



# Exploring Ethical Dilemmas of AI Generative Tools Among Higher Education Students: A Systematic Review

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## Abstract

In the present age, the influx of AI-driven generative tools such as ChatGPT, most especially in the higher institution context, is alarming. Students are faced with the challenges of making ethical decisions regarding the possible options of whether to use AI generative tools to do their assignment or use the conventional search engine, which seems to be more ethical but rigorous and time-consuming. With this background, this systematic review seeks to address several ethical issues faced by higher education and how they influence their decision-making ability while using AI-driven generative tools. This systematic review explores the scope and nature of ethical dilemmas in using AI-driven generative among higher education students by synthesising secondary research (e.g., systematic reviews) indexed in the Web of Science, Scopus. This review paper, guided by the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) framework, reviews empirical studies of AI generative tools solely for higher education, which were published in English between 2020 and July 2024. Seventeen out of the 413 studies accessed during the research were included in the scope of the research. Studies that were conducted with AI-generate tools or that examined the ethical dimension of possible educational intervention from the perspective of any study group/sample were included as well, and any studies that focused on higher education students' ethical challenges while using AI were equally included. Ethical issues arising in the studies were examined in the context of the ethical framework determined by [1]. The general characteristics of the studies included in the scope of the research, research designs, technologies used, and ethical issues that arise are presented. The findings from this study will provide a comprehensive understanding of the ethical dilemmas higher education students face using AI generative tools, most especially while doing their assignments.

**Keywords:** Ethics, Ethical dilemma, AI generative tools, education, ChatGPT  
First Section

## 1. Introduction

The promise of generative artificial intelligence (AI) tools to transform higher education by strengthening educational practices, boosting learning outcomes, and offering students individualized support is becoming more widely acknowledged [2]. Numerous academic uses for these tools exist, such as individualized instruction, automated evaluation and feedback generation, virtual assistants, content production, support for research, and more [2]. Teachers can assist students in gaining the necessary abilities to use AI effectively in a variety of academic and professional contexts by incorporating generative AI technologies into curricula and instructional procedures [3]. It can improve student performance, engagement, and accomplishment, but proper use calls for ethical concerns, teacher preparation, and successful implementation techniques [4]

The effects of generative AI (GenAI) tools on students in higher education are the subject of several studies. According to research, students are typically favourable and well-informed about GenAI, seeing its potential to transform academic research and offer tailored learning support (Al-Zahrani, 2023; Chan & Hu, 2023). Students say that utilizing GenAI to broaden the scope of projects, increase productivity, and help with writing and brainstorming has been beneficial [5], [6], [7]

However, concerns have also been raised over privacy, accuracy, ethical dilemmas, and the impact on human growth [7], [8]. Additionally, there have been concerns expressed about the possibility of student abuse of genAI technologies and their capacity to help students pass specific university courses [9], [10]. There is moderate use of generative AI in higher education, which has an impact on traditional assessments and raises questions regarding academic integrity [11]. For example, ChatGPT presents issues with academic integrity in higher education. However, according to some observers, it can improve student learning and change the way that teaching and evaluation are done [12]. Because of this, there is a current discussion in academic contexts about the possible uses of genAI tools in higher education [13] and the extent to which students should use these tools [14] with differing opinions.

The above discussion makes clear the opportunities and difficulties associated with generative AI in higher education [15], [16]. This means that even with all of the advantages that students could experience from adopting genAI, they still have to deal with moral and ethical dilemmas. They are forced to choose between giving up their sense of dignity and moral principles in order to take advantage of the priceless chances that genAI presents, putting them in a precarious ethical situation.

On the other hand, an ethical dilemma is characterized by a circumstance in which a person must decide between two or more ethical mandates that contradict one another, and each has the potential to cause unfavourable consequences for one or more people [17] It entails selecting between two options that are incompatible with one another, and both have the potential to cause moral harm [18]. People must make morally right decisions or equally wrong decisions when faced with ethical dilemmas when picking one forbids choosing the other [19]. Additionally, there are instances in which there is an obvious ethical choice that is difficult to carry out due to external

circumstances, such as competing interests [20]. On these occasions, ethical problems arise.

### 1.1 Problem Statement

Professionals often describe ethical dilemmas as conflicts of interest, where professional regulations clash with personal moral values [21]. These dilemmas are extemporaneous, and decisions regarding them can be guided by thoughtful analysis [22]. The resolution of ethical dilemmas depends on the specific situation at hand and cannot be generalized to all ethical challenges [23]. Ethical dilemmas typically involve competing ethical principles, where adhering to one principle may conflict with another [24]. Therefore, in the context of the present study, university students could be faced with competing interests, such as enjoying the enormous benefits provided by genAI or adhering to the ethical principle concerning academic integrity. It should be noted that handling ethical dilemmas requires sensitivity, experience, and sound judgment, qualities that cannot solely be acquired through technical knowledge [25]. It is, therefore, important for students to navigate these dilemmas thoughtfully, considering conflicting ethical directives and potential outcomes to make decisions that align with ethical principles and academic responsibilities.

Due to the importance of the issues of ethics and moral values in education, several studies have been conducted to investigate how the use of genAI can harm university students' moral values and integrity. For instance, [26] stated that while AI technologies offer opportunities to enhance learning experiences, concerns about ethical implications have been raised [27]. There are concerns about the ethical use of AI in education [28]. Incorporating AI in educational settings raises questions about maintaining academic integrity, especially with AI-generated content [29]. Another author asserted that there is a need to address ethical issues surrounding AI technologies [27]. It was added from a study that Generative AI can produce text that appears to be written by a human author, potentially casting doubt on the integrity of online assessments and reverting to handwritten examinations [30]. GAI raises concerns about academic integrity and biases within AI models, highlighting the need for fairness and equity in AI-based assessments for international students [31]. While GAI can enhance teaching, learning, and evaluation, it also poses risks to data privacy, academic integrity, and teacher-student relationships [32]. When personal moral principles conflict with professional requirements, ethical dilemmas are sometimes referred to as conflicts of interest by professionals [33]. Although these selections are made on the spur of the moment, careful consideration of the options can help [22]. [34] assert that the solution to an ethical dilemma is contingent upon the particular circumstances involved and cannot be applied universally to all ethical dilemmas. Usually, ethical dilemmas entail conflicting ethical concepts, such that upholding one may make it impossible to follow another [35]. Thus, in the context of the current study, university students may have to choose between upholding the moral precept of academic integrity and reaping the vast rewards offered by genAI. It should be highlighted that resolving ethical quandaries calls for sensibility, wisdom, and good judgment—qualities that cannot be obtained only by technical education[25]. As a result, students must

approach these moral conundrums with consideration, weighing competing moral obligations and possible results in order to make choices that are consistent with moral standards and academic obligations.

Numerous studies have been done to look into how using genAI can affect university students' moral integrity and values because moral values and ethics are important topics in education. For example, [26] noted that although AI technologies present chances to improve educational experiences, questions concerning their ethical consequences have been brought up [27]. The moral use of AI in education is a source of worry [28]. Maintaining academic integrity is a concern when integrating AI into educational environments, particularly when using AI-generated content [29]. According to a different source, ethical concerns around AI technologies must be addressed. According to a study, generative AI can create writing that looks to have been produced by a human author. This could raise concerns about the validity of online tests and lead to a return to handwritten exams [30]. GAI highlights the need for justice and equity in AI-based assessments for international students by raising questions about academic integrity and biases within AI models [31]. Although GAI has the potential to improve teaching, learning, and assessment, there are hazards to academic integrity, data privacy, and teacher-student relationships [32].

There is an influx of empirical studies linking genAI with ethical challenges for higher institution students. Some of these studies provided practicable solutions to this issue. Therefore, one of the main rationales for this systematic review is to identify the ethical issues identified by previous studies and synthesize them in a single document. This systematic review also seeks to explore several strategies suggested by previous studies to resolve the ethical dilemma faced by university students while using genAI. Finally, this study equally seeks to provide a list of directives and potential outcomes that will assist students in making meaningful decisions that will align with ethical principles and academic integrity and, at the same time, allow them to benefit from genAI to foster their academic and professional development.

## 2. Methodology

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses [36], [37] were followed in conducting this systematic review. We carried out a thorough search for systematic reviews written by academics from Asian institutions and published in journals related to hospitality and tourism. The current work offers an “explanation and elaboration” of the PRISMA reporting checklist elements that are followed to conduct systematic reviews in the social sciences by adhering to the methodologies of the above mentioned works.

### 2.1 Eligibility and Exclusion Criteria

The systematic review process consists of four main steps: identification, screening, eligibility, and inclusion. As a result, the first thing this section does is provide

the predetermined eligibility and suitability criteria for the important procedures of screening out and excluding non-eligible components. The requirements for eligibility include relevant empirical data from relevant journals as well as pieces from the literature. After that, they will be taken out, examined, and put to use. Article reviews, book series, novels, book chapters, brief surveys, and conference papers are among the things that are excluded. The second area of emphasis for the systematic review is the ethical conundrum raised by university students' use of GenAI. As a result, only indexed papers in fields like education, social sciences, artificial intelligence, and the humanities are included.

Moreover, only English-language publications were considered in the systematic review. Consequently, items not available in the three languages and publications from the hard sciences are excluded. Thirdly, one of the characteristics is the time frame from 2020 to 2024. Finally, if a study satisfies the aforementioned preset requirements, it will be accepted regardless of where it was done.

## 2.2 Systematic review process

The present study commenced in June 2024 and used a four-phase systematic review methodology (see Figure 1). In essence, the first step required using a thesaurus check to identify important keywords that would be used in the identification procedure. This stage also included terms that were used in earlier research' search results. Notably, terms associated with moral dilemmas surrounding students' use of GenAI were included in the identification phase (Table 1). After deleting four duplicates, 413 articles in total were found to be eligible for review in the databases Scopus and Web of Science. In order to focus the papers' keyword search in the second phase, or screening procedure, earlier, unrelated studies were rejected. During this stage, 335 materials were eliminated, leaving only 78 materials. The next step, referred to as the eligibility procedure, was reading the complete articles. As per the qualifying criteria, 34 resources were deemed ineligible for inclusion in the process due to their lack of connection to moral principles in education or language learning and teaching. Meanwhile, due to restriction of access, and language differences 27 articles were excluded from the eligible ones. The inclusion phase is the last and fourth stage. For the review, a total of seventeen papers were chosen because they were appropriate for qualitative synthesis.

**Table 1.** Search keywords.

<i>Database</i>	<b>Database</b>
<i>SCOPUS</i>	("AI" OR "artificial intelligent") AND ("Higher education" OR "university") AND ("education" OR "training" OR "student" OR "learning") AND ("academic integrity" OR "moral values")
<i>WEB OF SCIENCE</i>	"Moral" Or "Values" Or "Academic integrity" And "University" Or "Higher Education" or "Institutions" And "Students" And "Generative Artificial

Intelligence”  
 (“AI or Artificial Intelligence”) AND (“Higher Education” or “University”) AND (“Moral” OR “Academic Integrity”) AND (Students)

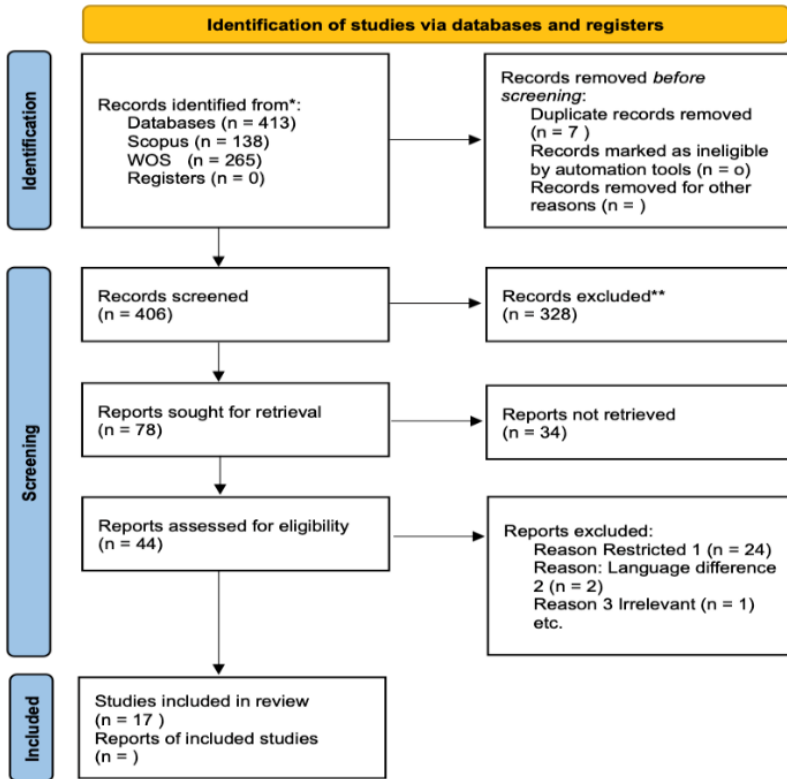


Fig. 1. The PRISMA model flow chart

### 3. Discussion

#### 3.1 Ethical Issues Around the Usage of GenAI in Higher institution

##### Copyright and Intellectual Property Infringement.

The scholarly paper examined a number of issues that raise moral concerns for students using GenAI in higher education. The most well-known ones are intellectual property infringement and copyright violations. It all comes down to using someone else's intellectual property without permission and in a way that goes against the own-

er's rights. This GenAI is another person's intellectual property that has been exploited without permission. This emphasises how assisting AI tools are being used unethically in learning and research settings. For instance, concerns over the validity and ownership of the submitted work are raised by the problem of students using ChatGPT for copyright and intellectual property infringement. The issue here is the correct attribution of intellectual property. One of the main issues with generative AI, according to [38] is its capacity to draw inspiration from unpublished internet resources without giving due credit. Authorship and copyright issues will arise as a result, as noted [39].

### **Breach of Academic Integrity**

Academic integrity violations, or acts that compromise the moral principles and honesty required in academic contexts, are another important aspect of the ethical dilemma raised by students' use of GenAI in higher education. The majority of universities have virtually completely banned these technologies because of the possible risks that GenAI poses to academic integrity, as noted by [40]. According to [41], this problem can result in a deterioration in academic integrity when students see AI as a substitute for their intellectual labour. As a result, the outsourcing of tasks to artificial intelligence has the potential to erode academic integrity through actions like plagiarism, the blind acceptance of content produced by AI, and a lack of creative ideas.

### **Issues of Authenticity and Originality**

Concerns about originality and authenticity are essential to upholding integrity and trust in a variety of fields and have a big influence on how valuable and credible student work is. Regarding this matter, [42] confirmed that when students become involved in utilising GenAI, it calls into question the originality of their thoughts and challenges the authenticity of their work. Finding a middle ground between learning and sincerity. In order to improve learning outcomes while maintaining students' sense of success and lowering transactional distance, it is important to integrate AI tools appropriately. The main area of concern is the possible influence on students during the learning process.

Meanwhile, suppose it needs to be properly maintained, or pupils are allowed to use it without being checked. In that case, these changes run the danger of undervaluing academic credentials and increasing student academic misbehaviour [39]. The problem of trust inevitably surfaces when novelty and genuineness are lacking.

### **Erosion of digital communication trust**

With the ability to produce incredibly lifelike images, audio snippets, and videos, the emergence of GenAI technology intensifies worries about deepfakes and false infor-

mation, posing moral dilemmas about deceit and undermining confidence in digital communication [43]. Cybercriminals can even mimic family members' voices using short audio samples, creating false emergencies. The prevalence of deepfake pornography produced by AI has increased exponentially, impacting individuals worldwide, such as students, educators, colleges, and universities[44], [45]. Products are being falsely promoted by digitally cloned celebrities like Taylor Swift and Tom Hanks, and phoney politicians are featured in a lot of edited videos on the internet. It is becoming more difficult to discern between real and fake content due to the growing sophistication of AI technology [39].

**Reduced sense of personal accountability**

Because students may see AI as a substitute for their intellectual labour, they may feel less personally accountable for maintaining academic integrity as a result of their departure from the traditional academic rigour. As a result, the outsourcing of tasks to artificial intelligence has the potential to erode academic integrity through actions like plagiarism, the blind acceptance of content produced by AI, and a lack of creative ideas [41]

**Table 2.** Result

<b>Ethical Dilemma Issues</b>	<b>Strategies to Resolve Issues</b>	<b>Directives for Ethical Decision</b>
Copyright and Intellectual Property Infringement	GenAI Integration and Adaptation	Understanding the Principles for Detecting Trustworthy Content
Breach of Academic Integrity	Creation of Robust GenAI Policies and Guidelines	Prioritization of student’s well-being concerning genAI
Issues of Authenticity and Originality	Creation of an Innovative Assessment Method	Awareness of potential risks and practical mitigation
Erosion of digital communication trust	Creation of a Character development program	Maintaining Pedagogical foundation
Reduced sense of personal accountability		

**3.2 Strategies to Resolve Issues**

From the literature reviewed, several strategies were discovered to counter some of these GenAI ethically created issues as can be viewed from table 2 above.



## **GenAI Integration and Adaptation**

There has been a lot of discussion and interest in the application of generative artificial intelligence (GenAI) in higher education. Numerous scholarly investigations and writings have emphasised the possible advantages, difficulties, and consequences of implementing GenAI technologies in academic environments. Students now have access to more adaptable and customisable resources because of the availability of GenAI products like CoPilot, ChatGPT, and Gemini, which are specifically designed for learners and courses [46]. These resources could improve education and open up new channels for involvement and assistance from students. However, the usage of GenAI in higher education begs the concerns of how much students should use these technologies and what other uses there might be for GenAI in academia [47]. The practical ramifications and difficulties of incorporating AI technologies like ChatGPT into the teaching and learning process must be carefully considered by educators [48].

A comprehensive ban on LLM-based tools at the institutional level is neither practical nor enforceable, according to [40] on the situation, GenAI in higher education coupled with the identified challenges in determining whether they consider the use of such tools to be a breach of academic integrity, and the potential benefits of LLM-based tools. It is thought that the integration of AI-supported digital tools into the classroom setting is extremely likely in the future, despite the possible dangers to academic integrity outlined by various research. As such, HEIs must take this into consideration when developing future policies. In order to effectively fulfil the changing demands of students in the digital age, educators must not only continually adapt but also exercise oversight and take ethical considerations into account while integrating GenAI into higher education, thereby ensuring a responsible and effective use of these technologies.

## **Creation of Robust GenAI Policies and Guidelines**

To guarantee ethical and efficient implementation, the use of Generative Artificial Intelligence (GenAI) tools in higher education requires the creation of strong policies and guidelines. Evidence-based recommendations are necessary to help students develop their digital literacy, critical thinking, and responsible usage of GenAI technology [49]. Higher education institutions must have easily comprehensible policies that specify how language models should be used in the classroom [50]. Additionally, in accordance with suggested frameworks, university rules for the moral application of GenAI are essential [51]. In order to adjust to the changing AI landscape in education, it is critical to advocate for regulations that acknowledge and incorporate GenAI tools in academic contexts [52].

Qadhi et al. (2024) [53] conclude that while artificial intelligence (AI) offers significant benefits for advancing education, it also presents risks that require careful regulation to uphold ethical norms and academic integrity. The implications underscore the importance of moral standards, AI literacy, and human-centred AI technologies, affecting legislators, educators, and AI developers. However, [54] argue that

regulating GenAI in higher education demands a nuanced approach that acknowledges the technology's potential benefits and the imperative to preserve academic integrity. Therefore, a one-size-fits-all approach to GenAI integration in higher education may not be appropriate. Instead, when formulating guidelines and strategies for GenAI use, organizations should consider cultural diversity. In summary, these sources highlight the critical need for universities to establish comprehensive rules and procedures for the responsible integration of GenAI tools.

### **Creation of an Innovative Assessment Method**

The creation of a novel evaluation technique is essential to addressing the issues raised by Generative Artificial Intelligence (GenAI) in higher education. Concerns regarding academic integrity, plagiarism, and the need for new assessment techniques have been brought up by the incorporation of GenAI in educational contexts [55]. Traditional assessment techniques need to be updated due to the growing sophistication of AI-generated solutions [56]. To successfully change assessment processes, educators must partake in professional development activities to advance their knowledge of assessment, artificial intelligence, and digital literacy (Xia, 2024). Moreover, explicit university regulations addressing concerns about authorial identity, academic norms, and ethical considerations are necessary when using GenAI in evaluation [57]. In conclusion, a comprehensive strategy that incorporates professional development for educators, ethical considerations, responsible use of AI tools, and a reevaluation of traditional assessment practices to align with the changing educational landscape is required to develop an innovative assessment method to combat GenAI in higher education.

### **Creation of a Character development program**

It is imperative to take into account a number of factors mentioned in the literature while creating a character development programme for the application of generative AI (GenAI) in higher education. First and foremost, evidence-based standards and rules that support the responsible use of GenAI technologies in higher education are needed [49]. According to [49] educational activities ought to prioritise elevating students' aspirations for achievement, cultivating positive values, and reducing the potential hazards linked with GenAI instruments. The ethical ramifications of deploying GenAI in education must also be taken into account, especially with regard to authorial identity, academic integrity, and university policies [57]. To help educators and students use GenAI products appropriately, clear usage norms and ethical considerations must be established.

Students' opinions, character-building exercises, ethical issues, and the encouragement of appropriate GenAI use should all be taken into account when creating a character development programme for the use of AI in higher education. Furthermore, the health and welfare of teachers, support personnel, and pupils have grown more and

more important [39]. Educational institutions can effectively use GenAI tools to improve teaching and learning experiences while assuring ethical and responsible usage by incorporating these elements within the programme.

### **Directives for Ethical Decision**

It is essential to comprehend the guiding principles for identifying reliable material in order to make moral decisions about the application of Generative Artificial Intelligence (GenAI). A crucial component of ethical concerns in AI is trustworthy AI, particularly in industries like business, education, and healthcare. Ethical standards are important in AI applications, according to several research. According to [58], these values—beneficence, nonmaleficence, autonomy, fairness, and explicability—are crucial for fostering confidence in AI systems.

The use of GenAI in education presents ethical issues with over-reliance, plagiarism, and the muddled identity of authors [49], [57]. Furthermore, an ethical viewpoint is required to guarantee the appropriate and ethical use of the technology given that GenAI is democratising mental health knowledge and practice[59]. Addressing computational problems, maintaining trust, compliance, privacy, and ethics become more crucial as GenAI's capabilities advance [60]. Because GenAI has the ability to propagate prejudices and reinforce biases in educational settings, its implementation must take ethics into account[61]. Therefore, using GenAI ethically across diverse areas requires a grasp of and adherence to ethical values. Through the use of beneficence, nonmaleficence, autonomy, justice, and explicability, stakeholders can collaborate to create reliable AI systems that put morality first and encourage technology use in a responsible manner.

### **Prioritization of students' well-being concerning GenAI**

When determining whether to outlaw the use of GenAI in higher education, it is imperative to take into account the ethical ramifications and difficulties of incorporating AI into the classroom. When evaluating student performance and making important decisions, AI must be used responsibly and ethically. Transparency, responsibility, fairness, and authenticity are just a few of the ethical factors that must be taken into account [62], [63]. The use of cutting-edge AI technology by educational institutions has brought up a growing number of ethical and pedagogical considerations, underscoring the importance of transparent and accountable procedures [64].

In addition, university students' mental health is an important factor that needs to be considered. Research has indicated an increasing number and intensity of mental health problems among college students, underscoring the need of resolving mental health concerns to enhance students' general welfare [65], [66]. Students' academic performance and general success can be greatly impacted by a number of factors, including psychological discomfort, anxiety, and depression [67]. It is thought that students who use GenAI tend to have lighter workloads, feel less burdened, and ulti-

mately have better mental health. The welfare of students must thus come first when making judgements about the application of GenAI in higher education. To minimise their load and make life simpler for them, this entails resolving ethical issues in AI integration and identifying and assisting students' mental health requirements.

### **Awareness of potential risks and practical mitigation**

It is critical to recognise and mitigate any potential hazards connected to the deployment of Generative Artificial Intelligence (GenAI) while making moral decisions about its application. The literature has drawn attention to ethical issues such as bias, accessibility, privacy, and the creation of false information [68], [69]. To identify and mitigate these hazards, proactive procedures like as stringent testing, validation, continuous monitoring, and adherence to ethical standards are crucial [70], [71]. Furthermore, resolving ethical issues and promoting the responsible use of AI technology can be aided by the creation of models for AI ethics best practices [72]

Moreover, it is critical to take into account computing difficulties, the volume of training data, and issues with trust, compliance, privacy, and ethics as GenAI's capabilities grow [60]. Organisations should create frameworks that prioritise stakeholder interests, carry out in-depth risk assessments, and put policies into place through staff training and recurring audits in order to successfully reduce the dangers connected with GenAI [73]. The responsible deployment of GenAI can be encouraged by keeping ethical issues in mind and putting appropriate mitigation mechanisms in place. This will guarantee that any potential dangers are recognised and dealt with as soon as possible.

### **Maintaining Pedagogical foundation**

Upholding a pedagogical basis is essential for guaranteeing an efficient and responsible application of Generative Artificial Intelligence (GenAI) in higher education. According to [74], GenAI has the capacity to create interesting learning environments, simplify the process of creating educational content, and meet the needs of a wide range of students. Policymakers can develop educated rules and strategies for the responsible and effective adoption of GenAI tools by first understanding students' opinions and addressing their concerns. This will ultimately improve teaching and learning experiences in higher education [49]. Through individualised learning experiences and techniques for reducing GenAI hazards, educational programmes supporting the use of GenAI should concentrate on raising expectancies for success and cultivating positive value attitudes [49].

As GenAI shapes the future of academia, reflective pedagogical examination is essential to evidence-guided integration [75]. Raising awareness of disruptive change, educating faculty, altering teaching and assessment methods, collaborating with students, transferring AI learning literacies, closing the digital divide, and carrying out applied research are the main strategies for incorporating GenAI into higher education

[76]. By positively addressing study scenarios outside of traditional learning methodologies and fostering the development of higher-order abilities and information acquisition, GenAI can improve teaching and learning [55]. Therefore, incorporating GenAI into higher education calls for a careful strategy that takes into account the pedagogical underpinnings to guarantee that the technology is effectively applied to improve teaching and learning experiences while addressing potential dangers and problems.

#### **4. Limitations**

The current study has a number of shortcomings. One of them, for instance, is about the decision to use journals as a focal point for the scholarly production in education. Although journals are valuable venues for sharing research, it's vital to keep in mind that books, conference papers, and book chapters are other ways that educational knowledge can be shared. Furthermore, it should be kept in mind that as education transcends academic disciplines, articles about education can also be found in journals that aren't specifically focused on education (e.g. sociology, anthropology, geography, marketing, etc.). Furthermore, it is clear from this study's exclusive focus on English-speaking systems journals that they do not adequately represent the journals of other non-English-speaking nations[77].

#### **5. Conclusions**

The results of this study showed that the majority of earlier research focused on a single issue, such as how applying GenAI may affect higher education or related fields. Only a few studies have offered a thorough analysis of the problems, countermeasures, and ethical decision-making around the use of GenAI in higher education. Therefore, this study adds to the body of knowledge in higher education by providing an overview of the applied findings across many subjects and the in-depth analytical techniques. These aspects have never been found before. The detected and summarised findings offer various insightful insights for academic scholars in addition to the theoretical contribution. In a similar vein, a variety of data analysis techniques can enhance the findings and broaden the scope of future research. Lastly, a conceptual model is suggested for additional research.

According to this study, there are a number of areas where GenAI in higher education has to be addressed. According to the survey, there was a steady change in the subjects related to fostering critical thinking in higher education as a result of technology integration. Future research topics could benefit from examining the intersection of several educational domains with artificial intelligence. The majority of papers lacked a theoretical basis in terms of themes and applicable theories/concepts. Therefore, in order to improve theoretical rigour, future research can think about including a theoretical framework. Further research on copyright and intellectual property infringement in connection to the use of GenAI is also recommended. It is advised that future research use mix method research to have a perfect blend and robust outcome that

will be more dependable, as the majority of the examined studies used either qualitative or quantitative methodologies.

With respect to the three main focuses of this research, practically speaking, it has helped advance the ethical use of Generative AI (GenAI) in higher education by influencing the ethical standards of academic research and publication. First and foremost, it guarantees that universities improve their methods for detecting plagiarism so as to distinguish between information produced by AI and genuine work. It raises ethical concerns about appropriate attribution, encouraging researchers to disclose the instances in which artificial intelligence (AI) tools were utilised to produce material. This ensures correct attribution and recognition of the contributions made by AI systems. The paper also calls for higher education to offer revised standards for assessing the reliability and novelty of research produced by AI. It offers guidance on how instructors and students at higher education institutions should follow stringent data privacy laws while utilising AI for research in order to safeguard confidential data and guarantee moral data handling. In order to preserve openness and confidence in study findings, it makes researchers and students utilising AI more sensitive to the need to reveal the type and source of data used to train AI models. Lastly, since the introduction of GenAI tools is an unavoidable reality in higher education, it encourages institutions of higher learning to accept student use of GenAI by adjusting it to the cultural context of society and to provide ethical guidelines and principles that direct students' usage of GenAI in an ethically compliant manner. In order to teach researchers and students about the responsible use of AI in academic settings, it has also encouraged institutions to include talks on AI ethics and moral development in their training programmes for research ethics.

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## References

- [1] M. Ryan and B. C. Stahl, "Artificial intelligence ethics guidelines for developers and users: clarifying their content and normative implications," *Journal of Information, Communication and Ethics in Society*, vol. 19, no. 1, pp. 61–86, Mar. 2021, doi: 10.1108/JICES-12-2019-0138.

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<sup>1</sup> If EquinOCS, our proceedings submission system, is used, then the disclaimer can be provided directly in the system.

- [2] K. Nikolopoulou, "Generative Artificial Intelligence in Higher Education: Exploring Ways of Harnessing Pedagogical Practices with the Assistance of ChatGPT," *International Journal of Changes in Education*, vol. 1, no. 2, pp. 103–111, Apr. 2024, doi: 10.47852/bonviewijce42022489.
- [3] O. Pavlenko and A. Syzenko, "Using ChatGPT as a Learning Tool: A Study of Ukrainian Students' Perceptions," *Arab World English Journal*, vol. 1, no. 1, pp. 252–264, Apr. 2024, doi: 10.24093/awej/chatgpt.17.
- [4] B. Eager and R. Brunton, "Prompting Higher Education Towards AI-Augmented Teaching and Learning Practice," *Journal of University Teaching and Learning Practice*, vol. 20, no. 5, 2023, doi: 10.53761/1.20.5.02.
- [5] Li, "Generative Artificial Intelligence in Chinese Higher Education: Chinese Undergraduates' Use, Perception, and Attitudes," *Frontiers in Educational Research*, vol. 7, no. 4, 2024, doi: 10.25236/fer.2024.070401.
- [6] A. M. Al-Zahrani, "The impact of generative AI tools on researchers and research: Implications for academia in higher education," *Innovations in Education and Teaching International*, vol. 61, no. 5, pp. 1029–1043, 2024, doi: 10.1080/14703297.2023.2271445.
- [7] C. K. Y. Chan and W. Hu, "Students' voices on generative AI: perceptions, benefits, and challenges in higher education," *International Journal of Educational Technology in Higher Education*, vol. 20, no. 1, Dec. 2023, doi: 10.1186/s41239-023-00411-8.
- [8] K. Walczak and W. Cellary, "Challenges for higher education in the era of widespread access to Generative AI," *Economics and Business Review*, vol. 9, no. 2, pp. 71–100, Apr. 2023, doi: 10.18559/eb.2023.2.743.
- [9] S. Nikolic *et al.*, "ChatGPT versus engineering education assessment: a multidisciplinary and multi-institutional benchmarking and analysis of this generative artificial intelligence tool to investigate assessment integrity," *European Journal of Engineering Education*, vol. 48, no. 4, pp. 559–614, 2023, doi: 10.1080/03043797.2023.2213169.
- [10] K. Taylor, "Generative Artificial Intelligence and the Education Sector," *Computer (Long Beach Calif)*, vol. 56, no. 6, pp. 72–76, Jun. 2023, doi: 10.1109/MC.2023.3263576.
- [11] A. Smolansky, A. Cram, C. Radulescu, S. Zeivots, E. Huber, and R. F. Kizilcec, "Educator and Student Perspectives on the Impact of Generative AI on Assessments in Higher Education," in *Proceedings of the Tenth ACM Conference on Learning @ Scale*, in L@S '23. New York, NY, USA: Association for Computing Machinery, 2023, pp. 378–382. doi: 10.1145/3573051.3596191.
- [12] M. Sullivan, A. Kelly, and P. McLaughlan, "ChatGPT in higher education: Considerations for academic integrity and student learning," *Journal of Applied Learning and Teaching*, vol. 6, no. 1, pp. 31–40, Jan. 2023, doi: 10.37074/jalt.2023.6.1.17.
- [13] H. Yu and Y. Guo, "Generative artificial intelligence empowers educational reform: current status, issues, and prospects," 2023, *Frontiers Media S.A.* doi: 10.3389/feduc.2023.1183162.

- [14] N. Ahmad, S. Murugesan, and N. Kshetri, "Generative Artificial Intelligence and the Education Sector," *Computer (Long Beach Calif)*, vol. 56, no. 6, pp. 72–76, Jun. 2023, doi: 10.1109/MC.2023.3263576.
- [15] T. Farrelly and N. Baker, "Generative Artificial Intelligence: Implications and Considerations for Higher Education Practice," Nov. 01, 2023, *Multidisciplinary Digital Publishing Institute (MDPI)*. doi: 10.3390/educsci13111109.
- [16] B. Eager and R. Brunton, "Prompting Higher Education Towards AI-Augmented Teaching and Learning Practice," *Journal of University Teaching and Learning Practice*, vol. 20, no. 5, 2023, doi: 10.53761/1.20.5.02.
- [17] H. Gunz and S. Gunz, "Hired professional to hired gun: An identity theory approach to understanding the ethical behaviour of professionals in non-professional organizations," *Human Relations*, vol. 60, no. 6, pp. 851–887, Jun. 2007, doi: 10.1177/0018726707080079.
- [18] D. Y. B. Tan, B. C. Ter Meulen, A. Molewijk, and G. Widdershoven, "Moral case deliberation," Jun. 01, 2018, *BMJ Publishing Group*. doi: 10.1136/practneurol-2017-001740.
- [19] T. E. Godskesen, S. Petri, S. Eriksson, A. Halkoaho, M. Mangset, and Z. E. Nielsen, "The culture of hope and ethical challenges in clinical trials: A qualitative study of oncologists and haematologists' views," *Clin Ethics*, vol. 15, no. 1, pp. 29–38, Mar. 2020, doi: 10.1177/1477750919897379.
- [20] C. Gallent-Torres, A. Zapata-González, and J. L. Ortego-Hernando, "The impact of Generative Artificial Intelligence in higher education: a focus on ethics and academic integrity," *RELIEVE - Revista Electronica de Investigacion y Evaluacion Educativa*, vol. 29, no. 2, 2023, doi: 10.30827/RELIEVE.V29I2.29134.
- [21] S. C. Bon and A. J. Bigbee, "Special Education Leadership: Integrating Professional and Personal Codes of Ethics to Serve the Best Interests of the Child," 2011.
- [22] J. H. Walther, "Teaching ethical dilemmas in LIS coursework: An adaptation on case methodology usage for pedagogy," *Bottom Line*, vol. 29, no. 3, pp. 180–190, 2016, doi: 10.1108/BL-05-2016-0020.
- [23] J. F. Toti and J. L. Moulins, "Ethical sensitivity: Conceptualization and new scale development," *Recherche et Applications en Marketing*, vol. 32, no. 3, pp. 6–27, Sep. 2017, doi: 10.1177/2051570717716562.
- [24] M. Bowers and R. B. Pipes, "Influence of consultation on ethical decision making: An analogue study," *Ethics Behav*, vol. 10, no. 1, pp. 65–79, 2000, doi: 10.1207/S15327019EB1001\_5.
- [25] O. Shapira-Lishchinsky, "Ethical dilemmas in teaching and nursing: the Israeli case," *Oxf Rev Educ*, vol. 36, no. 6, pp. 731–748, 2010, doi: 10.1080/03054985.2010.503686.
- [26] L. Chen, P. Chen, and Z. Lin, "Artificial intelligence in education: a review," *IEEE Access*, vol. 8, pp. 75264–75278, 2020, doi: 10.1109/access.2020.2988510.
- [27] S. Nikolic *et al.*, "ChatGPT versus engineering education assessment: a multidisciplinary and multi-institutional benchmarking and analysis of this gener-



- ative artificial intelligence tool to investigate assessment integrity,” *European Journal of Engineering Education*, vol. 48, no. 4, pp. 559–614, 2023, doi: 10.1080/03043797.2023.2213169.
- [28] H. Gunz and S. Gunz, “Hired professional to hired gun: an identity theory approach to understanding the ethical behaviour of professionals in non-professional organizations,” *Human Relations*, vol. 60, no. 6, pp. 851–887, 2007, doi: 10.1177/0018726707080079.
- [29] R. Al-Jarf, “Students’ assignments and research papers generated by AI: Arab instructors’ views,” *Journal of Computer Science and Technology Studies*, vol. 6, no. 2, pp. 92–98, 2024, doi: 10.32996/jcsts.2024.6.2.11.
- [30] H. Zohny, J. McMillan, and M. King, “Ethics of generative AI,” *J Med Ethics*, vol. 49, pp. 79–80, 2023, doi: 10.1136/jme-2023-108909.
- [31] T. Farrelly and N. Baker, “Generative Artificial Intelligence: Implications and Considerations for Higher Education Practice,” *Educ Sci (Basel)*, 2023, doi: 10.3390/educsci13111109.
- [32] L. Ma and D. Zhao, “Prospects and Ethical Considerations of Generative Artificial Intelligence in Higher Education,” *SHS Web of Conferences*, 2024, doi: 10.1051/shsconf/202418703030.
- [33] S. Bon and A. Bigbee, “Special education leadership: integrating professional and personal codes of ethics to serve the best interests of the child,” *J Sch Leadersh*, vol. 21, no. 3, pp. 324–359, 2011, doi: 10.1177/105268461102100302.
- [34] J. Toti and J. Moulins, “Ethical sensitivity: conceptualization and new scale development,” *Recherche Et Applications en Marketing (English Edition)*, vol. 32, no. 3, pp. 6–27, 2017, doi: 10.1177/2051570717716562.
- [35] M. Bowers and R. Pipes, “Influence of consultation on ethical decision making: an analogue study,” *Ethics Behav*, vol. 10, no. 1, pp. 65–79, 2000, doi: 10.1207/s15327019eb1001\_5.
- [36] M. J. Page *et al.*, “The PRISMA 2020 statement: An updated guideline for reporting systematic reviews,” Mar. 29, 2021, *BMJ Publishing Group*. doi: 10.1136/bmj.n71.
- [37] L. Shamseer, D. Moher, M. Clarke, D. Ghersi, A. Liberati, and M. Petticrew, “Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: Elaboration and explanation,” *BMJ*, vol. 349, 2015, doi: 10.1136/bmj.g7647.
- [38] A. Bozkurt, “GenAI et al.: Cocreation, Authorship, Ownership, Academic Ethics and Integrity in a Time of Generative AI,” *Open Praxis*, vol. 16, no. 1, pp. 1–10, 2024, doi: 10.55982/openpraxis.16.1.654.
- [39] C. Rudolph, J. Ismail, and M. F. Popenici, “Higher Education’s Generative Artificial Intelligence Paradox: The Meaning of Chatbot Mania,” 2024.
- [40] M. Perkins, “Academic Integrity considerations of AI Large Language Models in the post-pandemic era: ChatGPT and beyond,” *Journal of University Teaching and Learning Practice*, vol. 20, no. 2, 2023, doi: 10.53761/1.20.02.07.

- [41] B. G. Acosta-Enriquez *et al.*, “Knowledge, attitudes, and perceived Ethics regarding the use of ChatGPT among generation Z university students,” *International Journal for Educational Integrity*, vol. 20, no. 1, pp. 1–23, 2024, doi: 10.1007/s40979-024-00157-4.
- [42] K. Sevnarayan and M. A. Potter, “Generative Artificial Intelligence in distance education: Transformations, challenges, and impact on academic integrity and student voice,” *Journal of Applied Learning and Teaching*, vol. 7, no. 1, pp. 104–114, Jan. 2024, doi: 10.37074/jalt.2024.7.1.41.
- [43] M. Suleyman and M. Bhaskar, “The Coming Wave: AI, Power and the Twenty-first Century’s Greatest Dilemma,” p. 320, 2023.
- [44] L. Kassova, “Tech bros need to realise deepfake porn ruins lives – and the law has to catch up,” *The Guardian*, Mar. 2024, [Online]. Available: <https://www.theguardian.com/global-development/2024/mar/01/tech-bros-nonconsensual-sexual-deepfakes-videos-porn-law-taylor-swift>
- [45] “Sickening new ‘deepfake porn’ trend sweeping Aussie schools,” *OECD AI Policy Observatory*, Nov. 2023, [Online]. Available: <https://oecd.ai/en/incidents/52388>
- [46] J. Magrill, “Preparing educators and students at higher education institutions for an AI-driven world,” *Teaching & Learning Inquiry the ISSOTL Journal*, vol. 12, 2024, doi: 10.20343/teachlearningqu.12.16.
- [47] K. Taylor, *Supporting students and educators in using generative artificial intelligence*. Ascilite Publications, 2023. doi: 10.14742/apubs.2023.538.
- [48] M. Romero, “Generative artificial intelligence in higher education,” pp. 129–143, 2024, doi: 10.1007/978-3-031-55272-4\_10.
- [49] C. K. Chan and W. Hu, “Students’ voices on generative AI: perceptions, benefits, and challenges in higher education,” *International Journal of Educational Technology in Higher Education*, vol. 20, 2023, doi: 10.1186/s41239-023-00411-8.
- [50] T. Ioku, “Acceptance of generative AI in higher education: a latent profile analysis of policy guidelines,” 2024, doi: 10.21203/rs.3.rs-4515787/v1.
- [51] A. Barrett, “Not quite eye to A.I.: student and teacher perspectives on the use of generative artificial intelligence in the writing process,” *International Journal of Educational Technology in Higher Education*, vol. 20, no. 1, 2023, doi: 10.1186/s41239-023-00427-0.
- [52] R. Kumar, “Global trends in generative AI adoption: a quantitative survey of postsecondary students,” 2024, doi: 10.21203/rs.3.rs-4449928/v1.
- [53] S. M. Qadhi, A. Alduais, Y. Chaaban, and M. Khraisheh, “Generative AI, Research Ethics, and Higher Education Research: Insights from a Scientometric Analysis,” *Information*, vol. 15, no. 6, p. 325, 2024, doi: 10.3390/info15060325.
- [54] A. Yusuf, N. Pervin, and M. Román-González, “Generative AI and the future of higher education: a threat to academic integrity or reformation? Evidence from multicultural perspectives,” *International Journal of Educational Technology in Higher Education*, vol. 21, no. 1, Dec. 2024, doi: 10.1186/s41239-024-00453-6.

- [55] D. Salinas-Navarro, "Using generative artificial intelligence tools to explain and enhance experiential learning for authentic assessment," *Educ Sci (Basel)*, vol. 14, no. 1, p. 83, 2024, doi: 10.3390/educsci14010083.
- [56] A. Duane, "Can artificial intelligence complete my assessment? a student led initiative to stress test the academic integrity of university assessment using generative AI," 2024, doi: 10.4995/head24.2024.17143.
- [57] J. Duah, "How generative artificial intelligence has blurred notions of authorial identity and academic norms in higher education, necessitating clear university usage policies," *International Journal of Information and Learning Technology*, vol. 41, no. 2, pp. 180–193, 2024, doi: 10.1108/ijilt-11-2023-0213.
- [58] S. Thiebes, S. Lins, and A. Sunyaev, "Trustworthy artificial intelligence," *Electronic Markets*, vol. 31, no. 2, pp. 447–464, 2020, doi: 10.1007/s12525-020-00441-4.
- [59] Z. Elyoseph, "An ethical perspective on the democratization of mental health with generative artificial intelligence (preprint)," 2024, doi: 10.2196/preprints.58011.
- [60] L. Layman, "Generative artificial intelligence and the future of software testing," *Computer (Long Beach Calif)*, vol. 57, no. 1, pp. 27–32, 2024, doi: 10.1109/mc.2023.3306998.
- [61] G. Cooper, "Pixels and pedagogy: examining science education imagery by generative artificial intelligence," *J Sci Educ Technol*, vol. 33, no. 4, pp. 556–568, 2024, doi: 10.1007/s10956-024-10104-0.
- [62] C. Eden, "Integrating AI in education: opportunities, challenges, and ethical considerations," *Magna Scientia Advanced Research and Reviews*, vol. 10, no. 2, pp. 6–13, 2024, doi: 10.30574/msarr.2024.10.2.0039.
- [63] N. Balta, "Ethical considerations in using AI in educational research," *JORIDS*, vol. 2, no. 1, p. 14205, 2023, doi: 10.51853/jorids/14205.
- [64] B. Britton, "Digital facelift," *Ascilite Publications*, 2023, doi: 10.14742/apubs.2023.552.
- [65] C. Baik, W. Larcombe, and A. Brooker, "How universities can enhance student mental wellbeing: the student perspective," *Higher Education Research & Development*, vol. 38, no. 4, pp. 674–687, 2019, doi: 10.1080/07294360.2019.1576596.
- [66] S. Asghari, A. Seid-Mohammadi, G. Roshanaei, F. Arbabpoori, and S. Panahi, "Mental health status among Iranian medical university students: a cross-sectional study," *Journal of Education and Community Health*, vol. 9, no. 2, pp. 111–117, 2022, doi: 10.34172/jech.2022.17.
- [67] M. Islam, R. Akter, M. Sikder, and M. Griffiths, "Prevalence and factors associated with depression and anxiety among first-year university students in Bangladesh: a cross-sectional study," *Int J Ment Health Addict*, vol. 20, no. 3, pp. 1289–1302, 2020, doi: 10.1007/s11469-020-00242-y.
- [68] M. Beardsley, "A learning agreement for generative AI use in university courses: a pilot study," 2024, doi: 10.36227/techrxiv.171078030.08340862/v1.

- [69] M. McKnight, "Generative artificial intelligence in applied business contexts: a systematic review, lexical analysis, and research framework," *Journal of Applied Business and Economics*, vol. 26, no. 2, 2024, doi: 10.33423/jabe.v26i2.7040.
- [70] D. Richards, "Harnessing generative artificial intelligence to support nature-based solutions," *People and Nature*, vol. 6, no. 2, pp. 882–893, 2024, doi: 10.1002/pan3.10622.
- [71] S. Akhter, "Artificial intelligence in the 21st century: opportunities, risks and ethical imperatives," *Kuey*, 2024, doi: 10.53555/kuey.v30i5.3125.
- [72] W. Mai, "Artificial intelligence ethics best practices model for financial decision-making in Chinese financial institutions," *International Journal of Information Technologies and Systems Approach*, vol. 17, no. 1, pp. 1–18, 2024, doi: 10.4018/ijitsa.337388.
- [73] A. Adekugbe, "Navigating ethical challenges in data management for U.S. program development: best practices and recommendations," *International Journal of Management & Entrepreneurship Research*, vol. 6, no. 4, pp. 1023–1033, 2024, doi: 10.51594/ijmer.v6i4.982.
- [74] A. Ravarini, "From users to allies: exploring educator and generative AI roles in shaping the future of higher education," 2024, doi: 10.4995/head24.2024.17345.
- [75] S. Sabbaghan, "Beyond conventional teaching towards networked learning," *NLC*, vol. 14, 2024, doi: 10.54337/nlc.v14i1.8003.
- [76] G. Kurtz, "Strategies for integrating generative AI into higher education: navigating challenges and leveraging opportunities," *Educ Sci (Basel)*, vol. 14, no. 5, p. 503, 2024, doi: 10.3390/educsci14050503.
- [77] P. Mura and S. P. Sharif, "Narrative analysis in tourism: a critical review," *Scandinavian Journal of Hospitality and Tourism*, vol. 17, no. 2, pp. 194–207, 2017, doi: 10.1080/15022250.2016.1227276.

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