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Managing Artificial Intelligence Ethics in Higher Education: A Systematic Framework for Issues and Policy Recommendations

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Abstract

The integration of artificial intelligence (AI) in higher education has raised significant ethical and governance challenges. Despite growing scholarly attention, systematic governance frameworks remain underdeveloped, creating a gap between rapid AI adoption and institutional capacity to manage ethical implications. Guided by PRISMA 2020 guidelines, this systematic review synthesizes 55 peer-reviewed studies from Web of Science (2022-2025) to examine: (1) ethical issues and risks, (2) governance frameworks and policies, (3) governance gaps and limitations, and (4) evidence-based recommendations. Findings reveal research predominantly focuses on individual-level ethical awareness, with privacy, academic integrity, and algorithmic bias most frequently addressed, while institutional governance studies remain scarce. Institutional responses are primarily reactive and provisional rather than strategic. Five persistent governance gaps were identified: limited governance capacity, fragmented coordination, low AI ethics literacy, underrepresentation of equity perspectives, and weak evaluation mechanisms. This study proposes four targeted recommendations: establishing centralized governance committees, developing mandatory ethics literacy programs, implementing systematic evaluation mechanisms, and ensuring equity-oriented approaches. These findings underscore the need for institutions to transition from ad hoc responses to comprehensive, integrated AI ethics frameworks that embed ethical principles into their institutional strategy, ensuring the responsible and equitable use of AI.

Keywords: Artificial Intelligence, AI Ethics, Higher Education, Ethical Governance, Policy Framework.

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Introduction

The rapid expansion of artificial intelligence (AI) technologies has profoundly reshaped higher education, with the release of ChatGPT in November 2022 representing a decisive inflection point for teaching, learning, assessment, and institutional governance. In a matter of months, AI-driven applications have become embedded across higher education functions, including personalized learning systems, automated grading, admissions decision-making, student support services, and research assistance (Kasneci et al., 2023; Sullivan et al., 2023). This accelerated adoption has generated substantial opportunities for pedagogical innovation while simultaneously introducing complex ethical, legal, and policy challenges that institutions remain ill-equipped to manage systematically.

Technology has historically transformed educational practices, from the fifteenth-century printing press to twentieth-century broadcast media and contemporary digital platforms (UNESCO, 2021; Kikalishvili, 2023). However, the current AI wave differs qualitatively from prior technological innovations. Generative AI (GenAI) systems are capable of producing original content, providing advanced feedback, and executing cognitive tasks traditionally associated with human expertise (Evangelista, 2025). These capabilities disrupt core academic assumptions related to authorship, assessment validity, intellectual labor, and the epistemological foundations of higher education.

Institutional responses to AI integration have been notably inconsistent. While some universities have adopted innovation-oriented approaches that encourage experimentation and integration, others have imposed restrictive policies or temporary bans, particularly in relation to assessment and academic integrity (Freeman, 2025; Jin et al., 2025). This divergence reflects unresolved tensions: innovation versus risk management, autonomy versus compliance, and effectiveness versus ethical responsibility.

Comparative analyses of AI policies across different institutional and national contexts reveal substantial variation in both scope and strategic orientation (Alqahtani & Wafula, 2025; Rizki & Daoud, 2025). Leading universities have adopted diverse pedagogical strategies for AI integration, ranging from cautious experimentation to systematic curriculum redesign (Alqahtani & Wafula, 2025). Similarly, examinations of institutional practices in countries such as New Zealand demonstrate that even within relatively homogeneous higher education systems, individual institutions vary significantly in their policy formalization and implementation approaches (Rizki & Daoud, 2025).

Ethical Dimensions of AI in Higher Education

The ethical implications of AI integration have become a central focus of scholarly and policy debates. Contemporary AI ethics frameworks, drawing on foundational ethical principles such as beneficence, non-maleficence, autonomy, justice, transparency, and accountability, emphasize the heightened responsibility of educational institutions toward students and society (EDUCAUSE, 2025). These principles are particularly salient in higher education due to asymmetries of power, the sensitivity of educational data, and the long-term

consequences of academic decision-making.

Privacy and data governance concerns are especially pronounced. AI systems routinely process large volumes of sensitive student data, including academic records, behavioral analytics, and demographic information, raising concerns about informed consent, data security, surveillance, and the use of secondary data (Holmes et al., 2023). The integration of emerging technologies such as telepresence robots and gamification into educational governance systems further complicates data protection frameworks, requiring institutions to develop more sophisticated approaches to digital ethics and privacy management (Addas et al., 2024). These challenges necessitate socio-technical perspectives that account for the interplay between technological capabilities and human practices, particularly in language education contexts where AI tools mediate cultural and linguistic interactions (Babanoğlu et al., 2025). Reflecting these risks, the European Union's AI Act categorizes many educational AI applications as "high-risk," mandating robust transparency, accountability, and human oversight mechanisms (European Union, 2024).

Algorithmic bias constitutes a critical ethical risk across the educational spectrum. AI systems trained on historical datasets may reproduce existing inequalities in K-12 settings (Gouseti et al., 2024) and have been shown to systematically misidentify 'at-risk' students in higher education (Gándara et al., 2024). In higher education, such biases may influence admissions, grading, course recommendations, or funding decisions, undermining equity and social justice objectives.

Concerns related to academic integrity have intensified following the widespread availability of generative AI tools. The capacity of AI systems to generate essays, solve problems, and emulate scholarly discourse complicates conventional definitions of plagiarism, originality, and authentic learning (Cotton et al., 2023). Institutions continue to struggle with establishing consistent, ethically grounded policies that distinguish acceptable AI-supported learning from misconduct. Expert consensus studies employing Delphi methodology underscore the complexity of maintaining academic integrity in AI-enhanced research and teaching environments, revealing persistent disagreements among stakeholders regarding appropriate boundaries for AI assistance in scholarly work (Güneş & Liman Kaban, 2025). These tensions extend beyond assessment to encompass broader questions about the nature of intellectual contribution and authorship in an era of AI-augmented scholarship.

AI Governance Frameworks in Higher Education

While the ethical challenges of AI in higher education are now well documented, understanding how institutions have attempted to manage these issues requires attention to the emerging landscape of AI governance frameworks. Governance, in this context, refers to the structures, processes, and policies that institutions use to regulate, oversee, and guide the ethical use of AI technologies (Jobin et al., 2019; OECD, 2019).

Institutional approaches to AI governance vary considerably. Some universities have adopted centralized governance models, establishing dedicated AI ethics committees or task forces responsible for developing institution-wide policies and coordinating ethical oversight across academic and administrative units (Humble,

2025; Jin et al., 2025). These centralized approaches aim to ensure consistency, accountability, and strategic alignment with institutional missions. In contrast, other institutions have pursued distributed governance models, in which departments, faculties, or individual instructors develop localized guidelines tailored to discipline-specific needs (Evangelista, 2025; Grieve et al., 2024). While such approaches offer flexibility and contextual responsiveness, they risk fragmentation and inconsistent standards across the institution.

Policy instruments for AI governance also exhibit diversity. Usage guidelines represent the most common form of institutional response, providing normative recommendations on the acceptable use of AI in teaching, assessment, and research (Chan, 2023; An et al., 2025). More sophisticated approaches include risk-based frameworks that categorize AI applications according to their potential for harm and mandate differentiated oversight accordingly—an approach consistent with the European Union's AI Act, which classifies educational AI as "high-risk" (European Union, 2024). Additionally, some institutions have adopted AI impact assessments modeled on ethical impact assessments in technology governance, which require a systematic evaluation of AI tools prior to deployment (González-Fernández et al., 2025; Cherner et al., 2025). Policy development increasingly emphasizes the cultivation of digital competencies as a prerequisite for effective AI governance, with leading institutions recognizing that technical infrastructure alone is insufficient without corresponding investment in faculty and student AI literacy (Zhang & Tian, 2025). Some national contexts have developed heterarchical policy networks that engage government, industry, and academic stakeholders in collaborative governance arrangements, as evidenced by the British higher education sector's approach to AI policy coordination (Gellai, 2023). Furthermore, recent analyses highlight the value of cross-institutional learning, as institutions examine generative AI tools and draw policy insights from the experiences of early adopters (Rodrigues et al., 2025).

A key distinction in the governance literature pertains to the difference between "soft governance" and "hard regulation." Soft governance encompasses voluntary guidelines, ethical codes, and advisory mechanisms that rely on persuasion, professional norms, and reputational incentives rather than legal enforcement (Floridi et al., 2018). In contrast, burdensome regulation involves legally binding requirements, compliance mandates, and formal sanctions for violations. Most higher education AI governance currently operates within the soft governance paradigm, reflecting both the novelty of the challenges and the traditional emphasis on academic freedom and institutional autonomy (Kaya-Kasikci et al., 2025). However, as AI becomes more deeply embedded in consequential decisions, such as admissions, grading, and resource allocation, scholars increasingly call for more robust regulatory mechanisms that complement voluntary ethical frameworks (Jiang et al., 2025; Liu et al., 2025). This regulatory evolution is further complicated by the sub-symbolic nature of contemporary AI systems, which operate through pattern recognition and probabilistic inference rather than explicit rules, challenging traditional governance frameworks predicated on transparent, rule-based decision-making (Li et al., 2025). Such technical characteristics demand governance approaches that can accommodate opacity and uncertainty while still maintaining accountability.

Stakeholder Perspectives and Institutional Capacity for AI Ethics

AI ethics in higher education is not a single-actor phenomenon; instead, it involves multiple stakeholders with distinct perspectives, interests, and capacities. Understanding these stakeholder dynamics is essential for developing governance frameworks that are both legitimate and effective.

Faculty members occupy a critical position in AI ethics governance, as they are often the primary decision-makers regarding the use of AI in teaching and assessment. Research indicates that faculty perspectives on AI ethics are shaped by disciplinary norms, pedagogical beliefs, and concerns about workload and professional autonomy (Malik et al., 2025; Ravi et al., 2025). While many faculty express awareness of ethical concerns such as academic integrity and fairness, their capacity to translate this awareness into practice is often constrained by limited AI literacy and insufficient institutional guidance (Holmes et al., 2023). Academic staff perspectives reveal similar patterns of ambivalence, balancing recognition of AI's pedagogical potential against concerns about its effects on teaching quality, academic standards, and professional autonomy (Alnsour et al., 2025). Faculty members often report feeling underprepared to make informed decisions about the appropriate use of AI, highlighting the need for comprehensive professional development programs.

Student perspectives on AI ethics reflect a combination of pragmatic concerns and ethical reasoning. Studies suggest that students generally recognize the ethical dimensions of AI use, including issues of fairness, transparency, and academic honesty (Alnsour et al., 2025a; Usher et al., 2025). However, students also express uncertainty about institutional expectations and report inconsistent guidance across courses and instructors (Grieve et al., 2024; Villarino, 2024). Research on student perceptions reveals complex emotional responses to AI integration, including tensions between enthusiasm for AI's potential benefits and anxiety about its implications for learning authenticity and assessment validity (Qu et al., 2025). Cross-national studies indicate that while ethical awareness among students is widespread, their capacity to articulate coherent ethical positions varies considerably, often reflecting the quality and consistency of institutional guidance they receive (Medina-Gual & Parejo, 2025). This variability may contribute to confusion about acceptable practices and undermine the credibility of institutional policies.

Institutional priorities, regulatory compliance requirements, and resource constraints shape administrative perspectives on AI ethics. Administrators are typically responsible for developing and implementing institution-wide policies, yet they often face challenges in balancing innovation imperatives with risk management (Jin et al., 2025; Erhardt et al., 2025). Research suggests that administrative responses to AI ethics are often reactive, emerging in response to specific incidents or external pressures rather than being proactive and strategic (Humble, 2025). Administrators must also contend with evidence of AI's potential negative impacts on educational quality and institutional mission, including risks of over-reliance on automated systems, erosion of critical thinking skills, and exacerbation of educational inequalities (Nadim & Di Fuccio, 2025). For institutions serving international student populations, policy development is further complicated by visa regulations, cross-cultural ethical frameworks, and disparities in students' prior exposure to AI technologies (Nazir, 2025). These contextual factors demand administrative approaches that are simultaneously principled and flexible.

Institutional capacity for AI ethics governance depends on several key factors, including the availability of expertise, financial resources, and organizational structures that are capable of coordinating ethical oversight (Kong et al., 2023). Studies have highlighted that many institutions lack dedicated personnel with expertise in AI ethics, instead relying on existing ethics committees or ad hoc working groups (Spivakovsky et al., 2023). This capacity deficit constrains the development of comprehensive governance frameworks and contributes to the fragmented landscape of AI ethics management observed in the literature.

Pedagogical Innovation and AI Ethics Education

Beyond governance structures and stakeholder perspectives, a growing body of research examines how AI can be integrated into pedagogy in ways that simultaneously leverage its capabilities and cultivate ethical awareness. Design thinking approaches, for instance, demonstrate that AI can enhance creativity, critical thinking, and problem-solving capacities when embedded within pedagogical frameworks that emphasize ethical reasoning and reflection (Rana et al., 2025). Empirical studies suggest that when AI-enhanced learning environments are grounded in principles of fairness, transparency, and trust, they can positively influence learning performance while developing students' ethical sensitivity (Shahzad et al., 2025).

Immersive technologies represent a particularly promising avenue for ethics education. The integration of artificial intelligence with virtual reality creates experiential learning environments specifically designed to develop ethical decision-making competencies, enabling students to navigate complex ethical scenarios in simulated contexts before encountering similar challenges in professional practice (Tobias et al., 2025). Such pedagogical innovations highlight the need for comprehensive, full-cycle AI ethics education systems that integrate theoretical foundations with practical applications across the entire student lifecycle, from orientation through graduation (Xu et al., 2025).

These developments suggest that AI ethics in higher education should not be conceptualized solely as a governance challenge or risk management concern, but also as an opportunity for pedagogical renewal. Practical approaches integrate ethics into curriculum design, assessment practices, and co-curricular activities, treating ethical competence as a core learning outcome rather than an add-on compliance requirement.

Rationale for a Systematic Review

Despite increasing scholarly attention, systematic approaches to managing AI ethics in higher education remain limited. UNESCO (2021) reports that fewer than 10% of higher education institutions worldwide have formal policies governing AI. The literature is fragmented, often addressing isolated technologies, ethical issues, or stakeholder perspectives, thereby limiting its utility for comprehensive policy development.

A systematic review provides a methodologically rigorous approach to synthesizing the rapidly expanding body of research, identifying convergent findings, persistent gaps, and evidence-based policy implications. Moreover, higher education presents distinctive contextual features—academic freedom, research missions, institutional

complexity, and diverse student populations that necessitate tailored ethical frameworks rather than generalized educational technology policies.

Purpose and Research Questions

Accordingly, this study conducts a systematic review of literature published between 2022 and 2025 to synthesize evidence on ethical issues, governance frameworks, and policy responses related to the integration of AI in higher education. Guided by PRISMA principles, the review addresses the following research questions:

1. What ethical issues and risks are most frequently associated with AI integration in higher education?

2. What governance frameworks and policy approaches have been proposed or implemented to manage AI ethics?

3. What governance gaps, challenges, and limitations characterize current AI ethics management practices in higher education?

4. What evidence-based recommendations can inform the development of comprehensive AI ethics policies in higher education?

Method

Research Design

This study adopted a systematic literature review design in accordance with the PRISMA 2020 guidelines to synthesize existing research on ethical issues, governance approaches, and policy responses related to artificial intelligence (AI) in higher education. A systematic approach was selected to ensure transparency, methodological rigor, and replicability in reviewing a rapidly expanding and conceptually fragmented body of literature.

Data Source and Search Strategy

The literature search was conducted exclusively using the Web of Science (WoS) Core Collection, chosen for its high-quality indexing of peer-reviewed journals in education, educational technology, ethics, and higher education policy. The search covered publications from 2022 to 2025 (up to November 2025), reflecting the period following the widespread adoption of generative AI tools in higher education.

Search Query: The following search string was applied to the Web of Science Core Collection:
TS=("Artificial Intelligence" OR "AI") AND TS=ethic* AND TS="higher education"

This query was applied to Topic fields (title, abstract, author keywords, and Keywords Plus), which yielded 462,817 initial results. After applying the ethics filter (n=21,365) and higher education filter (n=1,101), the dataset

was refined for further screening. Only peer-reviewed journal articles published in English were considered. The search was limited to articles, review articles, and early access publications from Web of Science categories relevant to the research topic. Table 1 presents the criteria used to determine study eligibility.

Table 1. Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Article Topic	Focuses on AI ethics, ethical challenges, governance, or policy development in higher education contexts.	Focuses solely on K–12, vocational, corporate, or non-formal education.
Document Type	Peer-reviewed journal articles.	Conference papers, book chapters, editorials, dissertations, reports, or grey literature.
Publication Period	Published between 2022 and November 2025 (covering the period of widespread generative AI adoption).	Published before 2022 or after November 2025.
Database	Indexed in Web of Science (WoS) Core Collection.	Indexed only in other databases (e.g., Scopus, ERIC) without WoS indexing.
Language	Written in English.	Not available in English.
Access	Full text available.	Abstract-only or not accessible.
Methodological Focus	Addresses ethical, governance, or policy dimensions of AI in higher education (empirical, review, conceptual).	Focuses solely on technical AI development without educational or ethical implications.
Relevance	Directly addresses AI ethics in higher education with substantive discussion of ethical issues, governance, or policy.	Mentions AI or ethics only tangentially; out-of-context references.

Study Selection

The study selection process followed the PRISMA 2020 framework and consisted of four stages: identification, screening, eligibility assessment, and final inclusion.

1. Identification (n=462,817): Initial search using the keywords "Artificial Intelligence" OR "AI" in the Web of Science Core Collection.
2. Filtration (n=72): Applied filters for ethics-related content (n=21,365), higher education context (n=1,101), document type (articles, review articles, and early access; n=72), publication years (2022-2025), and Web of Science category relevance.
3. Eligibility (n=59): Full-text availability was verified. Articles without accessible full text (n=13) were excluded.
4. Included (n=55): Full-text review was conducted to assess substantive relevance. Articles that mentioned

AI or ethics only tangentially or were out of context (n=4) were excluded, resulting in 55 articles included in the final synthesis.

Two researchers independently screened titles, abstracts, and full texts. Disagreements were resolved through discussion and consensus. Inter-rater reliability was calculated using Cohen's kappa (κ = 0.87), indicating strong agreement. The selection process is summarized using a PRISMA flow diagram in Figure 1.

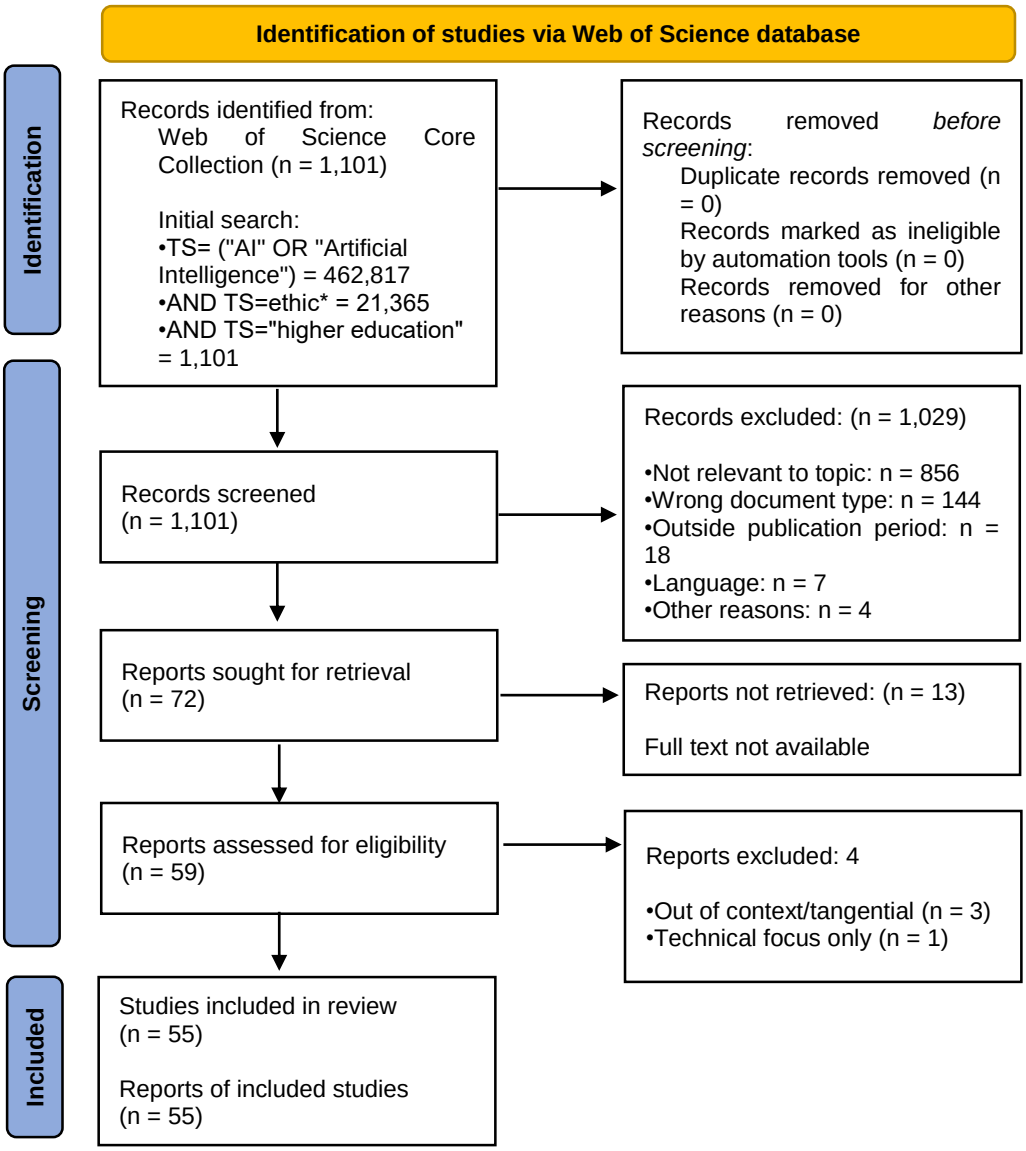

Figure 1. Article Selection Process

Data Extraction

A standardized data extraction form was developed to systematically capture key information from each included study. Extracted elements included:

- Bibliographic information (authors, year, journal) - Research focus and objectives - Methodological design

(empirical, conceptual, review) - Context and sample characteristics (if applicable) - Ethical issues identified - Governance or policy frameworks discussed - Main findings and recommendations

Data extraction was performed by the primary researcher and verified by a second researcher to ensure accuracy and consistency.

Data Analysis and Synthesis

Data were analyzed using a thematic synthesis approach following Braun and Clarke's (2006) guidelines. The analysis proceeded in three phases:

1. Initial coding: Line-by-line coding of extracted data to identify specific ethical issues, governance strategies, and policy recommendations.
2. Theme development: Codes were grouped into descriptive themes through iterative comparison and refinement. Themes were developed inductively from the data while remaining attentive to the study's research questions.
3. Analytical synthesis: Descriptive themes were further abstracted into analytical themes representing overarching patterns across the literature. Relationships between themes were mapped to develop a comprehensive understanding of the ethical landscape.

This synthesis enabled the identification of common ethical challenges, institutional governance strategies, and gaps in existing AI policy frameworks. The findings formed the basis for developing a systematic framework and evidence-based policy recommendations for higher education institutions.

Quality Appraisal

While formal quality assessment tools were not applied due to the conceptual and heterogeneous nature of the included studies, attention was given to the credibility, methodological clarity, and relevance of each study during data extraction and synthesis. Studies lacking clear methodology or substantive engagement with AI ethics in higher education were excluded during the full-text review stage.

Results

Following the PRISMA-guided selection process, 55 studies published between 2022 and November 2025 were included in the analysis. The findings were synthesized thematically to identify recurring ethical issues, governance mechanisms, and policy-oriented responses related to artificial intelligence (AI) in higher education. To present the results systematically and transparently, the included studies were categorized according to their primary focus, the ethical concerns addressed, and the policy or governance implications, and were summarized in the tables below. Tables 2-5 summarize the distribution of studies across these analytical dimensions.

Table 2. Distribution of Studies by Main Focus Area, Ethical Issues, and Governance Orientation

Focus Area	Representative Studies	Main Ethical Issues	Governance Orientation
AI ethics awareness and attitudes	Airaj (2024); Asiksoy (2024); Alfahl (2025); Mumtaz et al. (2025)	Ethical awareness, fairness, responsibility	Implicit
Student perspectives on AI ethics	Alnsour et al. (2025a); Grieve et al. (2024); Usher et al. (2025); Villarino (2024)	Academic integrity, equity, access	Limited
Faculty and staff perspectives	Malik et al. (2025); Ravi et al. (2025); Hamerman et al. (2025); Holmes et al. (2023)	Accountability, professional ethics	Partial
Academic integrity and assessment	Evangelista (2025); Gallent-Torres et al. (2023); Bannister et al. (2024a); Tong et al. (2025)	Plagiarism, authorship, assessment validity	Explicit
Institutional AI policies and guidelines	Chan (2023); An et al. (2025); Humble (2025); Spivakovsky et al. (2023)	Transparency, acceptable use	Explicit
Governance and regulatory frameworks	Jin et al. (2025); Jiang et al. (2025); Kaya-Kasikci et al. (2025); Liu et al. (2025)	Regulation, oversight, compliance	Explicit
Ethical framework development	Cherner et al. (2025); González-Fernández et al. (2025); Castelló-Sirvent et al. (2024)	Trustworthy AI principles	Explicit
AI ethics education and literacy	Kong et al. (2023); Lan et al. (2025); Wang et al. (2025)	Ethical reasoning, reflection	Embedded
Equity and Global South contexts	Muringa (2025); Valdivieso & González (2025); Villarino (2024)	Digital divide, justice	Weak
Policy–practice alignment	Erhardt et al. (2025); Isaifan & Hasna (2025); El Baradei et al. (2025)	Implementation gaps	Uneven

Table 3. Ethical Issues Addressed in AI Ethics Research in Higher Education

Ethical Issue Category	Description	Representative Studies	Policy Relevance
Privacy and data protection	Student data collection, consent, surveillance	Holmes et al. (2023); Airaj (2024); Jin et al. (2025)	High
Academic integrity	Authorship, plagiarism, assessment fairness	Evangelista (2025); Gallent-Torres et al. (2023)	High
Algorithmic bias and fairness	Discriminatory outcomes and inequity	Valdivieso & González (2025); Muringa (2025)	High
Transparency and explainability	Opacity of AI systems	Cherner et al. (2025); González-Fernández et al. (2025)	Medium
Accountability	Responsibility for AI decisions	Chan (2023); Jiang et al. (2025)	Medium
Equity and access	Unequal access to AI tools	Villarino (2024); Nazir (2025)	Medium
Autonomy and agency	Control over AI use	Usher et al. (2025); Ravi et al. (2025)	Emerging

Table 4. Institutional Responses to AI Ethics in Higher Education

Response Type	Description	Representative Studies	Level of Formalization
Formal institutional AI policies	University-wide AI governance documents	Chan (2023); Humble (2025); An et al. (2025)	High
Temporary or provisional guidelines	Interim rules for AI use	Bannister et al. (2024b); Tong et al. (2025)	Medium
Discipline-specific approaches	Localized departmental policies	Evangelista (2025); Grieve et al. (2024)	Medium
Reliance on existing integrity policies	Extension of plagiarism rules	Gallent-Torres et al. (2023)	Low
Absence of formal guidance	Ad hoc or informal practices	Villarino (2024); Muringa (2025)	Very low

Table 5 Gaps and Challenges Identified in AI Ethics Management

Gap Area	Description	Supporting Studies	Implications
Limited institutional AI governance	Few comprehensive policies	Humble (2025); Jin et al. (2025)	Ethical risk
Fragmented governance structures	Poor coordination across units	Erhardt et al. (2025)	Inconsistent practice
Low AI ethics literacy	Limited training for staff and students	Malik et al. (2025); Kong et al. (2023)	Misuse of AI
Equity-oriented policy absence	Global South underrepresented	Muringa (2025); Valdivieso & González (2025)	Widening gaps
Lack of policy evaluation	No assessment of effectiveness	Jiang et al. (2025); Isaifan & Hasna (2025)	Weak accountability

Synthesis of Findings

Overall, the synthesized findings reveal a fragmented and uneven landscape of AI ethics management in higher education. As shown in Tables 2–4, the majority of studies focus on ethical awareness, academic integrity, and stakeholder perceptions; however, only a limited subset translates these concerns into explicit, institution-wide governance mechanisms. While ethical risks such as privacy, academic integrity, and algorithmic bias are consistently identified as high-priority issues (Table 3), institutional responses remain largely reactive, provisional, or localized rather than strategic and comprehensive (Table 4). Moreover, Table 5 highlights persistent structural gaps, including limited AI governance capacity, low levels of AI ethics literacy, and weak alignment between policy formulation and practice. Notably, equity-oriented and Global South perspectives are underrepresented, suggesting that existing governance approaches risk reinforcing rather than mitigating systemic inequalities. Taken together, these patterns indicate that current AI ethics efforts in higher education are characterized more by ethical recognition than by effective governance implementation, underscoring the need for integrated, institution-level frameworks that connect ethical principles, stakeholder engagement, and enforceable policy mechanisms.

Discussion

This systematic review set out to examine how ethical challenges associated with artificial intelligence (AI) in higher education have been conceptualized, addressed, and governed in recent scholarship. The synthesis of 55 studies published between 2022 and November 2025 reveals a rapidly evolving research landscape marked by

heightened ethical sensitivity, fragmented institutional responses, and persistent governance gaps.

Mapping Findings to Research Questions

Before examining the substantive implications of these findings, it is helpful to summarize how the evidence addresses the study's guiding research questions:

RQ1 (Ethical Issues): The review reveals that privacy, data protection, academic integrity, and algorithmic bias constitute the most frequently identified ethical concerns. These issues are characterized by high visibility, immediate consequences, and direct regulatory relevance, which accounts for their prominence in institutional discourse (Holmes et al., 2023; Evangelista, 2025; Gallent-Torres et al., 2023).

RQ2 (Governance Frameworks): Institutional responses to AI ethics exhibit considerable variability, ranging from comprehensive university-wide policies (Chan, 2023; Humble, 2025) to provisional guidelines, discipline-specific approaches, and informal practices (Tong et al., 2025; Muringa, 2025). Transnational higher education contexts reveal additional complexity, as institutions operating across cultural and regulatory boundaries must navigate diverse ethical traditions and legal frameworks when developing coherent AI policies (Bannister et al., 2024). An analysis of instructor-level policies embedded in course syllabi reveals substantial variation in messaging to students about AI use, with guidelines ranging from permissive to prohibitive, often within the same institution, which contributes to student confusion and inconsistent application (Tong et al., 2025). The majority of responses remain in early-stage or exploratory phases, reflecting limited strategic integration of AI ethics into institutional governance structures.

RQ3 (Governance Gaps): Persistent gaps include limited institutional AI governance capacity, fragmented coordination across academic and administrative units, low AI ethics literacy among faculty and students, underrepresentation of equity-oriented perspectives, and absence of systematic policy evaluation mechanisms (Jin et al., 2025; Kong et al., 2023; Valdivieso & González, 2025; Jiang et al., 2025).

RQ4 (Evidence-based Recommendations): Drawing from the identified governance gaps and stakeholder needs, the review proposes targeted recommendations for institutional practice. Key priorities include establishing centralized governance structures to reduce fragmentation (Jin et al., 2025), investing in systematic AI ethics literacy programs to enhance implementation capacity (Kong et al., 2023; Malik et al., 2025), developing robust policy evaluation mechanisms (Jiang et al., 2025), and ensuring equity-oriented, context-sensitive approaches that account for institutional diversity (Muringa, 2025; Valdivieso & González, 2025). These recommendations, detailed in the Recommendations section, translate identified deficits into actionable institutional strategies.

Collectively, the findings illustrate that while ethical concerns surrounding AI are now firmly established within higher education discourse, the translation of ethical awareness into coherent, institution-wide policy and governance structures remains uneven and incomplete.

Theoretical Implications

These findings align with institutional governance theories, which emphasize that organizational responses to external pressures are shaped by concerns over legitimacy, resource dependencies, and the diffusion of normative models across institutional fields (DiMaggio & Powell, 1983; Scott, 2014). The pattern of fragmented and provisional responses observed in this review reflects institutional isomorphism in an early stage, where institutions mimic early adopters without fully internalizing governance practices, as well as the absence of clear regulatory mandates that incentivize more comprehensive approaches.

Furthermore, the concentration of ethical responsibility at the individual level, rather than within institutional structures, aligns with critiques from responsible AI scholarship, which argues that ethical AI governance requires systemic accountability mechanisms rather than relying solely on individual judgment (Floridi et al., 2018; Jobin et al., 2019). The policy-practice gap identified in several studies (Erhardt et al., 2025; Isaifan & Hasna, 2025) aligns with implementation theory perspectives, which emphasize the challenges of translating normative policies into organizational routines and behavioral change (Lipsky, 2010).

A central pattern emerging from the analysis is the predominance of studies focused on individual-level perceptions, attitudes, and ethical awareness among students and academic staff (supported by Airaj (2024); Asiksoy (2024); Alnsour et al. (2025a); Usher et al. (2025)). This emphasis reflects the immediacy with which AI technologies—particularly generative systems—have entered everyday academic practice, often ahead of institutional regulation. By foregrounding stakeholder experiences, this body of research provides valuable insight into how AI is interpreted, negotiated, and normalized within teaching and learning contexts. However, the concentration on individual perspectives also reveals a conceptual limitation: ethical responsibility is frequently framed as a matter of personal judgment or professional conduct rather than as an institutional obligation embedded within governance structures (cf. Malik et al. (2025); Ravi et al. (2025)). This tendency risks shifting the burden of ethical decision-making onto individuals while leaving systemic conditions largely unexamined.

In contrast, studies that explicitly address institutional governance, policy development, and regulatory frameworks remain comparatively scarce. Where such studies do exist, they often describe early-stage or provisional responses, suggesting that many higher education institutions are still in an exploratory phase of AI governance. This imbalance between ethical discourse and formal governance mechanisms highlights a critical tension: AI technologies are increasingly integrated into core academic functions, yet the institutional capacity to manage their ethical implications has not developed at a commensurate pace. As a result, higher education finds itself navigating ethical challenges through fragmented and often reactive approaches.

The dominance of privacy, data protection, and academic integrity within the ethical discourse (Holmes et al., 2023; Evangelista, 2025; Gallent-Torres et al., 2023) further reflects the reactive nature of current responses. These issues are apparent, immediately consequential, and closely tied to regulatory compliance, making them natural focal points for institutional concern. The prominence of academic integrity, in particular, highlights the disruptive impact of generative AI on assessment practices, authorship norms, and conceptions of legitimate

academic work. However, the literature suggests that responses to these challenges frequently rely on extending existing integrity frameworks rather than rethinking assessment and learning design in light of AI's transformative potential. This approach may offer short-term clarity but risks entrenching defensive strategies that prioritize control over pedagogical innovation.

More conceptually complex ethical issues, such as autonomy, transparency, explainability, and accountability, receive comparatively less sustained attention. The marginalization of these concerns is significant, as they relate directly to questions of power, agency, and trust within higher education institutions. AI systems increasingly shape decision-making processes that affect students and staff, yet their inner workings often remain opaque. Without explicit attention to transparency and accountability, institutions risk normalizing AI-driven processes that undermine academic autonomy and erode confidence in institutional decision-making. The uneven engagement with these ethical dimensions suggests that current governance efforts may be addressing symptoms rather than the structural transformations introduced by AI.

Institutional responses to AI ethics, as identified in this review, reveal considerable variability in scope, coherence, and formality. Some institutions have developed comprehensive AI policies that articulate ethical principles, guidelines for acceptable use, and governance responsibilities (Chan, 2023; Humble, 2025; An et al., 2025). However, many more rely on interim measures, such as discipline-specific guidelines or informal recommendations issued by teaching and learning units (Evangelista, 2025; Grieve et al., 2024; Tong et al., 2025). While such approaches allow flexibility during periods of technological uncertainty, they also create fragmented governance environments in which ethical standards vary across departments and programs. This fragmentation complicates implementation, weakens accountability, and may lead to inconsistent experiences for students and staff.

The dispersion of governance responsibilities across multiple institutional actors further exacerbates these challenges. Ethics committees, academic boards, data protection offices, and teaching support units often operate in parallel, with limited coordination or shared oversight. In such contexts, AI ethics governance becomes diffused rather than centralized, reducing institutional capacity to respond systematically to emerging risks. The literature reviewed here suggests that without clearly defined roles and integrative governance structures, ethical oversight of AI use remains vulnerable to gaps, overlaps, and ambiguities.

A particularly salient finding concerns the role of AI ethics literacy as a mediating factor in effective governance. Several studies highlight that limited understanding of AI systems among faculty and students constrains the practical impact of policies and guidelines. Even well-articulated ethical frameworks may fail to influence practice if stakeholders lack the conceptual tools needed to interpret and apply them. This insight highlights the interdependence of governance and education: effective ethical AI management necessitates not only policies and regulations but also sustained investment in professional development and curricular integration. Ethics, in this sense, becomes not merely a regulatory concern but a pedagogical one.

The review also reveals significant equity-related blind spots within the current literature. While issues of fairness

and bias are frequently acknowledged, fewer studies engage deeply with structural inequalities across institutional and national contexts. Research from under-resourced institutions and Global South settings highlights how uneven access to AI tools, infrastructure, and training may exacerbate existing educational disparities. However, these perspectives remain underrepresented in policy-oriented discussions, which often implicitly assume resource-rich environments. This imbalance raises concerns about the universality of proposed governance frameworks and highlights the need for context-sensitive approaches that take into account institutional diversity.

Another notable gap concerns the evaluation of AI ethics policies and governance mechanisms. Few studies provide empirical evidence regarding the effectiveness of existing policies or examine how ethical guidelines influence practice over time. This absence of evaluative research limits the field's capacity to move beyond normative recommendations toward evidence-based governance. Without systematic assessment, institutions risk adopting symbolic or performative policies that signal ethical commitment without producing meaningful change. The development of robust evaluation mechanisms thus emerges as a critical frontier for future research and institutional practice.

Taken together, the findings of this review suggest that AI ethics in higher education is characterized by a growing recognition of ethical risk, coupled with fragmented and uneven governance responses (supported by the patterns identified across (Humble, 2025; Jin et al., 2025; Erhardt et al., 2025; Muringa, 2025). Ethical awareness has expanded rapidly, particularly among individual actors, yet institutional structures have struggled to keep pace with the scale and speed of technological change. Addressing this misalignment requires a shift from ad hoc, reactive measures toward comprehensive and integrated governance frameworks that embed ethical considerations into the core missions of teaching, learning, research, and administration.

Such a shift entails reconceptualizing AI ethics not as a peripheral compliance issue but as a foundational component of institutional strategy. Effective AI ethics management must integrate ethical principles, governance structures, stakeholder education, and continuous evaluation within a coherent framework. Only through such an approach can higher education institutions navigate the ethical complexities of AI in ways that uphold academic values, promote equity, and support sustainable innovation.

Alternative Perspectives and Counter-Arguments

It is important to acknowledge alternative interpretations of the findings. The prevalence of provisional and fragmented governance approaches may not solely reflect institutional inadequacy; it could also represent a deliberate strategy of cautious adaptation in the face of technological uncertainty. Some scholars argue that premature formalization of AI policies may constrain innovation and pedagogical experimentation, particularly when the long-term implications of AI technologies remain unclear (Selwyn, 2019; Williamson & Eynon, 2020). From this perspective, provisional guidelines offer valuable flexibility, allowing institutions to learn from experience and adjust policies iteratively rather than locking in approaches that may prove inappropriate as AI capabilities evolve.

Similarly, the fragmentation of governance across departments and disciplines may not be entirely harmful. Discipline-specific approaches can enable contextually appropriate responses that reflect the distinct ethical considerations arising in different fields—for example, the specific challenges of AI use in healthcare education versus humanities disciplines (Grieve et al., 2024; Evangelista, 2025). A degree of decentralization may also preserve the academic autonomy valued in higher education traditions. Nevertheless, the evidence suggests that without some coordination mechanism, fragmentation risks producing inconsistent standards and inequitable experiences for students across the same institution.

Methodological Limitations

Several methodological limitations should be acknowledged when interpreting these findings. First, the majority of included studies rely on self-reported data from surveys and interviews, which may be subject to social desirability bias and may not accurately reflect actual practices. Second, there is a notable predominance of studies from Anglo-Saxon and Western contexts (primarily the United States, United Kingdom, Australia, and Europe), which limits the generalizability of findings to other institutional and cultural contexts. Third, many policy-oriented studies analyze normative documents rather than examining implementation outcomes, leaving questions about the practical effectiveness of stated policies largely unanswered. Finally, the rapid evolution of AI technologies and the relative novelty of the research field mean that the evidence base remains limited, and longitudinal studies examining the durability and effectiveness of governance approaches are largely absent.

Contributions of This Study

This review makes three primary contributions to the literature. First, it provides a conceptual contribution by offering a comprehensive synthesis of the ethical issues associated with AI in higher education, clarifying the conceptual landscape and identifying which concerns have received sustained attention and which remain underexplored. The analysis highlights the distinction between immediate, high-visibility ethical issues such as privacy and academic integrity, and more structurally significant but less frequently addressed concerns, including autonomy, transparency, and accountability.

Second, the study offers a governance and policy contribution by systematically mapping institutional responses to AI ethics. This review presents a typology of governance approaches—ranging from comprehensive policies to provisional guidelines to informal practices—that can inform institutional self-assessment and policy development. The identification of persistent governance gaps provides a diagnostic framework for institutions seeking to strengthen their AI ethics management.

Third, the review makes a significant contribution to the research agenda by identifying critical directions for future research. These include the need for evaluative studies examining policy effectiveness. These interdisciplinary approaches integrate educational, legal, and organizational perspectives, as well as context-sensitive research that attends to equity concerns and perspectives from the Global South.

Conclusion

The rapid diffusion of artificial intelligence across higher education has fundamentally altered how teaching, learning, assessment, and academic governance are conceptualized and enacted. This systematic review demonstrates that, while ethical concerns surrounding AI are now firmly embedded in scholarly and institutional discourse, higher education has yet to develop governance frameworks that are sufficiently comprehensive, coherent, and context-sensitive to manage these challenges effectively. The findings suggest that ethical awareness has expanded more rapidly than institutional capacity, creating a persistent gap between technological adoption and ethical oversight.

By synthesizing evidence from 55 studies published between 2022 and November 2025, this review provides a structured understanding of the ethical issues, governance responses, and systemic gaps that shape AI integration in higher education. The literature reveals a strong focus on immediate and visible concerns—particularly privacy, data protection, and academic integrity—while more complex ethical dimensions such as autonomy, transparency, accountability, and equity remain underdeveloped in policy and practice. This imbalance reflects a broader tendency toward reactive governance, in which institutions respond to emerging risks without fully addressing the structural transformations introduced by AI technologies.

Notably, the review highlights that ethical AI management cannot be reduced to policy formulation alone. Effective governance requires alignment among ethical principles, institutional structures, stakeholder competencies, and evaluative mechanisms. Fragmented and provisional approaches, although understandable in periods of rapid technological change, risk producing inconsistent standards and uneven protection for students and staff. In contrast, integrated frameworks that embed ethics into institutional strategy offer greater potential for sustaining both innovation and academic values.

The findings also underscore the need to situate AI ethics governance within the diverse realities of higher education systems worldwide. Variations in institutional resources, digital infrastructure, and regulatory environments shape both the risks and opportunities associated with AI use. Without deliberate attention to equity and contextual adaptation, AI governance frameworks may inadvertently reinforce existing inequalities rather than mitigate them. Future efforts must therefore move beyond universalistic policy templates toward flexible models that can be meaningfully adapted across contexts.

From a research perspective, this review identifies several directions for advancing the field. Greater emphasis is needed on evaluative and longitudinal studies that examine how AI ethics policies function in practice and evolve over time. Similarly, interdisciplinary approaches that integrate educational theory, ethics, law, and organizational studies are essential for capturing the full complexity of AI governance in higher education. Such work will be critical for moving the field from normative debate toward evidence-based institutional action.

In conclusion, managing AI ethics in higher education represents not a temporary challenge but a defining task for contemporary academic institutions. As AI technologies continue to reshape educational practices, the

development of robust, inclusive, and adaptive ethical governance frameworks will be central to safeguarding academic integrity, promoting equity, and sustaining trust in higher education. This review provides a foundation for such efforts by clarifying current knowledge, exposing critical gaps, and offering a roadmap for future research and policy development in this rapidly evolving domain.

Recommendations

Based on the synthesis of current literature, higher education institutions are encouraged to adopt comprehensive, integrated AI ethics frameworks that align ethical principles with governance structures, stakeholder education, and continuous evaluation. Policies should explicitly address privacy, data protection, academic integrity, transparency, and equity, while remaining adaptable to diverse institutional contexts and resource capacities. Investments in faculty and student AI literacy, combined with interdisciplinary oversight mechanisms, can enhance the responsible adoption of AI and foster trust. Furthermore, institutions should systematically evaluate the effectiveness of policies and guidelines over time, ensuring that AI integration supports pedagogical innovation, upholds academic values, and mitigates unintended ethical and social consequences.

Author(s)' Statements on Ethics and Conflict of Interest

***Ethics Statement*:** As this study involved secondary analysis of published literature, formal ethical approval was not required. All included studies were properly cited and used in accordance with copyright and fair use principles.

***Statement of Interest*:** We have no conflict of interest to declare.

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