MAPPING GENERATIVE AI'S ETHICAL ISSUES IN HIGHER EDUCATION: A FELT-GUIDED SYSTEMATIC REVIEW

[PEMETAAN ISU ETIKA *GENERATIVE AI* DI PENDIDIKAN TINGGI: TINJAUAN SISTEMATIS BERPANDUAN FELT]

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Abstract

The pervasive integration of generative AI (GenAI) into higher education presents transformative opportunities alongside complex ethical issues that necessitate urgent scholarly attention. This study conducts a systematic literature review (SLR) following the rigorous Kitchenham protocol, analyzing 27 peer-reviewed articles published between 2023 and 2025 to comprehensively identify these ethical issues and map them against the ALT Framework for Ethical Learning Technologies (FELT). The SLR revealed seven prominent ethical concerns: (1) academic integrity and plagiarism, highlighting issues of unauthorized assistance and false authorship; (2) bias and fairness, manifested through algorithmic and linguistic biases; (3) data privacy and security, concerning unauthorized access and re-identification risks; (4) impact on critical thinking and learning outcomes, fostering over-reliance; (5) authorship, intellectual property, and copyright ambiguities; (6) misinformation, hallucinations, and deepfakes, eroding trust; and (7) broader environmental and labor impacts. Crucially, the mapping

to FELT demonstrated that these issues collectively challenge institutional accountability, necessitate responsible learning paradigms, demand greater transparency in AI operations, and underscore the imperative for care towards individuals and societal well-being. Findings indicate a nascent and fragmented institutional response globally, driven by varied stakeholder perspectives. This research recommends a multi-faceted approach: fostering comprehensive AI literacy, adopting human-centered design, developing robust and adaptive policies, ensuring system transparency and accountability, strengthening data governance, advocating for ethical AI design, and promoting interdisciplinary collaboration. This study equips higher education stakeholders to navigate GenAI's ethical landscape and uphold core educational values by synthesizing current ethical dilemmas and offering a FELT-guided framework for responsible integration.

Keywords: Generative AI; Ethical Issues; Higher Education, Systematic Literature Review (SLR), Ethical Frameworks

Abstrak

Integrasi kecerdasan buatan generatif (GenAI) yang meluas ke pendidikan tinggi menghadirkan peluang transformatif sekaligus tantangan etika yang kompleks dan memerlukan perhatian akademis yang mendesak. Studi ini melakukan tinjauan literatur sistematis (SLR) mengikuti protokol Kitchenham yang ketat, menganalisis 27 artikel *peer-reviewed* yang diterbitkan antara tahun 2023 dan 2025 untuk secara komprehensif mengidentifikasi isu-isu etika ini dan memetakannya terhadap Kerangka Kerja ALT untuk Teknologi Pembelajaran Etis (FELT). SLR ini mengungkapkan tujuh kekhawatiran etika yang menonjol: (1) integritas akademik dan plagiarisme, menyoroti isu-isu bantuan tidak sah dan kepengarangan palsu; (2) bias dan keadilan, termanifestasi melalui bias algoritmik dan

linguistik; (3) privasi dan keamanan data, menyangkut akses tidak sah dan risiko re-identifikasi; (4) dampak pada pemikiran kritis dan hasil pembelajaran, mendorong ketergantungan berlebihan; (5) ambiguitas kepengarangan, kekayaan intelektual, dan hak cipta; (6) misinformasi, halusinasi, dan *deepfake*, mengikis kepercayaan; dan (7) dampak lingkungan dan tenaga kerja yang lebih luas. Secara krusial, pemetaan ke FELT menunjukkan bahwa isu-isu ini secara kolektif menantang akuntabilitas institusional, menuntut paradigma pembelajaran yang bertanggung jawab, membutuhkan transparansi yang lebih besar dalam operasi AI, dan menggarisbawahi keharusan untuk peduli terhadap individu dan kesejahteraan masyarakat yang lebih luas. Temuan mengindikasikan respons institusional yang masih baru dan terfragmentasi secara global, didorong oleh beragam perspektif pemangku kepentingan. Penelitian ini merekomendasikan pendekatan multi-aspek: membina literasi AI yang komprehensif, mengadopsi desain yang berpusat pada manusia, mengembangkan kebijakan yang kuat dan adaptif, memastikan transparansi dan akuntabilitas sistem, memperkuat tata kelola data, mengadvokasi desain AI yang etis, dan mempromosikan kolaborasi interdisipliner. Dengan menyintesis dilema etika saat ini dan menawarkan kerangka kerja berbasis FELT untuk integrasi yang bertanggung jawab, studi ini membekali pemangku kepentingan pendidikan tinggi untuk menavigasi lanskap etika GenAI dan menjunjung tinggi nilai-nilai inti pendidikan.

Kata Kunci: Generative AI, Tantangan Etika, Pendidikan Tinggi, Tinjauan Literatur Sistematis (SLR), Kerangka Kerja Etika

Introduction

Since ChatGPT revolutionized the writing world in late 2022, generative artificial intelligence (GenAI) has ignited fierce debates about the future of human creativity and originality (Ruiz-Rojas et al., 2024).

This technology, capable of producing text, images, and other similar or superior content to human-generated output, has been widely adopted across various sectors, including education. GenAI promises extraordinary potential in higher education to revolutionize teaching and learning processes, from personalizing foreign language learning experiences and enriching literary education content to automating administrative tasks for educators (Yusuf et al., 2024). This wave of digital innovation, representing the next leap in technological capabilities, demands critical attention from academic institutions worldwide, especially concerning the development of language skills, text analysis, and cultural understanding (Pérez-Jorge et al., 2025).

Despite GenAI's immense transformative potential, its rapid and widespread adoption also poses complex and profound ethical questions and challenges, requiring critical examination and continuous attention (Barus et al., 2025; Godwin-Jones, 2024). While the literature has begun to identify and discuss various ethical issues—including academic integrity and plagiarism, algorithmic bias and fairness, data privacy and security, impact on critical thinking and learning outcomes, questions of authorship and copyright, risks of misinformation and AI "hallucinations," and broader environmental and labor impacts—these discussions often remain scattered and lack a systematic, overarching synthesis. Critically, there's a particular absence of mapping these diverse concerns against established ethical frameworks like the ALT Framework for Ethical Learning Technologies (FELT), which could provide a structured lens for understanding and addressing them.

Currently, higher education institutions are still grappling with these ethical implications. While many universities have begun formulating policies and guidelines, the responses are often fragmented and lack comprehensiveness. This fragmentation mirrors the scattered nature of ethical discussions in the literature. It is further compounded by the fact that less than 40% of higher education institutions are projected to have acceptable AI usage policies by spring 2025. It's usually unclear how these policies are developed or who participates in their creation (*2024 EDUCAUSE Action Plan: AI Policies and Guidelines*, 2024). Furthermore, existing research indicates an uneven focus on various aspects of AI ethics, with concepts such as accountability and transparency often less explored than bias (Mäntymäki et al., 2022; Tsamados et al., 2021). This knowledge gap, coupled with the "black box"

nature of many GenAI systems and a lack of transparency regarding data usage, can erode trust, perpetuate inequities, and potentially undermine the development of essential cognitive skills in students, including analytical and synthetic capabilities in humanities studies (Licht, 2024). Therefore, there is an urgent need for a comprehensive systematic review to synthesize the current understanding of these ethical issues and identify effective strategies for the responsible integration of GenAI in higher education.

Given the rapid evolution of GenAI technology and its broad implications, this research is highly relevant and crucial to undertake now (Dotan et al., 2024). This study will provide a structured and in-depth synthesis of the ethical issues emerging from applying GenAI in higher education by addressing the identified knowledge gaps. The novelty of this research lies in its comprehensive approach, which not only identifies and analyzes the primary ethical issues but also explicitly integrates the ALT Framework for Ethical Learning Technologies (FELT) as a lens to map and understand these ethical components. Using FELT will allow for a more nuanced analysis of how ethical principles can be applied in learning technology practices, providing a robust framework for evaluation and recommendations(ALT's Framework for Ethical Learning Technology (*ALT's Framework for Ethical Learning Technology (EdTechEthics Part 1)*, 2022; *FELT Resources*, 2023; *New Resources for ALT's Framework for Ethical Learning Technology*, 2023).

This research has the potential to significantly impact knowledge, practice, and policy in higher education, particularly within disciplines involving writing, language, and text analysis. By presenting a clear overview of GenAI's ethical landscape, this study will assist institutions in developing stronger and more adaptive policies, guide educators in responsibly integrating AI (including in language and literature teaching), and equip students with the necessary AI literacy to navigate an increasingly AI-driven world. Ultimately, this research aims to contribute to developing a human-centered approach to AI in education, ensuring that this technology serves human purposes and enhances the learning experience ethically (Lindsay et al., 2023).

This study aims to conduct a systematic literature review to answer two key research questions: (1) What are the ethical issues posed by generative artificial intelligence in higher education? and (2) How can

these identified ethical issues be mapped to the principles of the ALT Framework for Ethical Learning Technologies (FELT)?

This study will employ a rigorous Systematic Literature Review (SLR) following the Kitchenham protocol to achieve these objectives. This process will involve a comprehensive search of current literature from reputable scientific databases, explicit inclusion and exclusion criteria, systematic data extraction, and synthesis of findings to answer the research questions.

Methodology

This study adopts a Systematic Literature Review (SLR) methodology to comprehensively identify and analyze the ethical issues of Generative AI (GenAI) within the context of higher education. This approach was chosen for its ability to provide a rigorous, transparent, and replicable synthesis of the literature, which is crucial when reviewing a relatively novel and rapidly evolving topic like GenAI ethics. To ensure the reliability of the process, this SLR strictly follows the protocol developed by Kitchenham, which is divided into three main stages: planning, implementation, and reporting (Kitchenham & Brereton, 2013). Each stage is designed to minimize bias and maximize the relevance and completeness of the findings. The details regarding these SLR research stages are illustrated in Figure 1.

Figure 1. SLR Research Stages

Planning Stage

The planning stage constitutes the initial and crucial step in this Systematic Literature Review (SLR) methodology. The primary objectives of this research are explicitly defined to address the established research questions, namely to identify the ethical issues posed by generative artificial intelligence in higher education and to map the identified ethical

issues to the principles of the ALT Framework for Ethical Learning
Technologies (FELT).

A review protocol was established using the PICOC (Population,
Intervention, Comparison, Outcome, Context) framework to guide the
review process systematically. Table 1 elaborates on the detailed
formulation of the PICOC for this study.

Table 1. PICOC Framework

Aspect	Description
Population	Higher education institutions.
Intervention	Integration of Generative AI in various aspects of higher education.
Comparison	n/a
Outcome	Identification and analysis of ethical issues arising from the use of GenAI in higher education.
Context	Higher Education Sector.

Following the establishment of the PICOC framework, the process
continued with the meticulous formulation of the search string designed
to answer the research questions. This search string was specifically
adapted for use in the Scopus database. It served as the primary source
for this research due to its extensive coverage of peer-reviewed scientific
publications across various disciplines. The search string employed is as
follows:

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(TITLE-ABS-KEY("Generative AI" OR "Large Language Model*"
OR "LLM*" OR "AI-generated content" OR "synthetic text")
AND TITLE-ABS-KEY("ethic*" OR "moral*" OR "responsib*" OR
"fairness" OR "bias" OR "integrity" OR "privacy") AND
TITLE-ABS-KEY("higher    education"    OR    "university"    OR
"universities" OR "tertiary education" OR "academia"))
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After the search string formulation, rigorous selection criteria,
comprising inclusion and exclusion criteria, were established and detailed
in Table 2. These criteria were filters to ensure that only the most relevant
and high-quality studies were included in the review.

Table 2. Inclusion and Exclusion Criteria

Criteria	Description
Inclusion Criteria	1. Ranging since the study of Generative AI appeared on 1 January 2019 to 31 December 2025

	2. Studies that explicitly address ethical issues, ethical issues, ethical implications, or ethical concerns related to the use of generative AI in higher education contexts.
	3. Studies that are relevant to the application of GenAI in various academic functions such as learning, teaching, assessment, research, or administration in educational settings.
Exclusion Criteria	1. Not Journal
	2. Not written in English
	3. Review Paper

To ensure a systematic article selection process and identify appropriate papers for our research questions, a quality assessment checklist was developed. This checklist was based on the Critical Appraisal Skills Programme (CASP) guidelines (Long et al., 2020), chosen for its comprehensive nature as a quality appraisal tool and its widespread utility across various qualitative research designs, including those relevant to this literature review. The complete quality assessment checklist is presented in Table 3.

Table 3. Quality Assessment Checklist

No	Item Checklist
1	Is the research question clearly stated and relevant to the ethical issues of generative AI in higher education?
2	Was the research design appropriate to address the research question
3	Were the data collection methods appropriate and rigorous?
4	Was the data analysis conducted appropriately and rigorously?
5	Are the key findings clearly presented and relevant to the research question?
6	Are the findings applicable to the context of higher education institutions?
7	Are the findings supported by appropriate evidence and analysis?
8	Do the findings contribute to the understanding of ethical issues of generative AI in higher education, particularly through the lens of FELT?

To rigorously assess quality, a weighting scheme was implemented for each checklist question: 1 point for "Yes," 0.5 for "Unclear/Partial," and 0 for "No." This allowed us to calculate a maximum quality score of 8.0 for each selected paper. Only documents achieving a minimum score of 5.0 proceeded to the subsequent analysis. This 5.0 (out of 8.0) represented a 62.5% threshold, signifying that the studies met over half of the predefined quality criteria, thus ensuring a robust selection of "sufficiently good" papers for inclusion in our review.

Implementation Stage

Following the completion of the planning phase, this SLR transitioned to the implementation stage, where the established protocol was rigorously followed to identify, select, and extract data from the relevant literature.

Study Identification and Selection

Identifying and selecting studies was conducted systematically in several steps. Initially, the search string formulated in the Planning Stage was applied to the Scopus database. The initial search results were imported into the systematic literature review management software Parsifal (www.parifal.al). Parsifal was utilized to facilitate collaborative research team efforts in managing the entire literature review process, from planning to execution, by providing structured features for each stage, including protocol creation, source selection, quality assessment, and data extraction (Carrera-Rivera et al., 2022).

After the initial collection, the literature selection process proceeded in three main phases:

1. Duplicate Removal: Duplicate articles were automatically identified and removed using reference management features within Parsifal.

2. Title and Abstract Screening: Two independent reviewers independently screened the remaining articles based on their titles and abstracts to determine their relevance to the research questions and inclusion/exclusion criteria (Table 2). Articles not meeting the requirements at this stage were excluded. Conflicts between reviewers were resolved through discussion or the intervention of a third reviewer (if necessary).

3. Full-Text Screening: Articles that passed the title and abstract screening stage were accessed in full-text and further reviewed by two independent reviewers. At this stage, each article was assessed using the quality assessment checklist based on CASP guidelines (Table 3). Articles that did not meet the quality *cutoff score* (a minimum of 5.0 out of 8.0) or were not entirely relevant to the inclusion criteria were excluded.

Data Extraction

To ensure consistency and completeness in information gathering, data from the 27 included articles were systematically extracted using a

pre-designed data extraction form within Parsifal. This form was structured to capture key information relevant to the research questions, including:

- Bibliographic information (authors, publication year, publication type).
- Research design and methodology.
- Identified ethical issues of Generative AI discussed.
- Manifestations and implications of ethical issues.
- Proposed recommendations or solutions related to ethical issues.
- Relevance to higher education aspects.
- Other relevant information such as definitions, research subject, country, research object, research variables, theory, method, stakeholders, roles & responsibility, study program, components, challenges, solutions, pros and cons, and future research.

The data extraction process was performed by one primary reviewer and validated by a second reviewer to ensure accuracy. Any disagreements were resolved through discussion until a consensus was reached.

Reporting Stage

The reporting stage is the final phase in the Kitchenham SLR protocol, where the results from the review process are synthesized and presented systematically. In this stage, data extracted from the 27 included articles will be analyzed and presented using a qualitative narrative synthesis approach, supported by relevant visualizations.

The data synthesis process was conducted by applying inductive thematic analysis to identify and categorize dominant ethical issues, as previously explained in the Methodology section. This narrative synthesis method aims to build a comprehensive understanding of the moral landscape of Generative AI in higher education from various perspectives in the literature.

To directly address the established research questions, the research findings will be presented in two main sub-sections within the Results section:

1. Identification of Key Ethical Issues of Generative AI: This sub-section will detail the seven core ethical issues identified from the literature and their specific manifestations within the higher education context.

2. Mapping of Ethical Issues to the FELT Framework: This sub-section will present how each identified ethical issue resonates with and can be mapped to the principles of the ALT Framework for Ethical Learning Technologies (FELT) (Accountability, Learning, Transparency, and Care), providing an analytical framework for understanding these ethical dimensions.

The presentation of findings in this structure is designed to ensure clarity, coherence, and a direct link to the research objectives. The Discussion section will discuss a more in-depth interpretation of these findings and their theoretical and practical implications.

Results

This section presents the findings of the Systematic Literature Review (SLR) conducted by the Kitchenham protocol, as previously outlined. The research findings are presented in three main subsections: an overview of the included studies, an analysis of the *co-occurrence network* to visualize the thematic landscape, and the identification and mapping of key ethical issues of Generative AI (GenAI) to the ALT Framework for Ethical Learning Technologies (FELT). These findings directly address the research question: What ethical issues are posed by generative artificial intelligence in higher education? And how can the identified ethical issues be mapped to the principles of the ALT Framework for Ethical Learning Technologies (FELT)?

Overview of Included Studies

Out of 272 articles identified through the search strategy in the Scopus database, 48 articles proceeded to the initial screening stage. Following full-text screening and quality assessment using the CASP checklist, 27 articles were ultimately included in this systematic review, meeting all inclusion and quality criteria (see Figure 2: Study Selection Process Flow Diagram). The included studies were published between January 1, 2023, and December 31, 2025, showing a significant increasing

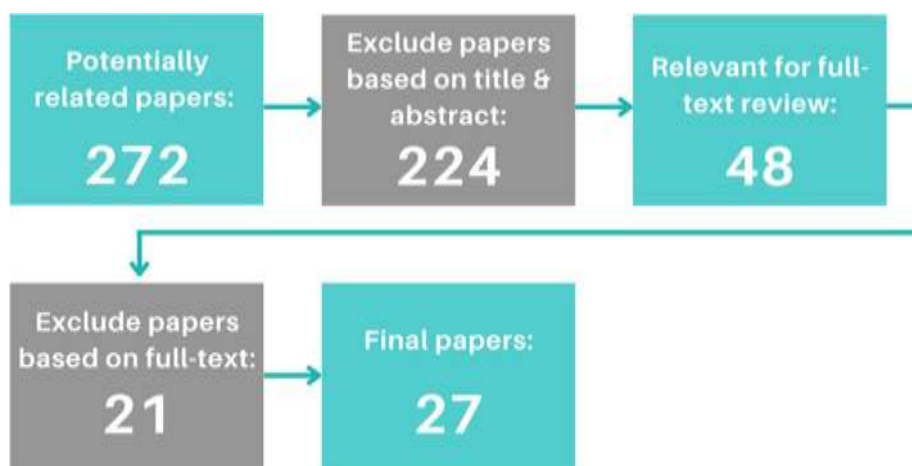trend in publications over time, indicating growing attention to GenAI in higher education.

Figure 2. Study Selection Process Flow Diagram

Co-occurrence Network Analysis and Thematic Landscape

The visualization of the keyword *co-occurrence network* from the 27 included articles (Figure 2) provides a rich thematic overview of the most prominent and interconnected issues in the literature concerning the ethics of Generative AI (GenAI) in higher education. This network analysis helped confirm the dominance of the specific problems and illustrate how various ethical concerns cluster thematically.
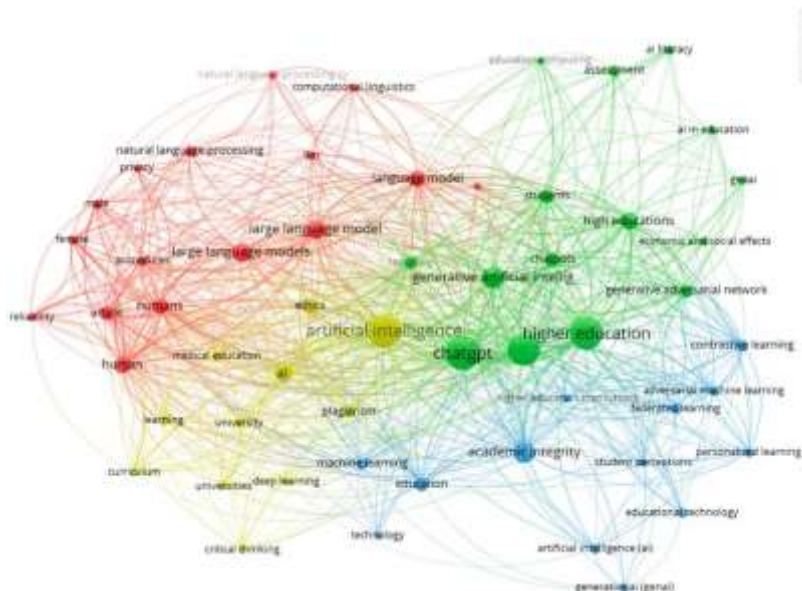
Figure 3. Co-Occurrence Network

The analysis reveals the dominance of four key clusters, each representing a distinct area of ethical discussion:

1. Green Cluster: GenAI Implementation and Pedagogical Impact. This cluster, centered on 'higher education' and 'generative artificial intelligence', clearly positions the use of GenAI within educational institutions as the core ethical concern. Keywords such as 'chatbots', 'students', 'assessment', and 'educational technology' affirm that ethical problems are not abstract but manifest in daily pedagogical practices. This indicates that ethical issues are strongly linked to how GenAI affects teaching-learning interactions, evaluation methods, and student learning experiences. 'AI literacy' as a closely connected node highlights the awareness of the need for in-depth ethical understanding and competence in GenAI use among stakeholders. This cluster is highly relevant to the Learning principle of FELT. Ethical issues arising here often relate to how GenAI can support or, conversely, hinder effective and authentic learning processes. Questions about 'assessment' lead to the Accountability principle, as institutions must be responsible for the fairness and validity of evaluations in the GenAI era. 'AI literacy' also correlates with Learning, as it emphasizes equipping users with knowledge and skills to interact ethically with this technology.

2. Blue Cluster: Academic Integrity and Perceptions. This cluster explicitly identifies 'academic integrity' as the most pressing ethical

issue. The strong link with 'student perceptions' emphasizes that students' views and experiences regarding GenAI use, including their perspectives on plagiarism and work authenticity, are crucial dimensions of this ethical issue. This indicates that efforts to address academic integrity cannot merely be top-down but must consider student experiences. 'Academic integrity' is strongly related to the Accountability principle, where institutions and individuals are responsible for ensuring academic authenticity and honesty. Furthermore, this issue is also linked to Transparency in communicating GenAI usage guidelines and providing clear expectations. 'Student perceptions' are highly relevant to the Care principle, as institutions must demonstrate concern for students' well-being, understanding, and ethical experiences in GenAI.

3. Red Cluster: Technical Aspects and Algorithmic Bias. This cluster, highlighting 'large language models' (LLMs) and 'privacy', delves into the technical roots of several ethical issues. The presence of 'privacy' and 'reliability' indicates deep concerns about how LLMs handle personal data and the accuracy of their information. More significantly, the emergence of terms like 'female' and 'male' in this cluster strongly suggests discourse around algorithmic bias in LLMs. This bias can stem from unrepresentative training data and potentially lead to discriminatory outputs, exacerbating inequities. The 'privacy' issue concerns the Care principle, demanding that individuals' data be carefully protected. Concerns about 'algorithmic bias' and 'reliability' also point to Accountability, as developers and users must be responsible for the impact of biased AI systems. Transparency is also crucial here, requiring clarity on how LLMs are trained, what data is used, and how bias is addressed.

4. Yellow Cluster: Plagiarism and Critical Learning. This cluster reinforces 'plagiarism' as a dominant ethical issue, particularly concerning tools like 'ChatGPT'. Its connection to 'learning' and 'curriculum' indicates that GenAI poses problems of copying and raises questions about how GenAI affects the development of 'critical thinking' in students. If students become overly reliant on AI, their critical thinking and originality may erode. 'Plagiarism' re-emphasizes the Accountability dimension in maintaining academic standards. The impact on 'critical thinking' and 'learning' directly relates to the Learning principle, raising questions about how GenAI can be integrated without undermining core educational

objectives. Transparency is also relevant in explaining the limitations of GenAI use and expectations for student work.

In summary, this *co-occurrence network* provides a visual roadmap of the ethical landscape of GenAI in higher education, indicating the dominance of issues such as academic integrity, privacy, and bias. The subsequent subsection thematically identifies ethical issues and further validates and analyzes these patterns in greater depth.

Identification of Key Ethical Issues of Generative AI

This section presents the key findings from the literature synthesis to address the Research Question: *What ethical issues are posed by generative artificial intelligence in higher education?* Following a rigorous selection process, 27 relevant studies that met the inclusion criteria were analyzed in depth. Identifying these ethical issues was conducted through an inductive qualitative thematic analysis of the entire content of the included articles.

Specifically, each article was reviewed to identify and extract statements, arguments, and findings that directly discuss challenges, concerns, or ethical implications related to using Generative AI (GenAI) in higher education. The extracted data underwent an open coding process, assigning initial labels to each emerging concept or ethical issue. Subsequently, these codes were iteratively grouped based on conceptual similarity and recurrent themes. This iterative process consistently identified seven dominant and interconnected categories of ethical issues, representing the full spectrum of ethical issues discussed in the literature.

These seven ethical issues reflect the multidimensional nature of the complexities faced by academic institutions with the adoption of GenAI. The thematic overview revealed in the *co-occurrence network* (see Figure 2) also visually reinforces the dominance and interconnectedness of these issues. Each issue is detailed below, supported by evidence and references from the 27 reviewed studies:
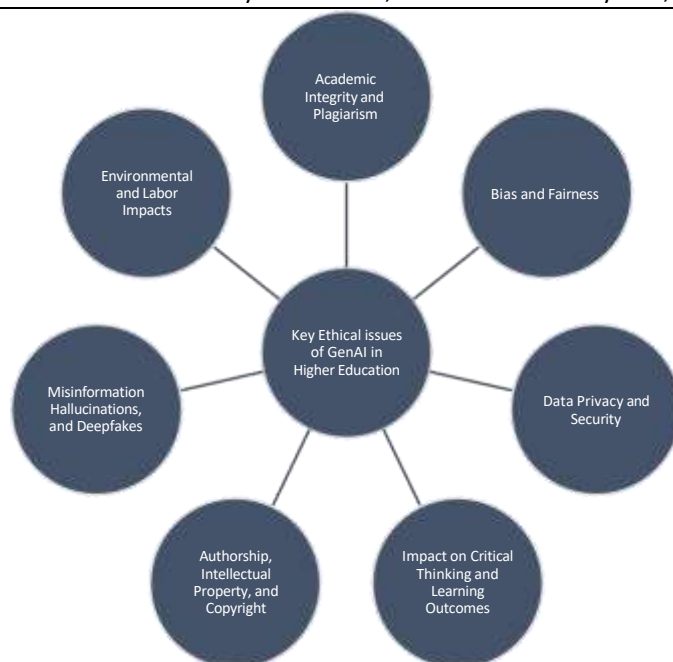
Figure 4. Seven Key Ethical Issues of Generative AI

Each issue is outlined in detail below, supported by evidence and references from the 27 studies examined:

Academic Integrity and Plagiarism

The integration of GenAI fundamentally blurs the lines of authorship, raising significant concerns about academic integrity and potential plagiarism. This technology enables students to quickly generate essays, solve problems, or simulate test answers, tempting them to take "shortcuts" that undermine the value of original work and fair comparison. Table 4 explains manifestations of this challenge.

Table 4. Challenges to Academic Integrity and Plagiarism Manifestations

Academic Integrity and Plagiarism Issues	Description	Reference
Unauthorized Assistance	The use of GenAI to complete assignments or exams without explicit permission is often treated as plagiarism or unauthorized assistance.	(Chan, 2024; Suleymenova et al., 2024)
False Authorship Claims	Students falsely claiming AI-generated work as their own violates ethical standards and undermines the principle of academic authenticity.	(Walczak & Cellary, 2023)

Citation Issues	The need for transparency and proper citation of GenAI tools is crucial, even when used solely for assistance like brainstorming or editing. Ironically, GenAI can also "hallucinate" or fabricate citations, leading to unintentional but damaging academic misconduct.	(Currie & Barry, 2023)
Bypassing Detection	GenAI's ability to mimic human writing poses a serious risk to traditional plagiarism detection mechanisms. Although tools like Turnitin have adapted, widespread skepticism remains regarding their reliability in detecting AI-generated content. This indicates that reactive, policing approaches to academic integrity may no longer be sufficient and could be counterproductive.	(Ardito, 2024; Currie & Barry, 2023)

Bias and Fairness

GenAI systems inherit and amplify existing biases in their training data, leading to unfair or discriminatory outcomes. This creates a significant ethical issue, directly impacting the fairness of learning experiences and equality of opportunity for all students. The manifestation of these challenges is outlined in Table 5 below.

Table 5. Challenges to Bias and Fairness Manifestations

Bias and Fairness Issues	Description	Reference
Perpetuation of Societal Biases	AI models, trained on massive datasets reflecting "long-standing biases existing in society," can perpetuate undesirable stereotypes (e.g., requesting a nurse and getting images of only women). This can lead to discriminatory content or unfair treatment.	(Driessens & Pischetola, 2024; Olla et al., 2024; Yusuf et al., 2024)
Data and Algorithmic Bias	Bias can originate from imbalances or errors in training data, flaws in the algorithms themselves, or even human reviewer subjectivity. Dataset bias often arises from the ease of using readily available data rather than striving for representative data.	(Dabis & Csáki, 2024)

Linguistic and Cultural Bias	Models are often dominated by Western-centric (white, male, American, English-speaking) perspectives, leading to underrepresentation of other cultures and languages. The observation that AI detectors are more likely to flag the work of non-native English speakers is a tangible example of linguistic bias.	(Chan, 2024)
Impact on Educational Recommendations/Decisions	Biased AI tools can lead to unfair learning experiences, discriminatory admissions decisions, or grading systems that unfairly favor certain backgrounds.	(Kolade et al., 2024)

Data Privacy and Security

GenAI models process vast amounts of data, including sensitive personal and confidential information, which can pose significant privacy and security risks if not managed properly. The challenges that arise from this situation are outlined in Table 6 below.

Table 6. Challenges to Data Privacy and Security Manifestations

Data Privacy and Security Issues	Description	Reference
Unauthorized Data Access/Breaches	Risks include exposure of personal information, vulnerabilities to data breaches, and cross-contamination of information among users. User input can be unintentionally or intentionally used to further train models without explicit consent.	(Yusuf et al., 2024)
Re-identification Risks	Even seemingly innocuous text input can allow Large Language Models (LLMs) to infer user characteristics such as age, gender, income, and location, posing re-identification risks.	(Driessens & Pischetola, 2024; Issa & Hall, 2024)
Confidentiality Concerns for Intellectual Property	Universities risk losing intellectual property (IP) rights or disclosing confidential research information if it is fed into institutionally unsupported AI applications.	(Issa & Hall, 2024; Walczak & Cellary, 2023)
Lack of Transparency	The "black box" nature of many GenAI systems means there is significant	(Driessens & Pischetola,

	uncertainty about how user data is actually utilized for training or profiling, and whether it is shared with third parties.	2024; Yusuf et al., 2024)
Cybersecurity Threats	GenAI can be misused to launch sophisticated phishing attacks, generate convincing deepfakes, and create other cyber threats, adding an unpredictable element to the institutional cybersecurity landscape.	(Cacho, 2024; Jin et al., 2025)

Impact on Critical Thinking and Learning Outcomes

Increased reliance on GenAI can lead to a decline in critical thinking, as users may unconsciously trade deep cognitive engagement for convenience and speed in acquiring information. This raises serious concerns about the development of essential cognitive skills in students. The challenges that arise from this situation are detailed in Table 7 below.

Table 7. Challenges to Impact on Critical Thinking and Learning Outcomes Manifestations

Impact on Critical Thinking and Learning Outcomes Issues	Description	Reference
Reduced Cognitive Effort	Higher reliance on GenAI often correlates with lower critical thinking. Students may become complacent, relying on AI for instant answers rather than engaging in deep problem-solving and independent analysis.	(Cacho, 2024; Suleymenova et al., 2024)
Shifting Nature of Critical Thinking	GenAI shifts the nature of critical thinking from original analysis and synthesis of ideas towards verifying AI-generated information, integrating responses, and managing AI-assisted tasks, potentially reducing cognitive processing depth.	(Ardito, 2024; Suleymenova et al., 2024)
Loss of Core Skills	Over-reliance on AI can lead to a loss of fundamental skills such as memory formation, attention span, and concentration. It can also prevent students from developing autonomous critical thinking, problem-solving, and creativity.	(Katsamakas et al., 2024; Ogunleye et al., 2024)

Scaffolding vs. Substitution	While AI has the potential to be a valuable "scaffold" for complex tasks, it should not entirely complete tasks for learners. AI's utility depends on meaningful pedagogical integration, not automation or full substitution of human cognitive effort.	(Chan, 2023; Henke, 2024)

Authorship, Intellectual Property, and Copyright

GenAI raises complex questions about who genuinely "writes" content, the legitimate ownership of AI-generated works, and potential copyright infringements, creating significant uncertainty within academic and research environments. The challenges that arise from this situation are detailed in table 8 below.

Table 8. Challenges to Authorship, Intellectual Property, and Copyright Manifestations

Authorship, Intellectual Property, and Copyright Issues	Description	Reference
Blurred Authorship	AI's "ingenuity" in mimicking human writing blurs the lines of authorship, making it increasingly difficult to distinguish between entirely human-generated and AI-assisted or AI-generated text.	(Walczak & Cellary, 2023)
Training Data Rights	GenAI models are trained on vast datasets scraped from the internet, often including copyrighted works, without explicit notification or consent from original creators. This has led to significant lawsuits alleging copyright infringement.	(Hargreaves, 2023; Yusuf et al., 2024)
Ownership of AI Output	The question of whether AI-generated works can be copyrighted remains an evolving legal issue with no universal clarity.	(Issa & Hall, 2024; Katsamakas et al., 2024)
Attribution Requirements	Clear guidelines are needed for attributing AI-generated content, even for seemingly minor tasks like brainstorming or text editing.	(Moore & Lookadoo, 2024)
Impact on Creative Workforce	Artists, writers, and musicians voice concerns that GenAI could displace	(Yusuf et al., 2024)

	human creativity and significantly undermine their earning potential.	

Misinformation, Hallucinations, and Deepfakes

GenAI is notorious for generating "hallucinations" (false or fabricated information) and can be misused to create manipulated or entirely fake text, videos, images, and audio ("deepfakes"). This phenomenon poses a significant risk to the reliability of information and institutional trust. The challenges that arise from this situation are outlined in table 9 below.

Table 9. Challenges to Misinformation, Hallucinations, and Deepfakes Manifestations

Misinformation, Hallucinations, and Deepfakes Issues	Description	Reference
Factual Inaccuracies	AI systems can confidently present false or outdated information, including fabricated citations, which can severely mislead academic users.	(Barus et al., 2025; Yusuf et al., 2024)
Large-Scale Disinformation	The ability to generate persuasive and tailored disinformation at scale makes it easier for "malicious actors" to spread false narratives, potentially influencing academic and public discourse.	(Hammond et al., 2023)
Impersonation	AI can generate audio or video of important institutional figures for fraudulent or manipulative purposes, posing threats to security and reputation.	(Cacho, 2024)
Erosion of Trust	Inaccurate content and the failure to use AI ethically and with proper disclosure can erode trust among students, faculty, and the public in educational institutions.	(Henke, 2024)

Environmental and Labor Impacts

The development and operation of GenAI carry significant environmental costs, including high energy and resource consumption, and raise concerns about labor exploitation and job displacement. This

often-overlooked ethical dimension is frequently missing from educational discussions. The challenges arising from this situation are outlined in table 10 below.

Table 10. Challenges to Environmental and Labor Impacts
Manifestations

Environmental and Labor Impacts Issues	Description	Reference
High Energy Consumption	Training and operating AI models require substantial computational power, leading to high energy consumption and a significant carbon footprint. Some reports, such as from Microsoft, indicate a sharp increase in water consumption linked to LLMs.	(Driessens & Pischetola, 2024)
Resource Depletion and Pollution	AI hardware heavily relies on rare-earth elements, and their mining processes can pollute soil and groundwater. Furthermore, the increasing electronic waste generated from AI hardware is a growing concern.	(Driessens & Pischetola, 2024)
Labor Exploitation	The training and refinement of GenAI models often depend on human labor, sometimes involving low-wage workers in the Global South who filter harmful content in conditions known as "digital sweatshops."	(Driessens & Pischetola, 2024)
Job Displacement	There are growing concerns that AI will displace significant portions of the workforce, particularly in administrative, IT, and creative sectors within universities, potentially leading to job losses and income inequality.	(Walczak & Cellary, 2023)

Mapping of Ethical Issues to the FELT Framework

Mapping of Ethical Issues to the FELT Framework To address how the identified ethical issues can be mapped to the principles of the ALT Framework for Ethical Learning Technologies (FELT), the prominent ethical issues identified in this study's findings are further analyzed through the lens of the ALT Framework for Ethical Learning Technologies (FELT). FELT provides four core principles—Accountability, Learning, Transparency, and Care—an analytical framework for evaluating the

ethical dimensions of GenAI issues in higher education. This mapping categorizes the issues and highlights areas where ethical considerations must be emphasized in policy and practice development. Table 11 summarizes the mapping of identified GenAI ethical issues to the most relevant FELT principles.

Table 11. Mapping Generative AI Ethical Issues to the FELT Framework
Principles

Ethical Issue	Relevant FELT Principle(s)	Brief Connection
Academic Integrity and Plagiarism	Accountability, Learning, Transparency	Upholding standards of academic honesty, ensuring genuine learning, and requiring disclosure of AI use.
Bias and Fairness	Care, Accountability, Transparency, Learning	Ensuring fair treatment, being accountable for bias mitigation, being transparent about bias origins, and educating to recognize bias.
Data Privacy and Security	Care, Accountability, Transparency	Protecting personal information, institutions being accountable for data security, and transparent about AI data collection/use practices.
Impact on Critical Thinking and Learning Outcomes	Learning, Care	Promoting the development of essential cognitive skills, ensuring AI does not undermine learning capacity and student cognitive well-being.
Authorship, Intellectual Property, and Copyright	Accountability, Transparency	Establishing authorship responsibility, protecting intellectual property rights, and being transparent about copyrighted data use for AI training.
Misinformation, Hallucinations, and Deepfakes	Learning, Accountability, Transparency, Care	Training information literacy, being accountable for information dissemination, transparent about AI limitations, and protecting from misleading content.
Environmental and Labor Impacts	Care, Accountability	Considering AI's broader impact on the environment and society, and being accountable for

		sustainability and fair labor practices in the AI supply chain.

Further analysis of this mapping, grouped based on the FELT principles, is as follows:

Accountability

The Accountability principle within the FELT framework underscores the necessity for individuals and institutions to take responsibility for their actions and decisions concerning using learning technologies, including GenAI. Several key ethical issues identified are strongly linked to this principle:

1. Academic Integrity and Plagiarism
   Institutions and students must be held accountable for honesty and originality in academic work through clear policies and assessment methods that ensure authenticity.
2. Bias and Fairness
   Holds developers, platform providers, and educational institutions accountable for identifying and mitigating algorithmic biases that can result in discrimination.
3. Authorship, Intellectual Property, and Copyright
   Establishes responsibility for the authorship of AI-assisted works and for safeguarding the intellectual property rights of individuals and institutions.
4. Misinformation, Hallucinations, and Deepfakes
   Institutions and individuals must be accountable for preventing the spread of AI-generated misinformation and for educating users on fact-checking.
5. Environmental and Labor Impacts
   Extends institutional accountability to assess GenAI's wider environmental footprint and social impact, including labor exploitation and unfair job displacement.

Learning

The Learning principle within FELT emphasizes how technology ought to support and enhance the learning process and students' cognitive development. Ethical issues related to GenAI that threaten or fundamentally alter learning are particularly relevant here:

1. Academic Integrity and Plagiarism
    Over-reliance on GenAI can hinder genuine learning, reducing critical
    thinking and deep problem-solving.
2. Impact on Critical Thinking and Learning Outcomes
    This core issue regarding the Learning principle involves how GenAI
    might reduce cognitive effort, shift critical thinking from original
    analysis to passive verification, and result in a loss of essential skills.
    GenAI should serve as a scaffold for learning, not a harmful
    substitute.
3. Bias and Fairness
    Promotes the development of "AI literacy" as part of responsible
    learning, equipping students with the skills to recognize and
    challenge biases in AI outputs.
4. Misinformation, Hallucinations, and Deepfakes
    Ensuring quality learning requires teaching students about the risks
    of AI-generated misinformation and the importance of critically
    verifying information, thereby building strong digital media literacy.

Transparency

The Transparency principle within FELT demands clarity regarding
the functioning of learning technologies, data usage, and their
limitations. This is crucial for building trust and enabling users to make
informed decisions.
1. Academic Integrity and Plagiarism
    Requires transparency in students' disclosure of GenAI use and clear
    citation requirements, along with institutional transparency
    regarding AI detection methods and their limitations.
2. Data Privacy and Security
    Demand transparency about how user data is collected, processed,
    and used by GenAI models, as well as whether this data is shared with
    third parties.
3. Bias and Fairness
    Transparency is essential concerning the training data and algorithms
    supporting GenAI to facilitate effective bias identification and
    reduction.
4. Authorship, Intellectual Property, and Copyright

Requires transparency regarding training data that may include copyrighted material, along with clarity in defining and attributing authorship for AI-assisted works.

5. Misinformation, Hallucinations, and Deepfakes
    Institutions and technology providers must be transparent about GenAI's potential to create false information and deepfakes and the limitations of the models' accuracy.

Care

The Care principle within FELT centers on protecting individual well-being, fairness, inclusivity, and considering the broader impact of technology on society and the environment.

1. Bias and Fairness
    At the core of the Care principle, this issue urges institutions to ensure that GenAI use promotes equity and does not create or exacerbate injustice or discrimination, guaranteeing equal opportunities for all students.

2. Data Privacy and Security
    Protecting students' personal and sensitive data directly reflects the Care principle. Institutions must take proactive measures to safeguard information security and ensure ethical data use.

3. Impact on Critical Thinking and Learning Outcomes
    Care also involves concern for students' cognitive well-being. Institutions must ensure that GenAI does not hinder students' ability to think critically and develop intellectually.

4. Misinformation, Hallucinations, and Deepfakes
    Demonstrates care by protecting students from the negative impacts of AI-generated misinformation and deepfakes, thereby ensuring a safe and trustworthy learning environment.

5. Environmental and Labor Impacts
    The Care principle encourages institutions to consider GenAI's broader and often hidden impacts on the environment (energy consumption, pollution) and society (labor exploitation, job displacement), thereby promoting responsible and sustainable AI practices.

The mapping of GenAI ethical issues to the FELT framework illustrates that ethical complex problems require a multidimensional

approach. Each issue often intersects with multiple FELT principles, highlighting the significance of holistic consideration. This framework not only offers a tool for identifying and classifying issues but also acts as a practical guide for creating more ethical and responsible policies and practices in the adoption of GenAI in higher education.

Discussion

This section interprets the key findings from the systematic literature review, exploring their theoretical and practical implications and identifying areas for future research. This analysis builds on the identification of seven key ethical issues of Generative AI (GenAI) in higher education and their mapping to the ALT Framework for Ethical Learning Technologies (FELT), as presented in the Results section.

Interpretation of Key Findings and Convergence of Analyses

This systematic review comprehensively identifies a wide range of complex ethical issues related to GenAI in higher education, spanning from academic integrity to environmental impacts. The convergence of these findings is significantly supported by the analysis of the keyword *co-occurrence network* (Figure 2). This visualization empirically validates the dominance of thematically identified ethical issues. For instance, the centrality of academic integrity within the blue cluster of the *co-occurrence network* strongly affirms its prominence as a pressing ethical concern in the literature, which is also closely tied to FELT's principles of Accountability and Learning. Similarly, the red cluster, focused on large language models, privacy, and the inclusion of demographic terms like female and male, visually confirms the importance of data privacy and algorithmic bias issues. These connections directly align with the FELT principles of Care (protecting individuals from bias and privacy violations) and Transparency (understanding data usage and bias emergence). The presence of AI literacy in the GenAI implementation cluster (green) also emphasizes the urgency of the Learning principle, highlighting the need to equip students and educators with the skills to interact ethically and critically with this technology. Collectively, the convergence between the detailed thematic analysis of the literature and the patterns revealed in the *co-occurrence network* provides robust, multi-layered evidence for our findings. This mapping of ethical issues to the FELT framework not

only categorizes these challenges but also serves as a diagnostic tool. It emphasizes that each ethical issue requires multi-dimensional attention, where FELT principles offer guidelines for action and areas for policy and intervention focus.

Institutional Response and Stakeholder Perspectives

Analysis indicates that the institutional response to GenAI's ethical issues remains nascent and frequently fragmented. While there are efforts to develop policies and guidelines, widespread adoption continues to be limited, with less than 40% of institutions projected to have adequate AI policies by Spring 2025(Lu et al., 2022). This gap underscores the urgent need for comprehensive, adaptive, and coordinated policy development that aligns with FELT's Accountability and Care principles.

Diverse stakeholder perspectives—students, faculty, administrators, and policymakers—further underscore the complexity of these ethical dilemmas. Students often view GenAI as a valuable learning aid but are also mindful of legitimate concerns regarding misuse (Barus et al., 2025; Chen, 2023). This highlights the importance of pedagogical integration that promotes critical thinking and responsible use, consistent with FELT's Learning principle. Faculty, on the other hand, grapple with issues of academic integrity and the need for more explicit guidance and training (Garcia et al., 2024; Lee, 2024), emphasizing the roles of Accountability and Transparency. Administrators balance the push for innovation with data protection and compliance, underscoring the Care principle. International regulatory frameworks like UNESCO's recommendations, the EU AI Act, and IEEE initiatives provide a foundation; however, effective implementation requires careful local adaptation in line with Transparency and Accountability principles.

Theoretical Implications

Theoretically, this study enriches the growing literature on AI ethics in education by offering a comprehensive taxonomy of seven key ethical issues of GenAI. This provides a more holistic overview and can serve as an empirical basis for more extensive theoretical models of AI ethics in educational contexts. The selection of the ALT Framework for Ethical Learning Technologies (FELT) for this mapping was deliberate, as FELT is

uniquely positioned to address the nuances of ethical considerations within educational technology. Unlike broader AI ethics frameworks, FELT was developed explicitly for learning technologies, encompassing principles directly relevant to pedagogical practices, learner well-being, and institutional accountability in educational settings. Its focus on "Learning" and "Care" principles, alongside "Accountability" and "Transparency," makes it particularly apt for analyzing GenAI's impact on educational outcomes and the responsibilities of higher education institutions in fostering responsible AI use.

The integration and mapping of these issues to FELT provide significant empirical validation for the framework itself. This mapping enriches FELT by illustrating specific manifestations of each principle; for instance, the discussion of GenAI "hallucinations" and misinformation concerns deepens the understanding of FELT's Transparency dimension, which demands clarity on AI system limitations. Similarly, the analysis of environmental and labor impacts extends FELT's Care principle beyond direct user interactions, embracing ethical responsibilities throughout the technology's lifecycle. The convergence of findings from thematic analysis and the patterns revealed in the co-occurrence network (Figure 2) theoretically strengthens the mixed-methods approach in literature reviews, demonstrating that qualitatively identified ethical issues are dominant and interconnected topics in the broader research discourse, thus enhancing the external validity of this study's findings.

Practical Implications

The practical implications of this research are significant for various stakeholders in the higher education ecosystem. For administrators and institutional leaders, these findings provide a clear roadmap of the full spectrum of ethical issues they must address. Data on the current low adoption of GenAI policies (less than 40% of institutions) highlights the urgency to develop comprehensive, adaptive, and coordinated policies, alongside robust data governance that aligns with FELT's Care and Accountability principles (Lu et al., 2022)**.** For educators and lecturers, this study emphasizes the necessity of AI literacy as an essential skill, not only for students but also for themselves (Padilla Piernas & Martín García, 2024). Recommendations for a pedagogical shift towards "AI-resistant" assessments and encouraging critical thinking (aligned with the Learning principle) offer concrete guidance for designing curricula and

assessments in the GenAI era. Understanding algorithmic bias and misinformation risks also equips educators to teach students how to evaluate AI content critically. Students will gain a deeper understanding of GenAI's ethical dimensions, including issues like academic integrity, privacy, and bias, empowering them to become more responsible and critical AI users. For policymakers (institutional and global), the study highlights the complexity of regulatory frameworks. The identification of diverse issues, including often-overlooked environmental and labor impacts, broadens the scope of policy considerations. Mapping to FELT can serve as a practical framework for drafting guidelines that ensure accountability, transparency, responsible learning, and care for all parties involved. Finally, for AI developers, findings related to algorithmic bias, data privacy, and authorship/copyright concerns provide direct feedback from the higher education context. This underscores the need for ethical-by-design AI, focusing on model transparency, bias mitigation, and privacy protection as core features, rather than mere add-ons (Dabis & Csáki, 2024).

Research Gaps and Recommendations for Responsible Integration

Given the dynamic nature of GenAI, new ethical dilemmas will continuously arise, such as issues of the "digital divide" and unequal access to advanced GenAI tools. The identified research gaps highlight crucial areas for future investigation: the development of causal bias models and quantitative accountability metrics; the exploration of qualitative user experiences and perceived transparency; the standardization of AI ethics definitions and longitudinal studies; the development and implementation of comprehensive GenAI governance frameworks; the need for discipline-specific support resources and GenAI product evaluation; and a thorough assessment of environmental and labor impacts.

To navigate GenAI's complex ethical landscape and address these gaps, several key recommendations emerge, aligning with FELT's principles:

- Comprehensive AI Literacy: Promoting the learning principle to tackle bias and misinformation.
- Human-Centered Approach: Embracing the Care principle while upholding critical thinking and academic integrity.

- Robust Policy Development: A Foundation of Institutional Accountability and Care.
- Enforcing System Transparency and Accountability: Tackling bias and privacy through FELT's Transparency and Accountability principles.
- Strong Data Governance is essential to the Care and Accountability principles for data privacy.
- Ethical and Inclusive AI Design: Promoting bias mitigation through care and accountability.
- Interdisciplinary Collaboration: It fundamentally supports all FELT principles and is crucial for addressing complex GenAI challenges, including environmental and labor impacts.

Conclusion

The widespread integration of generative artificial intelligence (GenAI) into higher education offers unprecedented transformative opportunities, but it also presents a complex and multifaceted array of ethical issues. This systematic literature review has identified seven key ethical issues: academic integrity and plagiarism, algorithmic bias and fairness, data privacy and security, the impact on critical thinking and learning outcomes, questions of authorship and intellectual property, risks of misinformation and hallucinations, and broader environmental and labor impacts. These issues have been systematically aligned with the principles of the ALT Framework for Ethical Learning Technologies (FELT)—Accountability, Learning, Transparency, and Care—showcasing the ethical dimensions that demand comprehensive attention.

Further analysis indicates that institutional responses to these challenges remain in their early stages and often fragmented, with significant policy adoption and coordinated approaches still absent. International regulatory frameworks offer a valuable foundation, but practical implementation requires careful adaptation to local contexts. Diverse stakeholder perspectives—students, faculty, administrators, and policymakers—highlight the complexity of these ethical dilemmas, as each group faces different expectations, concerns, and challenges.

Overall, the ethical integration of GenAI in higher education is not just a technical challenge but a significant pedagogical, institutional, and social one. This requires a holistic, human-centered, and adaptive approach that prioritizes the development of comprehensive AI literacy, human oversight, transparency, strong data governance, and

interdisciplinary collaboration. Future research must actively tackle the identified gaps, especially in developing quantitative metrics for accountability and transparency, exploring qualitative user experiences, and thoroughly assessing the environmental and labor impacts of GenAI. By proactively and collaboratively addressing these concerns, higher education institutions can harness the potential of GenAI to enhance learning while maintaining the core values of integrity, fairness, and human development for future generations.

Acknowledgments

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