures, leading to both job displacement and the creation of new forms of employment.

According to existing analyses, widespread concerns regarding artificial intelligence leading to large-scale unemployment are unlikely to materialise. Similar to earlier labour-saving technological innovations, artificial intelligence is expected to stimulate the emergence of new industries and generate more employment opportunities than it displaces. By automating monotonous and repetitive tasks, AI enables

human workers to engage in more innovative and creative activities. Moreover, despite rapid technological progress, it is estimated that achieving full human-level artificial intelligence remains several decades away. In the foreseeable future, the most significant applications of AI are likely to involve collaboration between humans and machines, combining computational efficiency with human intuition, ethical reasoning, and critical thinking. While AI systems offer speed, accuracy, and consistency, human intelligence contributes creativity, emotional understanding, and normative judgement. This complementary relationship is expected to give rise to an augmented workforce in which humans and AI function as hybrid teams, enhancing productivity and enabling outcomes previously unattainable (Petropoulos, 2018).

The integration of artificial intelligence into curriculum design is transforming the structure and objectives of higher education institutions by enabling personalised, adaptive, and data-informed learning experiences. AI-driven curriculum design utilises machine learning, learning analytics, and intelligent systems to align academic programmes with evolving industry requirements and diverse student learning profiles. Such an approach enhances student engagement, facilitates timely and continuous feedback, and supports the development of skills relevant to future employment demands. As a result, curricula are increasingly oriented towards flexibility, competency-based learning, and workforce readiness. However, the adoption of AI-driven curricular models also necessitates institutional investments in faculty capacity building, robust data governance frameworks, and continuous assessment mechanisms to ensure ethical, effective, and sustainable implementation (Tariq, 2026). This shift in curriculum design reflects a broader transformation in the aims of higher education, from knowledge accumulation to the development of adaptable and future-ready human capital.

The findings suggest that the capabilities and applications of artificial intelligence have expanded significantly (Choudhary, P., Satpathy, S., Dagur, A., & Shukla, D. K. (Eds.)., 2025)., underscoring its growing relevance across multiple sectors. However, the rapid advancement of AI also presents substantial challenges, particularly with regard to preparing the workforce for future technological demands. One of the most critical challenges identified is the need for effective reskilling and upskilling strategies. The study highlights a notable shift in the perceived importance of skills in both present and future labour markets, indicating that traditional competencies are increasingly insufficient. Consequently, continuous reskilling, upskilling, and the development of new talent have become essential to address evolving employment requirements. This shift reinforces the importance of lifelong learning as a central objective of higher education in the age of artificial intelligence (Hamburg, 2025).

This shift indicates a gradual decline in the exclusive importance of formal higher education degrees, accompanied by a growing emphasis on lifelong, practical, and skills-based learning as the primary means of sustaining employability in an AI-driven economy.

Role of Artificial Intelligence in Higher Education

Artificial intelligence is increasingly embedded in higher education through a range of technological applications that support teaching, learning, and assessment processes. Digital tools such as learning management systems, plagiarism-detection software, and algorithm-based instructional platforms have become integral to academic administration and pedagogy. These technologies assist institutions in managing large student populations, monitoring academic progress, and ensuring efficiency in evaluation practices. AI-driven systems also enable scalable educational models by facilitating online learning, flexible access, and lifelong learning opportunities. The growing reliance on such technologies reflects the

expanding role of artificial intelligence in reshaping instructional delivery and institutional practices within higher education (Popenici & Kerr, 2017).

Findings indicate that performance prediction, resource recommendation, automated assessment, and enhancement of learning experiences are the core functions of AI applications in online higher education. Studies focusing on Latin American higher education identify key AI applications such as predictive modeling, intelligent analytics, assistive technologies, automated content analysis, and image analytics (Salas-Pilco & Yang, 2022). Bibliometric analyses further show that research on AI in higher education has expanded significantly, with major contributions from the United States and a strong emphasis on virtual tutoring, student profiling, and learning prediction (Hinojo-Lucena et al., 2019; Chu et al., 2022). Zawacki-Richter et al. (2019) identify four primary uses of AI in higher education: profiling and prediction, assessment and evaluation, adaptive and personalized learning systems, and intelligent tutoring systems. Despite this growing body of research, recent studies highlight the rapid evolution of AI technologies and emphasize the need for continued investigation into emerging applications in higher education (Crompton & Burke, 2023).

Ethical Concerns related to Artificial Intelligence

The expanding use of artificial intelligence in higher education has intensified concerns related to academic integrity and ethical practices. While AI offers significant benefits, it also poses risks such as increased plagiarism, reduced critical thinking, constrained creativity, and diminished originality in teaching, learning, and research. Preserving the integrity of higher education therefore requires a strong commitment to ethical and academic principles, with human judgement and critical reasoning remaining central to scholarly work. The integration of AI challenges established educational values, methodologies, and standards, making it essential for institutions to balance technological innovation with responsible governance. Consequently, the focus should be on harnessing the advantages of AI while proactively addressing its ethical risks to safeguard academic integrity (Khatri & Karki, 2023).

Recent studies highlight growing ethical concerns surrounding the use of artificial intelligence in higher education. Slimi and Carballido (2023), through an analysis of global AI ethics frameworks including those by UNESCO and the European Commission, identify algorithmic bias, lack of transparency, and the potential displacement of human educators as key challenges. The use of biased datasets in areas such as admissions and assessment can reinforce social and gender inequalities. The authors stress that transparency, accountability, and robust data governance are essential for responsible AI deployment. They conclude that AI should complement, rather than replace, human judgement to preserve ethical standards, academic integrity, and the public purpose of higher education.(Slimi & Carballido, 2023).

NEP 2020 and artificial intelligence

A recent study by Jamunadevi, Kasthuri, and Thamilmanni (2025) examines the impact of artificial intelligence on higher educational institutions in India during the implementation of the National Education Policy (NEP) 2020. The study highlights that NEP 2020 places strong emphasis on digital transformation, technological innovation(Sheth, J. D. ,2024), machine learning, skill-oriented learning, and outcome-based education, all of which are central to the integration of AI in higher education. Using secondary data from official bodies such as the University Grants Commission, AICTE, the Ministry of Education, and the Ministry of Statistics and Programme Implementation (Varghese, N. V., & Khare, M. ,2021), the study employs basic statistical and regression tools to analyse institutional performance. The

findings indicate that AI adoption has enhanced the global competitiveness of Indian higher education institutions by strengthening areas such as digital inclusion, student mobility, internships, and opportunities for higher studies. However, the study also notes that effective AI integration requires sustained policy support, institutional readiness, and equitable access to digital infrastructure to ensure that the benefits of AI-driven education are widely shared.

Methods and Materials

This research adopts a qualitative, descriptive, and analytical research design and is based exclusively on secondary data sources. The study does not involve any primary data collection, surveys, interviews, or sampling techniques, as its objective is to develop a theoretical and conceptual understanding of how AI is diversifying the aims of higher education.

The materials used for this study include peer-reviewed journal articles, academic books, conference proceedings, policy documents, and institutional reports related to artificial intelligence, higher education, employability, and ethics. Key policy documents such as National Education Policy (NEP) 2020, along with reports from organizations like UGC, AICTE, UNESCO, and reputed international journals, were consulted.

A systematic literature review method was employed to identify, analyze, and synthesize existing research. The collected literature was examined using thematic analysis, focusing on core themes such as changing educational aims, skill formation, employability, curriculum transformation, and ethical concerns. This approach enables a critical evaluation of existing knowledge while identifying gaps for future research.

Conclusion

The rapid expansion of artificial intelligence has significantly transformed higher education by reshaping its aims, practices, and institutional priorities. As demonstrated in this study, AI-driven technologies are accelerating the shift from traditional, rote-based learning models toward skill-oriented, outcome-based, and lifelong learning frameworks. While higher education has historically emphasized degrees and theoretical knowledge, the increasing demand for practical competencies and adaptability has reduced the standalone value of formal qualifications without relevant skills. It can be said that artificial intelligence is emerging as a double sword on one hand. It is the reason for the changing higher educational aims and a reason for divergence between the required skills and actual skills acquired by the students earlier through higher education. However, its integration raises concerns such as job displacement, algorithmic bias, lack of transparency, and threats to academic integrity, which may reinforce social inequalities if not addressed. Therefore, ethical and responsible use of AI is essential.

The study concludes that AI should support, not replace, human judgment. A balanced, human-centered approach with strong policies and ethical safeguards is necessary to enhance educational quality while preserving core values and integrity.

References

1. Aspiring Minds. (2025). National employability report: Graduates. Aspiring Minds Research Cell.
2. Chu, L., Wang, X., & Zhang, Y. (2022). Artificial intelligence in higher education: A review of the top 50 most cited articles (1996–2020). *Educational Technology Research and Development*, 70(4), 1895–1918. <https://doi.org/10.1007/s11423-021-10051-0>

3. Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: The state of the field. *International Journal of Educational Technology in Higher Education*, 20(1), 1–22. <https://doi.org/10.1186/s41239-023-00392-8>
4. Hamburg, I. (2025). Preparing workforce for generative AI use through reskilling, upskilling, and embracing lifelong learning. In ICERI2025 proceedings (pp. 2765–2772). IATED.
5. Hinojo-Lucena, F. J., Aznar-Díaz, I., Cáceres-Reche, M. P., & Romero-Rodríguez, J. M. (2019). Artificial intelligence in higher education: A bibliometric study. *Education Sciences*, 9(4), Article 285. <https://doi.org/10.3390/educsci9040285>
6. Jamunadevi, R., Kasthuri, R., & Thamilmanni, R. (2025). Artificial intelligence and its impact on higher educational institutions in India during NEP 2020 regime. *International Journal of Economic Practices and Theories*, 23–32.
7. Khatri, B. B., & Karki, P. D. (2023). Artificial intelligence (AI) in higher education: Growing academic integrity and ethical concerns. *Nepalese Journal of Development and Rural Studies*, 20(1), 1–7.
8. Kuleto, V., Ilić, M., Dumangiu, M., Ranković, M., Martins, O. M., Păun, D., & Mihoreanu, L. (2021). Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions. *Sustainability*, 13(18), Article 10424. <https://doi.org/10.3390/su131810424>
9. Ma, Y., & Siau, K. L. (2018). Artificial intelligence impacts on higher education. In *Proceedings of the International Conference on Digital Transformation*.
10. Ministry of Education. (2019). All India survey on higher education (AISHE) 2018–19. Department of Higher Education, Government of India.
11. Ministry of Education. (2024). All India survey on higher education (AISHE) 2021–22. Department of Higher Education, Government of India.
12. Ministry of Statistics and Programme Implementation. (2023). Periodic labour force survey (PLFS) 2022–23. Government of India.
13. Ocaña-Fernández, Y., Valenzuela-Fernández, L. A., & Garro-Aburto, L. L. (2019). Artificial intelligence and its implications in higher education. *Journal of Educational Psychology – Propósitos y Representaciones*, 7(2), 553–568. <https://doi.org/10.20511/pyr2019.v7n2.273>
14. Petropoulos, G. (2018). The impact of artificial intelligence on employment. *Intereconomics*, 53(4), 121–127. <https://doi.org/10.1007/s10272-018-0738-2>
15. 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(1), Article 22. <https://doi.org/10.1186/s41039-017-0062-8>
16. Slimi, Z., & Carballido, B. V. (2023). Navigating the ethical challenges of artificial intelligence in higher education: An analysis of seven global AI ethics policies. *TEM Journal*, 12(2), 654–663.
17. Tariq, M. U. (2026). AI-driven curriculum design in higher education: Frameworks for future-ready learning ecosystems. In *AI education strategies for future-proofing curriculum design* (pp. 21–46). IGI Global Scientific Publishing.
18. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education. *International Journal of Educational Technology in Higher Education*, 16, Article 39. <https://doi.org/10.1186/s41239-019-0171-0>
19. Tripathi, S., & Rosak-Szyrocka, J. (Eds.). (2024). *Impact of artificial intelligence on society*. CRC Press.

20. Fan, S., & Muyunda, G. (2025). Integrating Artificial Intelligence in Higher Education in Zambia: A Mixed-Methods Study on Future Prospects and Challenges. *Futurity Education*, 5(3), 210-232.
21. Majumder, S., & Misra, B. (2024). AI-Empowered Industrial Relations. *Artificial Intelligence*.
22. Ali, I., Nguyen, K., Ali, A. M., & Cui, T. (2025). Human–AI collaboration in knowledge ecosystems: a multidisciplinary review, integrative framework and future directions. *Journal of Knowledge Management*, 1-22.
23. Jembu, J. P., & Balang, R. V. (2025). Artificial intelligence adoption in nursing students' academic writing: A qualitative study. *Teaching and Learning in Nursing*
24. Azoury, N., & Hajj, C. (2024). Digital transformation in higher education: Best practices and challenges.
25. Berisha Qehaja, A. (2025). Strategic integration of artificial intelligence solutions to transform teaching practices in higher education. *foresight*, 27(5), 970-991.
26. Zhao, G., Li, M., Long, Z., & Fan, H. (2025). Unlocking AI potential in primary mathematics: Teachers' technological pedagogical readiness in China. *Acta Psychologica*, 260, 105558.
27. Sheth, J. D. (2024). An analytical study on moonlighting among academicians working at the higher educational institutions of selected districts of saurashtra region (Doctoral dissertation, Gujarat Technological University).
28. Tmanova, L. (2025). Professor's Use of Artificial Intelligence Technology for Student Creativity Enhancement (Doctoral dissertation, Capella University).
29. Aljuaid, H. (2024). The impact of artificial intelligence tools on academic writing instruction in higher education: A systematic review. *Arab World English Journal (AWEJ) Special Issue on ChatGPT*.
30. Cando, D. A. F., Rodríguez, L. E., Torres, A. G., & Gómez, J. D. G. (2026). Artificial Intelligence in Higher Education: Opportunities, Challenges and Ethical Implications. *Technology Rain Journal*, 5(1).
31. Misra, P. K., & Sabharwal, N. S. (2025). India Higher Education Report 2024.
32. Choudhary, P., Satpathy, S., Dagur, A., & Shukla, D. K. (Eds.). (2025). *Recent Trends in Intelligent Computing and Communication: Volume 1*. CRC Press.
33. Uğur, S. (Ed.). (2026). *Transforming Education with Singularity Technologies: Lifelong Learning from Childhood to Adulthood*. CRC Press.
34. Zhou, Y. (2024). An Exploratory Study on the Impact of Generative AI on Student Learning in Higher Education. University of Washington.