



Artificial Intelligence (AI) in Higher Education: Growing Academic Integrity and Ethical Concerns

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Abstract

Artificial intelligence (AI) is scaling rapidly in higher education globally. Considering the increasing significance of artificial intelligence in higher education (AIHEd) and the absence of a comprehensive review on it, this paper delves into the evolving landscape of artificial intelligence in higher education (AIHEd), its academic integrity and ethical concerns. The study has applied qualitative approach by using literature review as a research design and method to facilitate the aim of the study. The analysis of the paper reveals that AI has the potential to make a significant contribution to enhancing teaching and learning experiences, improving productivity and efficiency, as well as fostering inclusivity and accessibility. On the contrary, the increasing utilization of AI in higher education raises the concerns about academic integrity and ethical issues, as it has the potential to lead to plagiarism, impede critical thinking, suppress creativity, and erode originality in teaching, research, and scholarship. Hence, upholding the integrity of scientific research requires a rigorous commitment to ethical and academic principles, placing human intelligence and critical thinking at the forefront of the research process. The advancement of artificial intelligence in higher education not only brings significant advantages, but also poses challenges to the fundamental principles, methodologies, standards, ethical considerations and academic integrity in both teaching and research. As a result, the primary focus should be on embracing the opportunities and benefits that arise from this advancement and effectively addressing any potential risks and challenges.

Keywords: Artificial intelligence, academic integrity, ethical concerns, higher education

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1. Introduction

Artificial intelligence (AI) can be defined as the ability of man-made agents to successfully perform tasks that are generally associated with human intelligence (Paudel & Ghimire, n. d.). Baker and Smith (2019) provide an extensive definition of artificial intelligence (AI): ‘Computational systems that exhibit cognitive functions, commonly associated with human intelligence, particularly focused on learning and solving complex problems’.

In recent years, AI is scaling rapidly in higher education globally. Although, artificial intelligence (AI) is not a new concept; it has been in use for about 70 years. However, in the near future, it is expected to have significant impacts in various aspects of human life (Dhawan & Batra, 2020). AI refers to the combination of computer technology, machine learning, information and communication technology advancements, and computers. It enables computers to execute tasks that are almost identical to those of humans. Artificial intelligence has been widely used in education, keeping pace with the acceptance and application of new technologies in the field (Chen, et al., 2020). AI that can be learned from existing content to generate new, realistic content is based on supplied data without repetition.

In education, AI has been seen to have already begun initiating new teaching and learning solutions that are currently under trial and undergoing restructuring in different contexts (Bostrum, 2017). The term artificial intelligence in Education (AIED) describes the application of AI technologies or programs in educational environments to support decision-making as well as teaching- learning (Hwang et al., 2020). The integration of AI in higher education presents the opportunity for deeper learning. AI enables personalized learning, catering to individual students’ pace and proficiency. It encourages deeper understanding rather than rote memorization. The role of technology is not only in equipping students with information and communications technology (ICT) skills but also in achieving quality education, free from the constraints of location and time, and to encourage curiosity, creativity and collaboration (Akinwalere & Ivanov, 2022).

AIHed has the capacity to enhance collaborative learning by offering adaptive group formation mechanisms based on individual learner profiles. Moreover, it can assist in cultivating online group dynamics and in amalgamating discussions, which can be utilized by an educator to guide students towards the objectives and goals of the course (Zawacki-Richter et al., 2019).

Various international reports indicate that artificial intelligence in education (AIED) is an emerging discipline in the realm of educational technology. Despite its existence for approximately three decades, educators continue to lack clarity on how to effectively harness the pedagogical benefits of AI on a larger scale and how it can significantly influence the teaching and learning process in higher education (Akinwalere & Ivanov, 2022). However, artificial intelligence in Higher Education (AIHed) is an evolving discipline that can be used more and more in the coming years. It does not only spur innovation and improvements in higher education but also presents plenty of new challenges for teaching, research and scholarship along with ethical issues, academic integrity and originality (DuBose & Marshall, 2023). The significant impact of AI applications in higher education is increasing, and concerns about academic integrity, ethics, and originality are becoming more prevalent as well. Thus, AI in higher education raises new challenges for educators and policy makers. Several of those challenges relate to trust and to shaping a trustworthy use of AI. With this consideration, this paper aims to explore the current state of artificial intelligence in higher education (AIHed), as well as the concerns of academic integrity and ethics.

2. Materials and Methods

This investigation was carefully designed to focus on research publications collected from the most widely used web-based databases (Zhang, & Aslan, 2021). The database is highly selective, including related journals in both social and natural sciences. The literature review was extracted from multiple sources by using reliable online

search engines (Khatri, 2022). Multiple rounds of searches were conducted on the source database using different combinations of key words and search strategies by using Boolean operators such as “AI” OR “generative AI” OR “artificial intelligence”, AND “education” OR “higher education” “teaching AND/OR learning” “research” “challenges” OR “pitfalls” AND “opportunities” OR “benefits”, “ethical concerns” OR “ethical issues” AND “academic integrity” OR “academic trust”. The search engine of electronic databases such as Google scholar, Scopus, Elsevier, Sage, Emerald Insights, Springer, Web of science, Willey, JSTOR, Directory of Open Access Journal (DOAJ) were used to access and retrieved the data.

3. Thematic Discussions

The focus of the thematic discussion has been on how AI can be used to support teaching learning, and research in higher education while ensuring scholarly standards and maintaining academic integrity. The significant impact of AI application is raising in higher education in one hand and another hand, academic integrity, ethical issues and originality are growing concerns in academia. Thus, the paper has reviewed and analyzed the existing state of AI in higher education concerning academic integrity and ethical issues.

3.1. Existing state of AI in higher education

Artificial intelligence (AI) possesses the potential to have a significant impact on educational activities (Abugre, 2021). The use of AI technologies is becoming a viable approach for institutions to save funds and enhance efficiency and workflows very rapidly. The potential for AI to address more intricate and consequential tasks is expanding. AI has the capability to function as an exceptional aide in the development of curriculum, generating study materials, examples, lesson plans, presentations, assignments, assessment rubrics, and various other resources (Abugre, 2021). The emergence of AI has prompted educational institutions to deviate from conventional assessment practices

and transition towards holistic evaluation approaches that foster authenticity and lifelong learning. Although this transition undoubtedly enhances the quality of assessment, it also entails an increased workload for faculty in terms of communication with staff and students, the implementation of diverse assessment methods, the documentation of assessment results, and other related responsibilities. The potential of AI-enabled applications lies in their ability to facilitate a shift from a “one size fits all” approach to technology, towards the scalable implementation of personalized and responsive learning experiences (Rivers & Holland, 2022; Chen et al., 2020; Tapalova & Zhiyenbayeva, 2022).

Diversity, equity, and inclusion (DEI) have been regarded as crucial objectives at numerous educational institutions in the pursuit of achieving high-quality education. This implies that educators must ensure that students with diverse educational backgrounds, requirements, and preferences have equal access to meaningful and fair learning opportunities, as well as timely assistance and support (Ali, 2022; Nguyen, 2023). However, artificial intelligence (AI) has the potential to overcome geographical and financial barriers, enabling students in remote or underserved areas to access the same exceptional education as those in more affluent regions (Sanatore, 2023). In the context of a substantial student cohort and learners attending classes from various geographical locations, instructors face a substantial workload involving time-consuming tasks such as grading assessments, providing feedback, and assigning collaborative project groups, leaving them with limited time to personalize the learning experiences (Ali, 2022). AI technology possesses the capability to aggregate and analyze extensive amounts of institutional data, thereby generating comprehensive insights from these disparate data points (Kuleto, et al., 2021).

AI can play a significant role in enhancing teaching and learning experiences, bolstering productivity and efficiency, and fostering inclusivity and accessibility (Sanatore, 2023). The use of artificial intelligence offers students of different age groups, academic levels

and socioeconomic backgrounds opportunities to enhance learning experiences and improve academic achievements. Artificial intelligence technologies play a pivotal role in the development of personalized learning pathways (Tapalova & Zhiyenbayeva, 2022). AI allows the use of different teaching methods effective for each student, taking into account the strengths, weaknesses, talents and academic problems of each learner. Therefore, it is imperative for educational institutions to meticulously plan and integrate AI while ensuring its responsible and equitable utilization.

Recently, there has been a significant focus on the term “adaptive learning system” which highlights the objective of enhancing the learning experience of individual students by adjusting various elements of the learning systems. These elements include user interfaces, learning content, and learning paths, all of which are tailored to the specific needs and progress of each learner (Essa, 2016; Xie et al., 2017, 2019). By harnessing the potential of AI and emerging technologies, educators can establish superior learning environments that are all-encompassing, adaptable, and responsive to the needs of every individual student (Nguyen, 2023).

In line with the discussion, an emergence of artificial intelligence (AI) in educational settings offers unprecedented opportunities for streamlining operations, optimizing workflows, and fostering personalized learning experiences. While AI’s potential to revolutionize assessment methods is promising for promoting authenticity and inclusivity, it also brings with its greater responsibility for faculties. Moreover, the imperative of diversity, equity, and inclusion (DEI) underscores the need for equitable access to AI-powered learning opportunities, particularly in remote or underserved areas (Roshanaei et al., 2023). Despite challenges associated with workload and personalization, AI’s ability to analyze large amounts of data offers opportunity to improve teaching practices and support student success. Therefore, the responsible integration of AI in education is essential, requiring careful planning and implementation to ensure ethical considerations

and equitable access to learning opportunities (Nguyen et al., 2023). By harnessing the potential of AI in a thoughtful and inclusive manner, educators can cultivate dynamic learning environments that cater to the diverse needs of every student, thereby advancing the quality and accessibility of education.

3.2. Growing academic integrity and ethical concerns of AI use in higher education

Artificial intelligence (AI) has gained immense popularity, but it has also brought forth new challenges and concerns in academia (Okaiyeto et al., 2023). Regardless of the many opportunities and benefits, the use of AI in higher education especially academic teaching, research and scholarship raises concerns about ethical issues, pedagogical concerns and academic integrity, equally it raises questions on authenticity and originality of its contents, as it can potentially lead to plagiarism and a lack of creativity in teaching, learning, research and scholarship.

3.3. How does AI affect academic integrity?

AI is raising both opportunities and challenges in the context of academic integrity. AI-generated content may make it difficult to distinguish between original work and content created by AI, posing challenges for academic institutions in upholding academic honesty (Michel-Villarreal, et al., 2023). The reliance on AI for generating written works may discourage critical thinking and the development of independent ideas among students. The potential for bias in AI-generated content is another concern, as the algorithms used may reflect the biases present in the training data, leading to biased or inaccurate information being produced (Ferrara, 2023; Labajová, 2023). The use of AI in grading and evaluation processes may also raise concerns about fairness and transparency, as the algorithms used may not be fully understood or accessible to students, potentially impacting the objectivity of assessments.

3.4 Ethical concerns

Academia have paid close attention to the ethical issues raised by the use of AI in higher education. The integration of artificial intelligence (AI) in higher education raises significant ethical concerns and challenges related to academic integrity on AI generated contents, data, citations, as well as their validity, reliability and accuracy. The use of AI-generated text in scientific research raises ethical issues such as transparency, bias, informed consent, privacy, and accountability (Dowling, & Lucey, 2023; Liebrez et al., 2023). However, the adoption of artificial intelligence in education (AIED) has led to increasing ethical risks and concerns regarding several aspects such as personal data and learner autonomy. Despite the recent announcement of guidelines for ethical and trustworthy AIED, the debate revolves around the key principles underpinning ethical AIED (Nguyen et al., 2023). Research scholars must be transparent while using AI-generated information and disclose any limitations or biases (Lund & Wang, 2023). Moreover, AI models may replicate biases from their training datasets, affecting the objectivity of scientific research (Mhlanga, 2023). Moreover, ensuring the privacy of sensitive information and accountability in the use of AI-generated text is crucial for maintaining research integrity (Zhuo et al., 2023). It emphasizes the importance of addressing these ethical considerations to uphold the standards of scientific research. In the same line, maintaining the integrity of scientific research necessitates strict adherence to ethical and academic principles, with human intelligence and critical thinking at the forefront of the research process. With the growth of AI in higher education is not only greatly benefiting, but also currently facing challenges to its core principles, methods, norms and ethics in teaching and research. Moreover, the critical concerns necessitate the diligent fact-checking of AI-generated content, accountability assignment for such information, and transparent disclosure of generative AI utilization in scholarly or scientific work (Ali, 2022). Thus, the priority should be to embrace

the opportunities presented by this development and optimally manage any associated risks. The proliferation of AI in academia has led to the publication of numerous AI ethics guidelines and policy documents, reflecting public concerns over the potential negative societal impacts of AI (Chan, 2023). The application of AI and the ethical implications of AI technologies in higher education is both equally important and need to be taken into consideration, along with the significance of addressing biases, guaranteeing data privacy, fostering accessibility and equity, and promoting transparency.

4. Conclusion and Implications

Artificial intelligence (AI) can play a significant role in enhancing teaching learning experiences by improving productivity and efficiency, and promoting inclusivity and accessibility. Therefore, it is important for institutions to carefully plan and integrate AI while ensuring its responsible and equitable use. By harnessing the power of AI and new technologies, faculty can create better learning environments that are inclusive, flexible, and responsive to every student. The application of AI is likely to encompass ethical concerns, academic integrity, data accuracy, and possible hindrances to teaching learning as well as research and scholarship in higher education. The priority should be to embrace the opportunities presented by this development and optimally manage any associated risks. Therefore, universities need to promote and enforce academic integrity policies that address these concerns and educate academia about ethically responsible AI use. These findings recommend the necessity of addressing ethical issues and maintaining academic integrity when it comes to the use of AI in higher education which is the need of modern academia.

Competing Interests

The authors declare that they have no competing interests.

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