

Drawing the line: A review on generative AI use in higher education

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Abstract

The rise of generative AI has created a shift in higher education, raising urgent questions about academic integrity, student learning, and ethical boundaries. As AI tools become mainstream, faculty and administrators face a dilemma: Should AI be integrated into teaching practices, carefully regulated, or restricted altogether? This review examines the current state of generative AI in higher education, identifies the associated risks and benefits, and explores both pedagogical strategies and institutional guidelines for ethical AI integration. Drawing on recent studies, this paper argues for a multilevel governance approach that emphasizes transparency, ethical awareness, and policies to balance innovation with integrity.

Keywords: generative AI, higher education, AI in education, risks of AI, benefits of AI.

1. Introduction

Generative AI tools such as ChatGPT, CoPilot, and Preplexity are no longer experimental technologies, for they are now embedded in the daily academic lives of students and educators. The adoption of such tools has sparked debates in higher education about whether AI should be embraced fully, embraced but heavily regulated, or prohibited altogether. Key questions educators around the world are asking include: Should assignments shift toward in-class production to prevent AI misuse? Should devices be banned during assessments? And most importantly, can students be trusted to use AI ethically without supervision? These are no longer

hypothetical concerns. A growing body of research highlights both the potential and the dangers of AI in academic settings. The rapid integration of AI in education demands both ethical reflection and pedagogical innovation. If universities fail to act, the result could be a widening of educational inequalities, erosion of critical thinking, and a crisis of academic integrity (Hasanah et al., 2025). This review will first examine the current state of AI adoption, then analyze the primary risks and competing institutional responses, and finally, propose a multi-stakeholder governance framework for ethical integration.

2. Generative AI in Higher Education: The Current Landscape

Many universities are going for the open but cautious approach to the integration of generative AI (GenAI). According to Wang et al. (2024), institutions are prioritizing ethical considerations, accuracy, and data privacy when drafting AI guidelines. Rather than opting for uniform rules, many universities encourage faculty to create AI policies that are specific to each discipline. This approach recognizes the contextual differences in how AI is relevant across various fields. Therefore, instead of presenting faculty with rules on what to do, universities are providing support in the form of syllabus templates addressing AI use, workshops on AI and pedagogy, and articles and consultations to guide faculty in responsible integration (Wang et al., 2024). At the same time, institutions still have concerns about equity and access issues. According to Vesna (2025), unequal access to AI tools and training may widen existing academic divides, creating a new digital literacy gap between students who can effectively use AI and those who cannot.

3. Risks of Unregulated AI Use

Despite the promise of AI-assisted education, there are many risks associated with unregulated use. The most immediate of these risks are the issue of academic integrity, skill erosion, and a new digital divide.

Because of the widespread use of GenAI in educational settings, traditional assessments are increasingly vulnerable. Huang et al. (2025) reveal that the availability of generative AI tools significantly heightens students' potential of academic dishonesty, with moral attitudes, peer norms, and perceived behavioral control influencing cheating behaviors mediated by AI (i.e. students weigh ease and acceptability). Similarly, Lee et al. (2024) demonstrate that following the introduction of tools like ChatGPT, self-reported incidents of cheating rose markedly, indicating not only growing misuse among learners. These studies suggest an alarming

trajectory. As AI systems become more powerful and accessible, the integrity of academic work is increasingly vulnerable, especially if students perceive cheating as socially tolerated and technically easy. What is more alarming is that there are easy or efficient ways to detect this dishonesty as Cotton et al. (2023) explain that plagiarism detection tools are often ineffective against AI-generated text, making it harder to enforce academic honesty.

Overreliance on AI tools may erode critical academic skills. Students risk outsourcing their analytical, writing, and problem-solving tasks to machines, which results in reducing opportunities for intellectual growth (de Fine Licht, 2024). Without guidance, students might skip learning processes, leading to superficial engagement and loss of disciplinary depth. This concern is echoed in the research done by Miranda et al. (2025), which found that AI dependency among university students is strongly associated with cognitive offloading and motivational decline. The study found that students who frequently rely on AI tools tend to disengage from deep cognitive tasks, such as critical evaluation and original idea generation. In addition, external academic pressures, such as deadlines and workload stress, can drive students toward AI reliance, putting essential academic competencies at risk. These findings suggest that without intentional pedagogical strategies, AI may shift the educational focus from intellectual development to task completion. This would undermine students' long-term academic and professional skills.

AI is also creating a new digital divide that extends beyond internet access and infrastructure. Students with stronger skills in navigating and applying AI tools are more likely to gain a competitive edge in higher education and later on the job market, while students with no access to such resources risk falling behind (Vesna, 2025). Prior exposure to technology and computational thinking skills is a key determinant of AI literacy, which further reinforces inequities between students from different socioeconomic backgrounds (Celik, 2023). Moreover, if the digital literacy and AI gap persists at the university level, it may result in unequal access to skilled jobs, thereby reinforcing existing social and economic disparities. In the long term, this divide could benefit individuals and institutions that have mastered AI, while marginalizing those that have not, thereby exacerbating inequalities in the professional world (Hadar Shoval, 2025a).

In higher education in the USA, for example, this gap is clear among first-generation and minority students, who benefit less from AI integration compared to those with technological readiness (Hadar & Shoval, 2025b). Therefore, without conscious interventions, the AI literacy

divide risks worsening existing educational inequalities and marginalizing learners who are already vulnerable.

4. Integration or Prohibition? Two Institutional Approaches to AI

4.1. Integration Strategies in Practice

Many institutions are shifting toward integrating generative AI into pedagogy instead of just banning it. In a study conducted in collaboration with 19 institutions in the US and Canada that participated in a project called Ithaka S+R's Making AI Generative for Higher Education, faculty across the 19 institutions have already been experimenting with embedding AI tools into assignments, rethinking learning outcomes, and calling for institutional support for ethical AI use (Baytas & Ruediger, 2025). Therefore, universities need to be aware of the responsibility of integrating AI and support faculty and students accordingly. After conducting a study in universities in Hong Kong, Chan (2023) proposes an AI ecological education policy framework for universities, combining pedagogical, governance, and operational dimensions to guide responsible adoption of AI in learning and teaching.

At the institutional level, some universities have started adopting the approach of AI as a tool not a replacement, which aims to encourage students to use AI for ideation, drafting, or revision while still showing their reasoning or reflective process (Wang et al., 2024). With the aim to support integration of AI in higher education, universities have been advised to guide their faculty to include explicit AI use policies in syllabi, scaffold assignments that combine AI and human work, and provide the said faculty with professional development opportunities to use and evaluate AI tools in their disciplines (Wang et al., 2024; Vieriu & Petrea, 2025).

4.2. The Case for Prohibition

On the other hand, some scholars argue that prohibition or strict restriction may be morally or practically justified under certain conditions. If an institution lacks the capacity for oversight, assessment redesign, or integrity safeguards, it may be ethically obliged to ban student use of generative AI tools such as ChatGPT for assessed work (de Fine Licht, 2024). Such bans might include device bans, going back to in-class or handwritten assessments, and having explicit academic integrity rules that forbid AI-generated content. This is done because, besides skill erosion, overreliance, other key concerns underpinning such prohibition include privacy and data risks, environmental and resource costs, and the still unproven learning gains (de Fine Licht, 2024). There are practical issues with prohibiting the use of AI in education. On the one

hand, because personal devices (such as laptops, tablets, and smartphones) are so common, it is getting harder to regulate their use in class or on digital platforms. On the other hand, such a ban could penalize students who are already less tech-savvy and create a gap between institutions that can enforce strict controls and those that can't (de Fine Licht, 2024).

The use of external AI services raises significant concerns about student data being shared, stored, or used by third parties without adequate safeguards. Many AI tools require access to sensitive student information to function, and this increases the risk of privacy breaches and misuse (Al-Zahrani, 2024). Because there is often limited transparency into how third-party providers manage this data, institutions may not have total control over how it is stored, processed, or repurposed (Gillani et al., 2023). Moreover, the reliance on external platforms may conflict with legal constraints; this means that it would be difficult to audit data flows or prevent unintended use (Bauer et al., 2025).

It is no secret that large language models consume significant energy. As these models become more accessible, their widely accepted adoption may exacerbate environmental burdens. Therefore, in resource-constrained settings, the cost may be a lot more than the benefit if unrestricted use continues (Rillig et al., 2023).

As there are benefits to integrating AI in higher education, there are also risks. While students often turn to tools like ChatGPT to improve work quality or manage stress, its overuse can lead to procrastination, reduced memory retention, and lower academic performance (Abbas et al., 2024). There is not enough empirical evidence on why students use tools like ChatGPT, nor its potential consequences, harmful or beneficial; therefore, its use should be approached with caution (Abbas et al., 2024; de Fine Licht, 2024).

4.3. The Middle Path: Contextual, Controlled Integration

Many institutions are trying to adopt a middle ground rather than pure binary integration or prohibition. de Fine Licht (2024) notes that the regulatory landscape is mixed, so while some institutions are welcoming, others discourage the use of AI. Scholars argue for contextual policies that allow AI use under supervision, transparency, or restricted domains rather than blanket bans, and they critique overly rigid prohibitions, suggesting a more flexible approach to AI integration (Cacho, 2024). From a comparative policy view, Zhang et al. (2025) show how leading universities across countries are crafting policies that are layered, that differentiate between formative and summative assessments, and that clearly state when it is permitted and

when it is prohibited to use AI for tasks, while creating committees to oversee these practices. In a similar vein, Huang et al. (2024) describe how some universities transitioned from bans toward more permissive, structured adoption, embedding AI literacy education along the way.

5. Mitigating Misuse: Pedagogical and Assessment Strategies

To prevent AI misuse while preserving academic rigor, a number of pedagogical and assessment strategies have been proposed and practiced in higher education. On-the-spot assignments conducted during class, process-based assessments requiring students to submit brainstorming notes, drafts with timestamps, and peer feedback reflections, reflective writing tasks that ask students to document their decision-making processes and context-specific prompts.

Conducting assignments during class time under supervision reduces the opportunity to use external generative AI tools. Cotton et al. (2024) explore the challenges and opportunities of AI presence in higher education assessment since real-time tasks are less susceptible to outsourced AI use. Additionally, Corbin et al. (2025) examine how students and instructors can restrict acceptable and unacceptable AI use in assessments, highlighting that controlled environments make enforcement easier.

Requiring students to submit intermediate artifacts such as brainstorming notes, draft versions with timestamps, and feedback reflections demonstrates the learning process over the polished final product. This way, it is harder to outsource the entire task to AI. With this in mind, Khlaif et al. (2025) report that faculty members are redesigning assessments in the GenAI era with a paradigm that includes process over product methods, where instructors scaffold assignments so that student drafts, revisions, and annotated reasoning are included in the grading process. On another hand, when using AI, Alkhouk and Khlaif (2024) propose assessments that require students to document their interactions with generative AI and are graded on their engagement and process as well as their end products.

Asking students to reflect on their decision-making, justify why they chose certain phrasing or tactics, or document how they used or chose not to use AI technologies can reveal genuine understanding and individual reasoning. Balalle and Pannilage (2024) reveal how AI affects academic integrity and note that asking for transparency is a recurring recommendation. Gonsalves (2025) highlights that requiring students to submit self-reports or declarations, sometimes with supporting reflection, helps promote responsibility.

When prompts are tied to recent lectures, local issues, case studies, or institutional contexts, generic AI-generated responses are less applicable, so students are encouraged to think critically and modify answers. This is why Moorhouse et al. (2023) recommend that institutions develop assignments that are situated in local or course-specific contexts to lessen the effectiveness of generic AI use.

Combining several assessment types, such as exams, group work, presentations, lab work, and project-based tasks, reduces the need for lengthy text outputs that AI can easily generate. To preserve integrity and promote higher-order thinking, Awadallah Alkouk et al. (2024) present insights from educator workshops in the Global South, recommending AI-resistant assessments that combine process-based, multimodal, and collaborative components. Additionally, Luo et al. (2025), in their review of AI-based learning tools, warn that excessive reliance on text-based assessment is risky in the age of AI; therefore, the need for diverse assessment mechanisms is critical to capture skills that AI cannot readily mimic.

6. Toward Ethical AI Integration: A Governance Framework

Universities should develop nuanced, multilevel governance structures rather than treating AI use as a binary (Wu et al., 2024). This collaborative approach guarantees transdisciplinary and flexible AI governance. Therefore, effective governance requires tailored guidance for different stakeholders such as faculty, students, researchers, and staff. Rather than adopting uniform policies across the board, institutions must adapt strategies for each group to foster responsible and sustainable AI engagement in teaching, learning, research, and institutional operations.

6.1. Recommendations for Faculty

For faculty, training on AI-conscious assignment design is needed. This can be done through continuous professional development, peer workshops, and global benchmarking (Schmidt et al., 2025). Professional development programs demonstrate how workshops can help faculty adapt assessments by embedding disclosure requirements and emphasizing process over product (University of Massachusetts Amherst, 2024). Peer workshops and collaborative redesign sessions further enhance adoption by enabling faculty to create AI-resistant tasks (Karsten et al., 2024). At a global level, benchmarking initiatives show how institutions worldwide are rethinking assignments to integrate AI competencies like output evaluation, prompt literacy, and ethical reasoning (Digital Education Council, 2024). To support these

initiatives, the institutions need to provide clear classroom rules and ethical reinforcement (Schmidt et al., 2025).

6.2. Recommendations for Students

For students, they must receive structured education in AI literacy, ethics, and critical evaluation in order to engage AI responsibly rather than uncritically. Fu et al. (2024) argue that AI in education should be mediated through frameworks of fairness, autonomy, and accountability to avoid harming student agency. In a systematic review done by Zhai et al. (2024), it was shown that over-reliance on AI dialogue systems undermines students' critical thinking and decision-making skills, as users often accept AI outputs without enough skepticism. To face these risks, instructors can prompt students to apply ethics, trace AI failure modes, and help in drafting usage policies (Krusberg, 2025).

6.3. Recommendations for Researchers

Concerning research, clarifying acceptable AI use is essential to protect integrity and accountability. Papagiannidis et al. (2022) outline AI governance best practices that include transparency, auditability, and oversight in algorithmic systems used for research tasks. Camilleri (2024) further emphasizes global principles for AI governance such as explainability, accountability, and human oversight. These are highlighted as directly relevant for research settings where automated assistance is used. In practice, this means that researchers should document AI workflows, validate outputs independently, and include explicit declarations in manuscripts describing any use of AI-generated work, as well as how human authors verified or refined it.

6.4. Recommendations for Administrative Staff

As for administrative staff, using AI in institutional operations must follow policies protecting privacy, fairness, and institutional integrity. Wang et al. (2023) examine how AI adoption within organizations can erode employee responsibility unless governance structures and oversight are in place. The governance literature (Camilleri, 2024; Papagiannidis et al., 2022) calls for clear accountability, audit trails, and constraints on AI decision authority in sensitive systems. This means requiring human review vetting of AI tools by institutional IT and compliance, logging AI usage, and explicit rules about what administrative tasks staff may delegate to AI.

7. Conclusion: Drawing the Line

The key question remains: Will students care about AI ethics if we do not make it part of their learning? Current evidence suggests that ethical awareness does not emerge automatically; it must be taught, modeled, and incentivized (Holmes et al., 2024). Universities must move beyond simple bans or laissez-faire policies. Instead, they should cultivate a responsible AI culture that encourages innovation without compromising academic integrity.

Drawing the line on AI in higher education requires flexibility, interdisciplinarity, and collaboration. The goal is not to eliminate AI but to harness its potential responsibly, with the aim of preparing students for a world where AI is used as an everyday tool while ensuring that education remains human-centered as ever. Institutional governance of AI will need to be an iterative, evolving process, rather than a static policy. To guarantee responsible and successful integration within educational environments, it should constantly adjust to new technology, ethical issues, and pedagogical demands.

Disclosure Statement

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