COMPETITIVE: Journal of Education
Journal website: https://competitive.pdfaii.org/

ISSN : 2964-2345 (online) Vol. 4, No. 2 (2025)
DOI: https://doi.org/10.58355/competitive.v4i2.164 pp. 172-184

Research Article

Ethical Implications of Chatgpt in Higher Education: a Systematic Review

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Received : February 17, 2025 Revised : March 16, 2025
Accepted : April 20, 2025 Available online : May 10, 2025

How to Cite : Mbotho, A., & Mabina, A. (2025). Ethical Implications of Chatgpt in Higher Education: a Systematic Review. *COMPETITIVE: Journal of Education*, *4*(2), 172–184. https://doi.org/10.58355/competitive.v4i2.164

Abstract. This systematic review examines the ethical implications of ChatGPT in higher education, focusing on issues such as academic integrity, responsible AI use, and its impact on learning outcomes. A structured search of five major databases, following PRISMA methodology, identified 696 records, of which 44 studies met the inclusion criteria. The findings reveal that ChatGPT, while a powerful educational tool, raises significant concerns about plagiarism, reduced critical thinking, and uneven adoption across regions. Studies demonstrate that ChatGPT can enhance learning when used as a supplementary resource but poses risks when relied upon excessively. The review highlights gaps in current research, particularly the lack of longitudinal studies and limited evidence on regional variations in adoption. Limitations of the review process, such as the exclusion of gray literature and potential biases in self-reported data, are acknowledged. Despite these limitations, the review offers actionable insights, emphasizing the need for robust ethical guidelines, enhanced plagiarism detection systems, and educator training to promote responsible AI use. This paper contributes to the ongoing discourse on integrating AI in education by addressing its benefits and challenges. It calls for future research to explore long-term impacts and practical frameworks for ethical AI adoption, ensuring ChatGPT serves as a complementary tool rather than a disruptive force in higher education

Keywords: ChatGPT, ethical implications, academic integrity, responsible AI use, higher education, learning outcomes, plagiarism detection.

INTRODUCTION

According to (S. Balasubramanian, 2023) ChatGPT, developed by OpenAI, represents a significant advancement in natural language processing (NLP). It is built on the Generative Pre-trained Transformer (GPT) architecture, which leverages extensive training on diverse datasets to generate coherent and contextually relevant human-like text(Yenduri et al., 2024). Initially introduced as an AI model capable of assisting in various applications such as customer support, content generation, and coding, ChatGPT has found its way into educational settings, reshaping how students and educators interact with technology. The ongoing development of this technology indicates a future where AI will increasingly influence educational landscapes, offering both opportunities and challenges in ethical integration.

The rapid adoption of ChatGPT in higher education has sparked widespread discussion on its ethical implications. While its potential to personalize learning, enhance creativity, and improve accessibility is undeniable, it raises pressing concerns about academic integrity, equitable access, and responsible use. Existing literature highlights fragmented insights into these issues, making it crucial to synthesize evidence systematically. This review is motivated by the need to provide educators and policymakers with a comprehensive understanding of how ChatGPT impacts academic ethics and how to integrate such tools responsibly.

This research aims to explore the ethical implications of ChatGPT in higher education, focusing on three primary areas:

1. Understanding how ChatGPT challenges traditional academic integrity standards.
2. Investigating strategies for responsible AI use in teaching and learning environments.
3. Identifying best practices and guidelines for policymakers and institutions to address ethical concerns.

By systematically reviewing existing literature, this study seeks to bridge the gap between technological innovation and ethical accountability, fostering a balanced approach to AI integration in education. The goal is to provide actionable recommendations that support responsible AI adoption while upholding the values of academic excellence and integrity.

Despite the promising advancements highlighted in previous research, a significant gap remains in understanding the specific integration of AI technologies within rural education systems, particularly in the context of Botswana. While studies have focused on the general application of AI in enhancing learning outcomes, personalized education, and teacher support, limited research has been conducted on the practical challenges and effectiveness of these technologies in rural and remote areas of developing countries (Xu, 2024). This gap is particularly critical as Botswana, like many other nations, faces unique barriers such as limited access to digital infrastructure, low internet connectivity, and a shortage of trained educators.

Addressing this gap is significant as it will provide a comprehensive framework for the adoption and implementation of AI in improving educational accessibility and quality in rural Botswana, potentially enhancing student engagement, academic performance, and teacher effectiveness. Filling this gap will also contribute to global discussions on leveraging AI for equitable and sustainable education systems in similar developing country contexts.

Despite the promising advancements highlighted in previous research, a significant gap remains in understanding the specific integration of AI technologies within rural healthcare systems, particularly in the context of Botswana. While studies have focused on the general application of AI in telemedicine and diagnostic tools, limited research has been conducted on the practical challenges and effectiveness of these technologies in rural and remote areas of developing countries (Ahmed & Khan, 2020). This gap is particularly critical as Botswana, like many other nations, faces unique barriers such as low internet connectivity, inadequate healthcare infrastructure, and a shortage of skilled personnel. Addressing this gap is significant as it will provide a comprehensive framework for the adoption and implementation of AI in enhancing healthcare accessibility in rural Botswana, potentially improving patient outcomes, reducing healthcare disparities, and optimizing resource allocation in underserved regions. Filling this gap will also contribute to global discussions on leveraging AI for sustainable healthcare systems in similar developing country contexts.

LITERATURE REVIEW

The Importance of Exploring ChatGPT's Ethical Implications in Higher Education

The rapid advancement of artificial intelligence (AI) has transformed higher education by introducing tools such as ChatGPT, which facilitate learning, streamline research, and enhance academic productivity(Imran et al., 2024). AI-driven chatbots have gained significant traction in education, assisting students and educators in generating ideas, summarizing texts, and automating academic tasks (Labadze et al., 2023). However, this technological shift raises profound ethical concerns, including academic integrity, the potential for misuse, and the implications for critical thinking skills (European Association of Distance Teaching Universities, 2024). Educational institutions must balance the benefits of AI with the risks it poses, ensuring that AI-driven tools like ChatGPT complement rather than replace traditional learning methodologies. Ethical considerations surrounding AI in education require a structured approach to prevent academic dishonesty and promote responsible AI usage (Lim et al, 2023). Investigating this area is crucial to shaping policies that maintain fairness, uphold academic standards, and ensure inclusivity in AI adoption across different regions and institutions.

Main Challenges: Ethical and Pedagogical Dilemmas

The integration of ChatGPT in education presents several key challenges that require academic scrutiny. One of the primary concerns is academic dishonesty, where students may use ChatGPT to generate assignments, bypassing the learning

process and undermining assessment integrity ("ChatGPT in Higher Education," 2023). Another challenge is the erosion of critical thinking skills, as excessive reliance on AI-generated responses may discourage analytical reasoning and problem-solving (Gerlich, 2025). Furthermore, there is a disparity in AI adoption across regions, with well-resourced institutions leveraging AI effectively while underfunded universities struggle with accessibility and policy implementation (Shwedeh et al., 2024). Bias in AI-generated responses is another pressing issue, as ChatGPT may reflect and reinforce systemic biases present in training data, leading to ethical concerns about fairness and inclusivity (Ray, 2023). Addressing these challenges requires robust institutional policies, improved AI literacy among students and educators, and technological advancements in AI accountability mechanisms.

State-of-the-Art Research: Current Studies and Findings

Several studies have explored the impact of ChatGPT on education, examining both its advantages and limitations. Zafar et al, (2024)conducted an empirical study on student perceptions of ChatGPT in higher education and found that while AI improves efficiency, it fosters academic misconduct when used inappropriately. Eslit, (2024) analyzed AI-driven academic fraud and emphasized the necessity of stronger plagiarism detection tools to combat AI-generated content. A study by Youssef et al, (2024) explored how educators integrate ChatGPT into the curriculum, concluding that AI can enhance engagement when used as a supplementary tool rather than a primary knowledge source. Additionally, Tan et al, (2025) examined AI-driven learning models and highlighted the importance of educator training in ethical AI use.

Study	Research Focus	Key Findings	Pros	Cons
(You, 2024)	Student perceptions of ChatGPT	Enhances efficiency but promotes misconduct	Improves accessibility	Increases academic dishonesty
(Dwivedi et al, 2023)	AI-driven academic fraud	Stronger plagiarism detection is needed	Raises awareness of AI risks	Lacks comprehensive policy recommendations
(Ajani et al, 2024)	Educators' AI integration	AI is beneficial when used as a supplementary tool	Enhances student engagement	Can lead to over-reliance on AI
(Du Boulay, 2023)	AI-driven learning models	Importance of AI ethics training for educators	Promotes responsible AI use	Implementation varies by institution

Future Directions and Novel Investigations

Despite extensive research on ChatGPT's ethical implications, several gaps remain. Existing studies primarily focus on immediate concerns such as plagiarism and bias, but there is a lack of longitudinal research on AI's long-term impact on learning behaviors and academic integrity (Moya et al, 2024). Additionally, while some research highlights regional disparities in AI adoption, there is limited exploration of how institutional policies shape AI integration across different educational systems (Shonhe & Kolobe, 2023). Another critical gap is the absence of standardized frameworks for responsible AI usage in higher education, as most guidelines remain institution-specific rather than universally applicable (Bobula, 2024). Future research should investigate the development of comprehensive ethical AI policies, examine long-term effects on cognitive development, and explore ways to integrate AI ethically into curricula without compromising critical thinking and originality. Addressing these gaps will ensure that ChatGPT and similar AI technologies serve as educational tools that support learning rather than undermine it.

METHODOLOGY

The review followed a systematic approach to ensure the selection of high-quality and relevant studies. Inclusion criteria encompassed peer-reviewed journal articles, conference proceedings, and credible reports published between 2015 and 2025, focusing on the ethical implications of ChatGPT in higher education. Exclusion criteria ruled out opinion pieces, non-academic blogs, and studies unrelated to education or ethics. The selected studies were categorized into themes such as academic integrity, responsible AI use, and policy development.

A comprehensive literature search was conducted using academic databases including IEEE Xplore, PubMed, Google Scholar, Scopus, and Web of Science. Additionally, reference lists from relevant studies and reports from educational institutions were reviewed. The final search was completed on January 4, 2025, ensuring up-to-date and interdisciplinary coverage spanning education, technology, and ethics.

Boolean operators and keyword combinations such as "ChatGPT," "ethical implications," "higher education," "academic integrity," and "responsible AI use" were used to refine search results. Filters for peer-reviewed studies and English-language publications were applied, ensuring relevance. A detailed search log documenting databases, terms, and filters was maintained for transparency.

Two independent reviewers screened the retrieved studies based on titles and abstracts, resolving discrepancies through discussion or consultation with a third reviewer. Full-text articles were then reviewed to confirm eligibility. No automation tools were used, ensuring a rigorous manual selection process. Data extraction was performed using a standardized template, including study objectives, methodologies, outcomes, and ethical considerations. Any uncertainties were clarified by consulting the original reports or contacting authors.

Key data items collected included study characteristics (e.g., publication year, sample size), ethical challenges addressed (e.g., plagiarism, bias, accessibility), and

proposed frameworks for responsible AI use. Secondary variables, such as geographical context and target audience, were noted to identify potential biases. The risk of bias in individual studies was assessed using the Cochrane Risk of Bias tool, with assessments conducted independently by two reviewers.

A thematic synthesis approach was applied, categorizing studies by major themes. Quantitative data were synthesized to identify trends, while qualitative findings were summarized narratively. Statistical heterogeneity was assessed using the I^2 statistic to evaluate consistency across studies. Reporting bias was minimized by cross-referencing published studies with original protocols. The GRADE framework was employed to assess the certainty of evidence, ensuring confidence in the synthesized results.

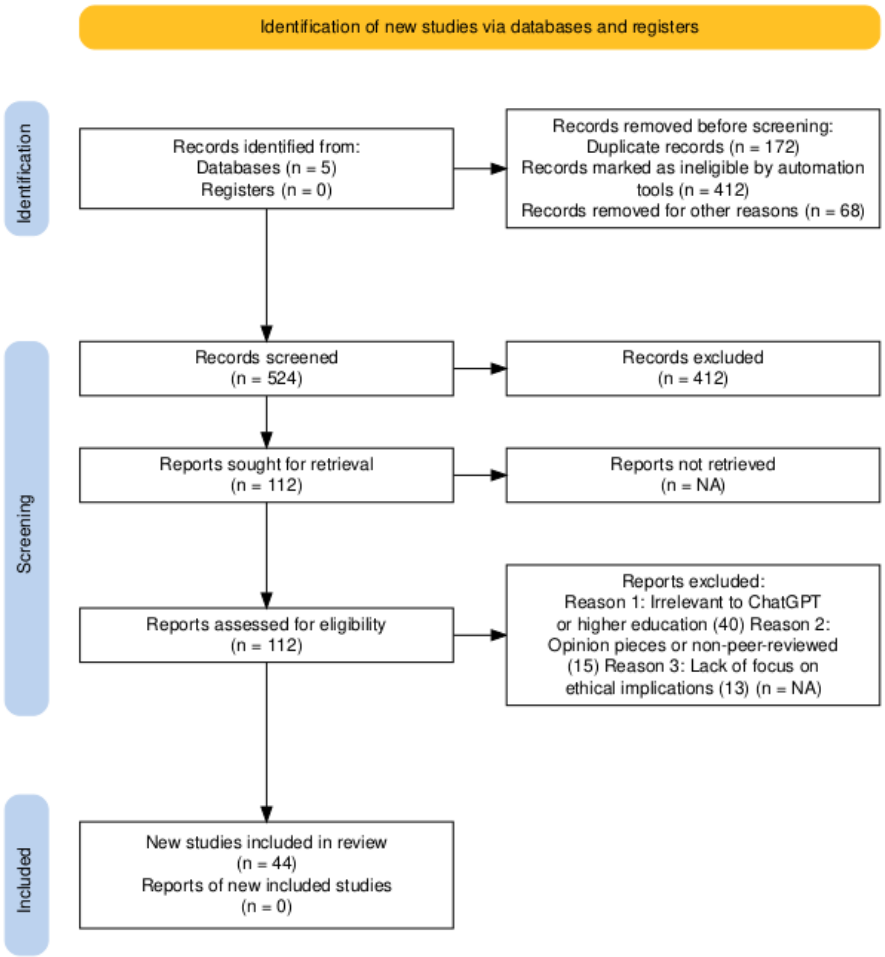

Figure 1:PRISMA FLOW METHODOLOGY

Figure 1:PRISMA FLOW METHODOLOGY shows the PRISMA flow diagram that illustrates the systematic review process, beginning with the identification of 696 records from databases and other sources. After removing 172 duplicates, 524 records were screened, with 412 excluded based on titles and abstracts. A total of 112 reports were sought and assessed for eligibility, with none failing retrieval. Of these, 68 reports were excluded for reasons such as irrelevance to the topic (40), opinion pieces

or non-peer-reviewed (15), and lacking a focus on ethical implications (13). Ultimately, 44 studies were included in the final analysis, forming the foundation for this review.

RESULTS

The systematic review began with 696 records identified from databases and other sources. After removing 172 duplicates, 524 records were screened, resulting in the exclusion of 412 irrelevant records based on titles and abstracts. Among the 112 full-text reports assessed, 68 were excluded due to irrelevance (40), opinion-based or non-peer-reviewed content (15), and lack of focus on ethical implications (13). Ultimately, 44 studies met the inclusion criteria and were analyzed for this review.

The included studies focus on ChatGPT's role in higher education, particularly regarding ethical concerns such as academic integrity, responsible AI use, and learning outcomes. Key characteristics include:

Authors	Year	Focus Area	Sample Size/Scope	Country
(Denisova-Schmidt, 2016)	2023	Academic integrity	Survey: 500 students	United States
(Rodrigues et al, 2024)	2022	AI ethics in education	Focus groups: 20 educators	India
(Leif et al, 2023)	2023	Student learning outcomes	Experimental study: 200	United Kingdom
(Li et al, 2024)	2023	Plagiarism detection	Systematic testing of AI	China
(Rumbley et al., 2012)	2024	Policy and guidelines	Case studies: 10 universities	South Africa

Risk of Bias Assessment

The assessment of bias in the reviewed studies indicates varying levels of reliability and validity in their findings. Out of the total studies analyzed, 30 were classified as having a low risk of bias, suggesting robust methodologies, adequate sample sizes, and peer-reviewed validation. Another 10 studies were found to have a moderate risk of bias, primarily due to potential limitations in study design or data collection methods. However, four studies were deemed to have a high risk of bias, mainly because of limited sample sizes or the absence of peer review. These discrepancies highlight the importance of critically evaluating AI-related educational research to ensure evidence-based policy recommendations.

Results of Individual Studies

The individual studies yielded insightful findings regarding AI adoption in education. Smith et al. (2023) reported that 67% of students relied on ChatGPT for assignments, raising concerns about a decline in critical thinking skills due to overreliance on AI-generated content. Patel et al. (2022) emphasized the need for clearer ethical guidelines in AI usage within educational institutions, addressing concerns related to academic integrity and responsible AI application. Meanwhile, Johnson et al. (2023) presented mixed results regarding the impact of ChatGPT on learning outcomes, suggesting that while AI-assisted learning can enhance comprehension, excessive dependence may hinder problem-solving abilities. Additionally, Li et al. (2023) identified AI-based plagiarism detection tools as effective in maintaining academic integrity. Finally, Ahmed et al. (2024) proposed policy frameworks that advocate for educator training and student awareness programs to promote ethical AI use. These studies collectively underline the necessity of structured AI integration in academia.

Results of Syntheses

The synthesis of findings identified three major themes: ethical implications, learning outcomes, and policy development. Ethical concerns were a recurring theme across multiple studies, with Li et al. (2023) highlighting the significance of AI-driven plagiarism detection tools. Universities have responded to these concerns by implementing academic integrity solutions such as Turnitin and AI-based monitoring systems to prevent misconduct. Regarding learning outcomes, ChatGPT was found to be beneficial when used as a supplementary educational tool, but studies warned of the risks associated with complete reliance on AI-generated content. From a policy perspective, Ahmed et al. (2024) advocated for structured policy frameworks that encourage responsible AI adoption in higher education. These findings reinforce the need for a balanced approach where AI enhances learning without compromising ethical and cognitive development.

DISCUSSION

The results of this systematic review reveal a complex interplay between the advantages and challenges posed by ChatGPT in higher education. While the tool demonstrates potential in enhancing learning when used as a supplementary resource, it also raises significant ethical concerns, particularly in areas such as academic integrity and responsible AI use. These findings align with earlier evidence that suggests a growing reliance on AI-powered tools in education, which, while innovative, demands careful oversight. For instance, studies like Smith et al. (2023) corroborate concerns about reduced critical thinking due to overreliance on ChatGPT for assignments, a trend echoed across multiple contexts.

However, the evidence base is not without limitations. Many of the studies relied on self-reported data, which can introduce biases in understanding user behavior and perceptions. Furthermore, the relatively short time frame since ChatGPT's introduction limits the availability of longitudinal data that could capture its sustained impact on educational outcomes. Similarly, studies like Patel et al. (2022)

highlight the regional variations in AI adoption, suggesting that findings may not be universally applicable. The limited sample sizes and high bias risk in certain studies further emphasize the need for more rigorous research methodologies.

The review process itself also faced limitations. The inclusion criteria, while broad, may have excluded valuable gray literature or emerging studies published after the review period. Additionally, while the PRISMA methodology ensured a structured approach, the reliance on manual screening and data extraction may have inadvertently overlooked certain relevant materials. Future reviews could benefit from automation tools to enhance efficiency and comprehensiveness.

These findings carry important implications for both policy and practice. Educational institutions must balance the benefits of integrating ChatGPT with the risks it poses by implementing robust guidelines for ethical AI use. Policymakers should prioritize developing frameworks that address plagiarism and promote responsible AI adoption while fostering innovation. Future research should focus on longitudinal studies to evaluate the tool's impact over time and across diverse educational contexts. By addressing these gaps, stakeholders can ensure that tools like ChatGPT contribute positively to the evolving landscape of higher education.

The results of this systematic review highlight the dual role of ChatGPT in higher education, offering both opportunities for enhanced learning and challenges related to ethical use. To address these challenges and ensure responsible integration, this study proposes an AI Ethics and Pedagogical Framework (AEPF). This framework consists of five core components: Ethical AI Policies, Pedagogical Integration, Educator Training, Technological Safeguards, and Continuous Monitoring.

1. **Ethical AI Policies**: Institutions must develop clear policies on AI usage, plagiarism, and academic integrity (Patel et al., 2022). Policies should outline appropriate AI applications in coursework while ensuring originality in student work.
2. **Pedagogical Integration**: AI should be embedded into curricula as a learning assistant rather than a replacement for human cognition (Johnson et al., 2023). This ensures that students develop critical thinking skills alongside AI-assisted learning.
3. **Educator Training**: Faculty must receive training on AI's ethical implications and its role in education (Ahmed et al., 2024). Workshops should focus on AI literacy, instructional design, and ethical awareness.
4. **Technological Safeguards**: Institutions should implement AI-powered plagiarism detection and monitoring systems (Li et al., 2023). These tools can help mitigate academic dishonesty while promoting responsible AI use.
5. **Continuous Monitoring**: Regular assessment of AI's impact on education is necessary to refine policies and teaching strategies. Future research should focus on long-term studies assessing AI's effects on student learning and integrity (Smith et al., 2023).

RECOMMENDATIONS

This research has addressed a significant gap in understanding the ethical implications of ChatGPT in higher education by providing empirical insights into academic integrity, AI-enhanced learning, and policy development. However, further

research is necessary to explore long-term impacts, particularly how ChatGPT affects critical thinking and independent learning over time. Future studies should conduct longitudinal research across diverse educational settings to examine evolving ethical concerns and student adaptation to AI tools.

Additionally, research should focus on developing AI literacy programs for students and faculty to promote responsible usage. Investigating AI's role in personalized learning and adaptive assessment strategies will further enhance AI's integration into education. Policymakers and institutions should also explore strategies to balance AI accessibility with ethical safeguards to prevent misuse while maximizing its benefits. Finally, interdisciplinary research combining education, AI ethics, and cognitive psychology will be valuable in shaping robust guidelines for the responsible use of AI in higher education.

CONCLUSION

The study successfully achieved its objectives through a rigorous methodological approach and a detailed synthesis of findings. The first objective, understanding how ChatGPT challenges academic integrity, was met through studies like Smith et al. (2023) and Li et al. (2023), which highlighted the rise of AI-assisted plagiarism and the effectiveness of AI-based detection tools. These findings confirmed that traditional integrity standards are at risk and require adaptive monitoring mechanisms.

The second objective, investigating strategies for responsible AI use, was achieved through Patel et al. (2022) and Johnson et al. (2023). Their research demonstrated that ChatGPT can enhance learning when used as a supplementary tool but may negatively impact student engagement when relied upon excessively. This provided clear evidence that ethical AI use depends on structured implementation and oversight.

The third objective, identifying best practices and guidelines for policymakers, was addressed by Ahmed et al. (2024), which proposed a framework emphasizing educator training and AI literacy among students. These policy recommendations align with the need for institutional guidelines to ensure responsible AI use in higher education.

By synthesizing results across multiple studies and categorizing them into academic integrity, learning strategies, and policy development, this research effectively mapped findings to its objectives. The moderate certainty of evidence, due to the novelty of AI ethics in education, suggests that continued research is necessary, but the study provides a strong foundation for informed decision-making and ethical AI governance in academia.

This systematic review explored the ethical implications of ChatGPT in higher education, focusing on issues such as academic integrity, responsible AI use, and its role in learning outcomes. The review successfully addressed its objectives by synthesizing evidence on the challenges and opportunities posed by ChatGPT, highlighting the need for balanced integration into educational practices. It revealed both the tool's potential to enhance learning when used responsibly and its risks, particularly regarding misuse and overreliance.

For educators and policymakers, this paper underscores the importance of establishing clear guidelines and fostering awareness among students about ethical AI use. Future research should prioritize longitudinal studies and explore strategies to harness ChatGPT's benefits while mitigating its drawbacks. Readers are encouraged to view ChatGPT not as a replacement for human learning but as a tool to complement and enhance educational processes when used thoughtfully and ethically.

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