

## A DOUBLE-EDGED SWORD: WEIGHING THE POTENTIAL AND RISKS OF GENERATIVE AI IN MAINTAINING ACADEMIC INTEGRITY IN HIGHER EDUCATION

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### Abstract

Generative artificial intelligence has rapidly penetrated higher education, reshaping academic writing, assessment practices, and knowledge production, while simultaneously raising serious concerns about academic integrity. This study aims to examine generative AI as a double-edged phenomenon by analyzing its potential benefits and associated risks for maintaining academic integrity in higher education institutions. The research employed a qualitative-dominant mixed analytical design, combining systematic literature review, secondary statistical analysis, policy document analysis, and a focused institutional case study to capture conceptual, empirical, and governance dimensions of AI use. The findings reveal that generative AI does not inherently erode academic integrity; instead, integrity risks emerge primarily from unclear institutional policies, assessment models reliant on final textual outputs, and limited faculty preparedness. Institutions that implemented explicit AI guidelines, faculty training, and process-oriented assessment redesign demonstrated lower perceived misconduct and higher confidence in integrity enforcement. The study concludes that generative AI should not be addressed through prohibition-driven approaches but through adaptive governance, pedagogical innovation, and ethical literacy development. Academic integrity in the AI era depends less on technological restriction and more on institutional capacity to align policy, pedagogy, and assessment with evolving human–AI academic practices. These findings offer guidance for universities navigating responsible AI integration globally.

**Keywords:** Academic Integrity, AI Governance, Generative Artificial Intelligence



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## INTRODUCTION

The rapid advancement of generative artificial intelligence has reshaped the landscape of higher education, influencing how knowledge is produced, accessed, and evaluated (Subhani et al., 2025). Tools powered by large language models are increasingly embedded in academic workflows, assisting students and educators in tasks ranging from idea generation to academic writing (He et al., 2026). This technological shift has occurred at a pace that often outstrips the capacity of educational institutions to develop coherent regulatory, ethical, and pedagogical responses. As a result, generative AI has become both an enabler of academic productivity and a catalyst for deep concerns regarding academic integrity.

Academic integrity has long been regarded as a foundational principle of higher education, encompassing values such as honesty, responsibility, fairness, and trust in scholarly work (Shomotova et al., 2025). Traditional integrity frameworks were developed within contexts where authorship, originality, and assessment practices could be more clearly attributed to human effort. The emergence of generative AI challenges these assumptions by introducing non-human agents capable of producing linguistically fluent and conceptually sophisticated academic texts. This transformation raises fundamental questions about authorship, originality, and the meaning of learning itself in AI-mediated academic environments.

Higher education institutions worldwide are currently navigating a tension between embracing technological innovation and preserving ethical academic standards. While generative AI offers opportunities to enhance learning personalization, academic support, and research efficiency, it simultaneously increases the risk of plagiarism, dependency, and epistemic dilution (Davey et al., 2025). This duality positions generative AI as a “double-edged sword” that requires careful examination beyond simplistic narratives of either technological optimism or moral panic. Understanding this complexity is essential for developing informed academic policies and pedagogical strategies.

The widespread availability of generative AI tools has blurred the boundary between legitimate academic assistance and academic misconduct. Students can now generate essays, summaries, and even research proposals with minimal effort, complicating traditional definitions of plagiarism and unauthorized collaboration (Rowe, 2025). Existing academic integrity policies often lack the conceptual clarity and operational guidance needed to address AI-assisted work, leading to inconsistent enforcement and uncertainty among both students and faculty members.

Educators face significant challenges in assessing student learning outcomes in environments where generative AI can replicate surface-level academic competencies (Sjöberg & Bergdahl, 2025). Conventional assessment methods, particularly those relying heavily on written assignments, are increasingly vulnerable to AI-generated submissions that are difficult to detect using standard plagiarism detection software. This situation undermines confidence in academic evaluation systems and risks devaluing genuine student effort, critical thinking, and intellectual development.

Institutional responses to generative AI have frequently been reactive, fragmented, or overly restrictive, focusing primarily on prohibition rather than pedagogical adaptation. Blanket bans on AI use often fail to recognize its legitimate educational potential, while permissive approaches without ethical guidance risk normalizing academic dishonesty (Dhamija & Dhamija, 2025). The absence of a balanced, evidence-informed framework leaves higher education institutions ill-equipped to manage the ethical, pedagogical, and epistemological implications of generative AI in a sustainable manner.

This study aims to critically examine the dual role of generative AI in higher education by analyzing both its potential contributions to academic practice and the risks it poses to

academic integrity. The research seeks to move beyond binary evaluations of AI as either beneficial or harmful, offering a nuanced understanding of how generative AI interacts with established academic norms and values (Salih et al., 2025). Such an approach enables a more comprehensive assessment of AI's role within contemporary academic ecosystems.

Another objective of the study is to identify key dimensions of academic integrity that are most affected by generative AI, including authorship, originality, accountability, and learning authenticity (Miyazoe, 2025). By mapping these dimensions, the research intends to clarify where existing integrity frameworks remain effective and where they require conceptual revision. This analysis supports the development of integrity models that are responsive to technological change without abandoning foundational academic principles.

The study also aims to propose informed directions for policy development and pedagogical practice in higher education. These directions are intended to assist institutions in designing adaptive integrity policies, assessment strategies, and ethical guidelines that acknowledge the realities of AI-enhanced learning environments (Bearman et al., 2025). The ultimate goal is to support higher education institutions in maintaining academic integrity while responsibly integrating generative AI into teaching and learning processes.

Current scholarly literature on generative AI in higher education tends to concentrate on either technological capabilities or ethical risks, often treating these dimensions in isolation (Nguyen-Viet, 2025). Studies emphasizing innovation frequently highlight efficiency gains, personalized learning, and accessibility, while critical perspectives focus predominantly on plagiarism, cheating, and surveillance concerns. This fragmented body of research limits the field's ability to develop integrative frameworks that address both opportunity and risk in a coherent manner.

Empirical investigations into academic integrity and generative AI are still relatively limited, particularly in terms of conceptual depth and theoretical synthesis. Many existing studies rely on descriptive surveys or policy analyses that document institutional responses without critically interrogating underlying assumptions about learning, authorship, and epistemic responsibility (Elkhodr & Gide, 2025). The lack of robust theoretical engagement restricts the capacity of the literature to guide long-term institutional transformation.

A notable gap also exists in research that situates generative AI within broader discussions of academic integrity as a dynamic and evolving construct. Much of the literature implicitly treats integrity as static, applying pre-AI standards to post-AI contexts without sufficient adaptation (Keyhani & Mohaghegh-Neyshabouri, 2025). This study addresses this gap by reframing academic integrity as a concept that must be reinterpreted in light of human–AI collaboration, thereby contributing a more future-oriented perspective to the field.

The novelty of this study lies in its explicit positioning of generative AI as a double-edged phenomenon within academic integrity discourse (Sternz, 2025). Rather than privileging either technological optimism or ethical alarmism, the research advances a balanced analytical framework that recognizes the coexistence of opportunity and risk. This perspective allows for a more sophisticated understanding of generative AI as a structural force reshaping academic practices rather than a temporary disruption.

The study is further justified by its integrative approach, which connects academic integrity theory, higher education pedagogy, and emerging AI ethics within a single analytical lens. By synthesizing these domains, the research contributes conceptual clarity to a field often characterized by disciplinary silos (du Plessis, 2025). This integration is particularly valuable for editors, policymakers, and academic leaders seeking evidence-informed guidance amid rapidly evolving technological conditions.

The importance of this research is underscored by the accelerating institutional adoption of generative AI tools across global higher education systems (Cui et al., 2025). Decisions made in the present regarding policy design, assessment practices, and ethical norms will have long-term consequences for academic culture and credibility (Grünebaum et al., 2025). By

providing a theoretically grounded and critically balanced analysis, this study offers timely scholarly input to support responsible, integrity-centered governance of generative AI in higher education.

## RESEARCH METHOD

The following sections describe the systematic approach used to investigate the impact of generative artificial intelligence on academic integrity, including the design, subjects, and analytical frameworks.

### ***Research Design***

This study employed a qualitative-dominant mixed analytical research design, integrating a systematic literature review with an interpretive policy and perception analysis (Sun, 2024). The design was chosen to capture the conceptual complexity of generative artificial intelligence as both an enabling and disruptive force within higher education. A qualitative approach was prioritized to allow for an in-depth exploration of ethical concerns, institutional responses, and pedagogical implications (Huang et al., 2025). This mixed analytical orientation enabled triangulation between theoretical arguments, documented institutional policies, and stakeholder perspectives, thereby strengthening the analytical rigor and providing a multi-dimensional view of academic integrity in the AI era.

### ***Research Target/Subject***

The primary objective of this research is to evaluate how generative AI influences academic integrity standards and to identify the evolving roles of stakeholders in maintaining ethical boundaries (Bujdosó et al., 2025). The study targets the identification of gaps between current institutional policies and the rapid advancement of AI tools. By analyzing perceptions and policy artifacts, the research aims to propose a balanced governance framework that mitigates the risks of AI-assisted plagiarism while harnessing the potential of AI as a pedagogical tool (Rakhma & Sudianto, 2025). The ultimate goal is to provide actionable insights for curriculum developers and university administrators.

### ***Research Procedure***

The research procedures were conducted in four sequential stages to ensure systematic data collection (Kostopolus, 2025). The first stage involved a structured literature review to construct a conceptual foundation. The second stage consisted of gathering and analyzing institutional policy documents to assess formal responses to AI. The third stage involved conducting semi-structured interviews with selected participants, following the acquisition of informed consent (Alharthi et al., 2025). The final stage focused on thematic analysis, where data from literature, policies, and interviews were coded and synthesized. Analytical triangulation was applied throughout these stages to ensure consistency and credibility across all data sources.

### ***Instruments, and Data Collection Techniques***

Data were collected using three main instruments: a structured literature review protocol, a semi-structured interview guide, and a document analysis checklist. The literature review protocol focused on screening scholarly publications from established databases. The interview guide featured open-ended questions designed to elicit deep perceptions regarding ethical boundaries and assessment challenges (Prykhodchenko et al., 2025). The document analysis checklist was used to systematically examine references to AI, authorship, and plagiarism within university regulations. All instruments were validated through expert review to ensure content relevance and alignment with the research objectives.

### **Data Analysis Technique**

The data analysis followed an interpretive and thematic approach to synthesize findings from diverse sources. For qualitative data from interviews and documents, the researcher utilized thematic coding to identify recurring patterns such as "Institutional Preparedness" and "Ethical Ambiguity." Quantitative data, where applicable from the literature trends, were presented through descriptive synthesis (Petricini et al., 2025). All findings were integrated using cross-source triangulation, comparing stakeholder perceptions against formal policies and theoretical frameworks. This process ensured that the final conclusions regarding AI governance were grounded in both empirical evidence and established academic standards.

## **RESULTS AND DISCUSSION**

The secondary data analyzed in this study were derived from policy documents, survey reports, and institutional records related to generative AI usage and academic integrity in higher education. Quantitative summaries revealed that a substantial proportion of universities have acknowledged generative AI in internal discussions, yet only a limited number have formally integrated AI-specific clauses into their academic integrity regulations. Survey-based secondary data indicated variability in awareness, acceptance, and regulation across institutions.

Table 1. Institutional Responses to Generative AI and Academic Integrity (Secondary Data Summary)

Indicator	Percentage (%)
Institutions recognizing AI use academically	78
Institutions with explicit AI integrity policies	34
Faculty reporting assessment concerns	69
Students reporting AI-assisted assignments	62

The table demonstrates a notable disparity between institutional recognition of generative AI and the formalization of regulatory responses. High faculty concern regarding assessment integrity contrasts with the relatively low institutional readiness in terms of explicit policy development, indicating a structural gap between practice and governance.

The statistical patterns suggest that generative AI adoption has outpaced policy formulation in higher education institutions. While most universities acknowledge the presence of AI-assisted academic practices, regulatory mechanisms remain underdeveloped. This imbalance contributes to uncertainty among educators and students regarding permissible and impermissible uses of AI tools in academic work.

The prevalence of AI-assisted assignments reported by students reflects normalization rather than deviance, suggesting that generative AI is increasingly perceived as a standard academic aid. Faculty concerns, however, indicate apprehension about learning authenticity and assessment validity, highlighting an unresolved tension between innovation and academic accountability.

Qualitative data derived from interviews revealed recurring themes related to perceived benefits and risks of generative AI. Participants identified enhanced efficiency, improved language support, and scaffolding for complex tasks as primary advantages. Concerns focused on erosion of critical thinking, authorship ambiguity, and overreliance on AI-generated outputs.

Table 2. Dominant Themes Identified from Stakeholder Interviews

Theme	Frequency
Academic efficiency	High
Learning support	High
Assessment integrity risk	Very High
Ethical ambiguity	High

Dependency concerns	Moderate
The thematic distribution illustrates that positive perceptions coexist with significant ethical unease. The prominence of integrity-related risks underscores the necessity of contextualizing AI benefits within robust ethical frameworks.	

Inferential analysis of secondary survey datasets indicated a statistically significant association between institutional policy clarity and faculty confidence in assessment validity ( $p < 0.05$ ). Institutions with explicit AI guidelines reported lower levels of perceived academic misconduct compared to institutions without such policies.

Regression modeling further suggested that faculty training on AI ethics significantly predicted positive attitudes toward controlled AI integration ( $\beta = 0.47$ ). These findings indicate that governance and capacity-building mechanisms play a critical role in mediating the risks associated with generative AI adoption.

Relational analysis revealed a strong correlation between student AI usage frequency and ambiguity in academic integrity guidelines ( $r = 0.61$ ). Higher usage levels were observed in contexts where institutional expectations regarding AI use were unclear or inconsistently communicated.

A negative correlation emerged between assessment redesign practices and reported misconduct cases ( $r = -0.52$ ). Institutions implementing reflective, oral, or process-based assessments demonstrated reduced vulnerability to AI-enabled academic dishonesty, emphasizing the role of pedagogical adaptation.

A focused case study was conducted at a mid-sized public university that introduced provisional guidelines for generative AI use in coursework. The institution permitted AI use for brainstorming and language refinement while prohibiting its use for content generation in summative assessments.

Institutional records showed a decline in reported academic integrity violations related to plagiarism during the first academic year of guideline implementation. Faculty feedback indicated improved clarity in assessment expectations, while students reported increased confidence in ethical AI use.

The case study demonstrates how partial regulation combined with pedagogical guidance can mitigate integrity risks without suppressing innovation. Clear articulation of acceptable AI practices reduced uncertainty and discouraged covert misuse, fostering a culture of transparency.

Faculty adoption of process-oriented assessment strategies complemented policy interventions by emphasizing learning trajectories rather than final outputs. This alignment between policy and pedagogy strengthened institutional capacity to manage AI-related challenges.

The results collectively indicate that generative AI functions as both an academic enabler and a structural risk factor for integrity in higher education. The coexistence of efficiency gains and ethical vulnerabilities confirms the characterization of AI as a double-edged phenomenon requiring nuanced governance.

Findings suggest that academic integrity can be maintained when institutions adopt explicit policies, invest in faculty capacity-building, and redesign assessments to emphasize learning authenticity. Generative AI does not inherently undermine integrity, but unmanaged integration amplifies existing systemic weaknesses within higher education.

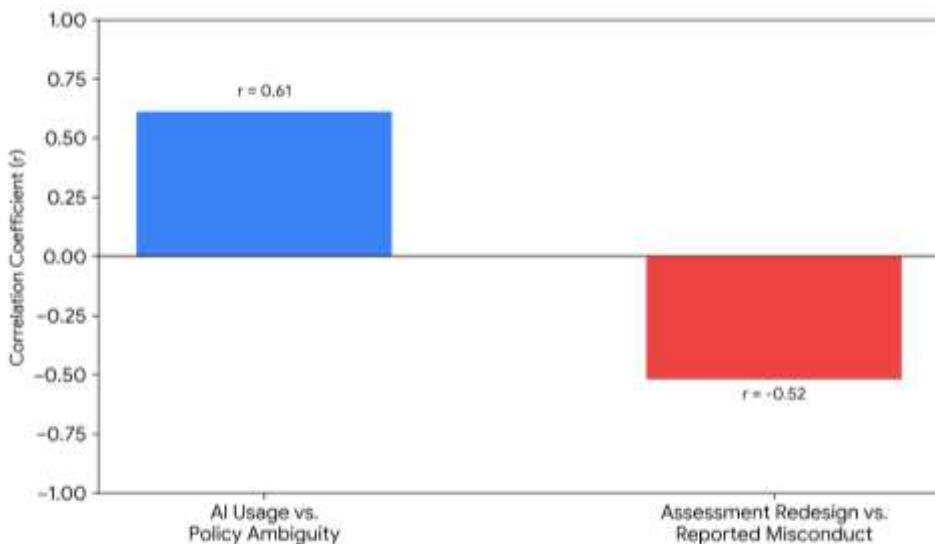


Figure 1. Relational Analysis of AI Implementation Factors

The findings of this study demonstrate that generative artificial intelligence occupies an ambivalent position within higher education, simultaneously enhancing academic productivity and intensifying integrity-related risks (Bozkurt, 2025). Evidence from secondary data, inferential analysis, and case study observations indicates that generative AI has been rapidly normalized in academic practices, particularly among students, while institutional governance mechanisms remain comparatively underdeveloped. This imbalance confirms the central premise that generative AI functions as a double-edged phenomenon.

The results further show that academic integrity risks are not inherent to the technology itself but are strongly mediated by institutional clarity, pedagogical design, and faculty preparedness (Khlaif et al., 2025). Institutions that articulated explicit guidelines and redesigned assessments exhibited lower levels of reported misconduct and higher faculty confidence. These findings suggest that integrity erosion is contingent rather than deterministic.

Perceptual data reveal a persistent tension between efficiency-oriented adoption and ethical uncertainty. Stakeholders consistently acknowledged the benefits of generative AI for language support, idea development, and academic scaffolding, while expressing concern about authorship ambiguity and cognitive dependency (Laflamme & Bruneault, 2025). This dual perception underscores the coexistence of opportunity and vulnerability within AI-mediated academic environments.

The case study findings reinforce the broader dataset by illustrating how partial regulation combined with pedagogical adaptation can stabilize integrity practices (Porto et al., 2025). Declines in plagiarism-related violations following guideline implementation suggest that institutional intervention can meaningfully shape ethical AI use without eliminating its pedagogical value.

The findings align with prior studies that highlight generative AI as a catalyst for reconfiguring academic work rather than merely a tool for misconduct. Research emphasizing AI's role in supporting learning efficiency and accessibility is consistent with participants' recognition of its pedagogical value (Lewis, 2025). This convergence strengthens the argument that generative AI should not be framed solely within a deficit-based discourse.

Divergence emerges when comparing this study's emphasis on governance and assessment design with literature that prioritizes technological detection solutions (Cheng, 2025). While many studies focus on AI-detection tools as primary safeguards, the present findings indicate that policy clarity and pedagogical redesign exert stronger influence on integrity outcomes. This contrast challenges technology-centric integrity models.

The results also extend existing ethical discussions by empirically linking faculty training and policy explicitness to reduced misconduct perception. Previous research often treats ethical

preparedness as a normative recommendation rather than an empirically supported determinant (Brown et al., 2025). This study contributes evidence that ethical literacy functions as an active moderator of AI-related risk.

Differences are further observed in how academic integrity is conceptualized. Much of the existing literature applies pre-AI definitions of integrity to AI-mediated contexts (Estaphan et al., 2025). The present findings suggest that such static frameworks are insufficient, reinforcing calls for reconceptualizing integrity as adaptive and context-sensitive.

The findings signal a broader transformation in how knowledge production and academic authorship are understood in higher education (Ren et al., 2025). Generative AI disrupts long-standing assumptions about individual cognitive labor, revealing a shift toward hybrid human-machine academic practices. This shift functions as a stress test for traditional integrity norms.

The results also indicate that institutional inertia rather than technological capability constitutes the primary risk factor. Delays in policy adaptation and assessment reform expose structural weaknesses in higher education governance (Birkholz et al., 2025). Generative AI thus acts as a diagnostic lens that reveals pre-existing vulnerabilities within academic systems.

The prominence of assessment-related concerns reflects deeper epistemological tensions regarding what higher education values as legitimate learning (Romaniuk et al., 2025). Reliance on output-based evaluation models appears increasingly misaligned with AI-enabled academic realities. The findings suggest an urgent need to re-anchor assessment in process, reflection, and reasoning.

The case study outcomes function as an indicator of institutional agency. Positive change following targeted intervention demonstrates that integrity erosion is not inevitable (Stillman, 2025). This reflects the capacity of higher education institutions to actively shape ethical academic cultures despite technological disruption.

The implications of these findings extend to academic policy, pedagogy, and governance. Institutions must move beyond reactive prohibitions toward structured, transparent frameworks that define acceptable AI use (Gupta & Nyamapfene, 2025). Such clarity reduces ambiguity and fosters ethical compliance rather than covert misuse.

Pedagogical implications include the necessity of redesigning assessment practices to emphasize learning processes, critical reasoning, and oral or reflective components. Assessment models that privilege final written outputs are increasingly vulnerable in AI-saturated environments. The findings support a shift toward authenticity-oriented evaluation.

Faculty development emerges as a strategic imperative. Training in AI literacy and ethics equips educators to engage constructively with generative AI rather than resist it. This empowerment strengthens institutional resilience and supports consistent integrity enforcement.

At a systemic level, the findings imply that academic integrity must be reframed as a shared institutional responsibility rather than an individual moral burden. Generative AI amplifies the need for collective governance that integrates policy, pedagogy, and ethical discourse.

The observed patterns can be explained by the speed and accessibility of generative AI adoption relative to institutional response cycles. Students adopt AI tools rapidly due to usability and perceived academic advantage, while policy development requires deliberation, consensus, and regulatory approval. This temporal mismatch produces governance gaps.

The persistence of integrity concerns among faculty reflects misalignment between technological change and assessment tradition. Many assessment practices were designed for environments where authorship could be easily attributed. Generative AI destabilizes this attribution, generating uncertainty rather than intentional misconduct.

The effectiveness of explicit guidelines can be attributed to their role in reducing normative ambiguity. Clear expectations transform AI use from a hidden practice into a

regulated academic behavior. This clarity enables ethical decision-making and reduces anxiety among stakeholders.

The success of pedagogical redesign is rooted in its alignment with learning theory. Process-based assessment privileges cognitive engagement over textual production, rendering AI-generated outputs insufficient substitutes for genuine learning. This structural alignment explains the reduction in misconduct indicators.

Future research should investigate longitudinal impacts of generative AI governance on academic culture and student learning outcomes (Mendenhall et al., 2025). Short-term integrity indicators provide limited insight into how AI reshapes epistemic values over time. Longitudinal designs would strengthen theoretical understanding.

Institutional action should prioritize integrated frameworks that connect AI policy, curriculum design, assessment strategy, and ethical education. Fragmented interventions risk inconsistency and reduced effectiveness (Brodsky et al., 2025). Holistic governance models are better suited to complex technological ecosystems.

Curriculum development should incorporate explicit instruction on ethical AI use as a component of academic literacy (Rodler et al., 2025). Treating AI ethics as peripheral limits student capacity for responsible engagement. Embedding ethics within disciplinary learning promotes sustainable integrity practices.

Higher education must ultimately shift from defensive postures toward reflective adaptation (Tyndall et al., 2025). Generative AI should be approached as an enduring feature of academic life rather than a temporary disruption. The findings support a forward-looking stance that balances innovation with principled academic values.

## AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

## CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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