The Paradox of Generative AI and Student Creativity in Higher Education: A Systematic Review of Opportunities, Challenges, and Ethical Considerations

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DOI: https://doi.org/10.47772/IJRISS.2026.102000037

Received: 15 October 2026; Accepted: 20 October 2026; Published: 19 November 2026

ABSTRACT

Generative Artificial Intelligence (AI) has accelerated the transformation of teaching and learning in higher education. Tools such as ChatGPT, Google Gemini, and AI-powered image generators are being used by students to generate ideas, draft assignments, solve problems, and support creative work. This systematic review critically evaluates the paradox of generative AI as a facilitator of creativity and a potential threat to the development of original creative thinking. The review synthesizes current evidence on the opportunities, challenges and ethical implications of generative AI in higher education on the basis of 20 recent scholarly publications. The results suggest that generative AI has the potential to personalize learning, foster creative thinking, promote collaboration and reduce time spent on routine academic tasks. Generally, students tend to have positive attitudes toward AI, and a number of studies indicate that students perceive benefits in the form of increased motivation, engagement in learning activities, and academic achievement when AI is used as a supplementary learning tool rather than a replacement for independent effort. However, the review also notes critical issues with academic integrity, plagiarism, ambiguous authorship, over-reliance on AI, and the potentially damaging effect on students' critical and creative thinking skills. Some emerging themes common to the literature are ethical challenges such as responsible AI use, transparency, intellectual ownership, and the lack of clear institutional guidelines. The review also points to differences in cultural and educational contexts and the under-representation of research from developing countries, an equity issue. Collectively, the evidence suggests that generative AI is a pedagogical tool, neither a panacea nor a peril, whose educational value depends on its successful and ethical integration. The review ends with recommendations for AI-informed pedagogies and role-specific institutional policies that encourage students to use AI to support, rather than substitute, human intelligence and creativity, and for broader research representation.

Keywords: Generative Artificial Intelligence (AI), Higher Education, Student Creativity, Academic Integrity, AI Ethics.

INTRODUCTION

The public launch of large language models like ChatGPT in late 2022 has outpaced the ability of most policies to keep up with the changes in classrooms. Students are using generative artificial intelligence systems for assistance with brainstorming for writing, coding or even graphic design, and educators are left to find out whether their students actually did the work or not (Michel-Villarreal et al., 2023). This shift has generated a peculiar paradox. Generative AI has been hailed as a democratizing tool, widening access to creative tools, personalization of learning, and cognitive offloading to promote higher-order thinking (Akbar et al., 2024). Simultaneously, these same tools are responsible for impairing the very capacities that universities exist to develop: independent reasoning, originality, and the patient struggle that so often precedes a genuinely creative idea (Rudolph et al., 2024). Creativity is one of the attributes of higher education – the ability to tell the reproduction of the acquired knowledge from a true intellectual contribution. If a generative system can generate a poem, business plan, or piece of code on-demand, it is more difficult to tell what is written by a

student versus what is written by a machine (Garcia, 2024). But the blurring is not simply a technical, or pedagogical inconvenience. It's an issue of authorship, of academic integrity, and of what learning really means. This is a challenge to academic freedom, as Dubois (2024) points out, and institutions need to take proactive steps to guide inclusive and rigorous academic practice, not perpetuate bias and limit independent thinking, when using generative tools. Meanwhile, some studies argue that an outright ban on generative AI would be unwise (Rudolph et al., 2024). The research findings regarding students' attitudes toward AI are generally positive. Large-scale studies have reported positive sentiment scores with students associating the use of AI with higher motivation, more collaboration and even improved academic performance (Jwair, 2025). Sozon et al. (2025) also analyzed 79 peer-reviewed articles stating that generative artificial intelligence can be helpful to personalized learning and enhance institutional operations, but there is a need to be aware and proactive in controlling the risks of generative AI to equity and integrity. The literature, however, clears that the influence of technology in education is not easy to determine, since it depends on how and where the technology is used. While there is a significant amount of research on this topic, the literature is widely distributed across multiple disciplines, institutions and methodologies. Several individual studies have examined narrower parts of the problem, such as ethical dilemmas (Mongwe et al., 2026; Olohunfunmi & Khairuddin, 2024; Yarboi et al., 2026) or teaching practices in a single institutional setting (Oliveira et al., 2026), but relatively few efforts have been made to combine these strands specifically concerning student creativity. Taking this into account, this review aims to address this gap by synthesizing and consolidating 20 recent scholarly publications with the objective of mapping the findings of the literature and identifying the ethical and policy recommendations for the challenges and opportunities that generative AI poses to creative development in the university setting.

Research Questions

In an effort to understand this paradox, the review was guided by three research questions:

RQ1: What are the opportunities to use generative AI to foster students' creativity, engagement and learning outcomes in higher education?

RQ2: What are the challenges and risks of generative AI to academic integrity, authorship and independent critical and creative thinking of students?

RQ3: What are the ethical considerations, institutional gaps and contextual differences of the literature on the use of generative AI in higher education?

These questions were selected to illustrate three of the main themes that emerged across the studies considered here: the potential pedagogical benefits of generative AI; the threats to academic integrity and learning abilities; and the broader ethical and policy context of generative AI in education.

METHODOLOGY

As this paper is a secondary synthesis, the approach to the systematic review has been inspired by the one used by some of the key sources included here (Ahmed et al., 2024; Batista et al., 2024; Sozon et al., 2025; Yarboi et al., 2026), but the synthesis has been conducted using a purposely selected corpus rather than an exhaustive search of the literature, as it would be expected in a primary synthesis. The corpus was formed by searching for publications from 2023-2026 that were relevant to the topic and indexed in Scopus, Web of Science, and other academic search databases, as well as conference proceedings, book chapters, and one AAUP journal essay. The search keywords used were variations of generative AI, creativity, higher education, academic integrity, and ethics. The inclusion criteria were that a source (a) discussed generative AI in a higher-education context, (b) discussed the issues of creativity, academic integrity or ethical issues, and (c) was available in a recognized academic resource or a reputable institution. Sources included large-scale quantitative surveys (e.g., Jwair, 2025, n =1,537); systematic reviews, most based on PRISMA (e.g., Batista et al., 2024; Sozon et al., 2025; Yarboi et al., 2026) that combined dozens or hundreds of underlying studies; qualitative studies, in the form of interviews, focus groups or observation; and conceptual or commentary studies (e.g., Dubois, 2024; García-Peñalvo, 2023; Rudolph et al., 2024).

For each source, this study extracted the abstract, key findings, research gap identified and methodological approach, which were tabulated for thematic comparison. The data were then inductively coded into three general themes, corresponding to one of the research questions asked above: opportunities, challenges, and ethical considerations. The thematic, narrative synthesis is suitable for this study because the study designs in the corpus are very heterogeneous, where a strictly quantitative meta-analysis would not be feasible. Narrative synthesis is an accepted approach in systematic review when meta-analysis is not suitable, and this approach was also used by several of the other reviews included in this study (Oliveira et al., 2026; Yarboi et al., 2026).

RESULTS

Opportunities for Creativity, Engagement and Learning Outcomes

Across the literature reviewed, generative AI is consistently described as a tool to facilitate rather than replace creative and academic work. The use of ChatGPT, Bard, or Llama in the curriculum as tools for creative thinking, problem-solving, and personalized learning can have a profound impact, as described by Akbar et al. (2024). Likewise, García-Peñalvo (2023) suggests that the use of generative AI in education could transform learning and teaching, for example, by providing custom-built learning pathways and additional support for teachers, but cautions that these benefits must also maintain the human element of learning and teaching, based on mentorship. This picture is corroborated by empirical studies. In a large-scale, cross-disciplinary survey of 1,537 students, Jwair (2025) identified generally positive attitudes: Students noted positive benefits for motivation, collaboration, academic performance and decision making. Similarly, Shahzad et al. (2025) analyzed the data of Chinese higher education students through partial least squares structural equation modeling. The results show that generative artificial intelligence technologies significantly affect learning performance from the perspectives of self-efficacy, fairness and ethics, and creativity, and trust in generative artificial intelligence technologies play a regulatory role. Similarly, Ahmed et al. (2024) found similar results in their PRISMA-guided review, which was supplemented with a survey of students' perceptions, which showed positive results regarding the possibility of personalized instruction and better engagement with generative AI, but also highlighted the simultaneous concerns regarding academic integrity.

Qualitative data add to this synthesis. Through focus groups and participatory design workshops, Park and Ahn (2024) found that students use ChatGPT in a variety of ways, from gathering information to writing entire papers, and that thoughtfully designed tools and institutional policies can steer the use of ChatGPT in more positive and productive directions. For example, the employment of the chatbot as informant in a "thing ethnography" study by Michel-Villarreal et al. (2023) brought out opportunities for personalized support alongside a concern for integrity, echoing the ambivalent quality of this literature.

Challenges to Authorship, Integrity, and Independent Thinking

There is a long and ongoing list of concerns about the effects of Generative AI on students' abilities to compose independently and innovatively. Most systematically perhaps, Rudolph et al. (2024) also list ten opportunities and ten threats of generative AI chatbots, from job displacement to academic integrity to embedded bias to environmental sustainability to regulatory gaps. Their main thesis is that neither overly enthusiastic nor blanket opposition is good for higher education and a balanced, non-exaggerated approach to weighing the pros and cons is the key.

Issues of academic integrity are amongst the most prevalent issues highlighted in most of the studies reviewed. Using ChatGPT itself as a source of information, Michel-Villarreal et al. (2023) emphasized the need to address plagiarism and develop critical thinking as two central concerns. Batista et al. (2024) reviewed 102 records and analysed 37 empirical studies on stakeholder acceptance and specific use cases and found that there was comparatively good coverage, but long-term institutional practices were less prevalent. There are still questions about how the continued use of AI might change academic norms in the future. From an artistic point of view, the study investigates the question of authorship, as Garcia (2024) argues that generative AI demands a re-examination of what constitutes "authorship" and "creative ownership" as the technology disrupts conventional understandings of the independent artist and broadens creative horizons via novel collaboration and economy.

Several studies emphasize the danger of over-reliance on AI reduces independent effort. One thing to keep in mind is that ChatGPT can help students with their learning, but it can also be a threat to the autonomous learning of students if it is not used intentionally when designing the method of teaching. Yeralan and Lee (2023) take this beyond the individual classroom to argue that generative AI has societal and ethical drawbacks for higher education, at the level of institutions and society and not only of an individual assignment or a student alone. Olohunfunmi and Khairuddin (2024) suggest, in a systematic review of secondary research, that students are in a situation where they feel compelled to use more traditional research methods, but are looking for the convenience that comes with generative tools. The concern of the erosion of effort is noted in the literature.

Ethical Considerations, Institutional Gaps, and Contextual Differences

The third theme concerns the broader ethical and institutional context in which generative AI is being used. Several studies report that clearly formulated and actionable institutional policy is generally missing. Michel-Villarreal et al. (2023) suggested urgent need to develop frameworks that guide the responsible integration of ChatGPT and to adopt AI to transform the ethical responsibilities of the students and teachers. A few policies exist, but they tend to be vague, generic and not role specific. Ferreira et al. (2025) also identify ways in which institutional policies should be oriented and reinforce the need for explicit and communicated guidance, as opposed to implicit. Transparency and bias are rife with ethical issues. Dubois (2024) argues with the larger question of academic freedom for faculty whether or not to address the potential of generative AI to reinforce harmful stereotypes and biases (unless those learning environments are purposefully kept in check to ensure that all learning environments are inclusive) far outweighs the current question of generative AI and its place in the classroom .A cross-country survey (analyzed with SPSS) showed that attitudes and ethical sensitivity to GAI were different in various countries and among the different levels of education and suggested that a universal ethical solution to the problem of GAI in education may not be suitable in other cultural environments (Mironova et al., 2024). One of the more interesting gaps in the literature is the issue of geographic and cultural representation. A study by Yarboi et al. (2026) reviewed 246 studies published from 2018 to 2025. African contexts stated only 11.4% of the studies were accounted and Ghana for only 2.8%. The results reflect the predominance of the Global North voice as compared to Global South in the evidence base, as well as the lack of awareness of ethical integration of generative AI in post-colonial, multilingual and resource-constrained contexts. The most frequently observed ethical problems faced by faculty were authorship and plagiarism, academic integrity, and misinformation (Oliveira et al., 2026). They also observed that younger professors and female professors exhibited greater ethical awareness, but there was no significant relationship between their level of ethical awareness and their frequency of AI use. These findings would seem to imply that ethical concern is not necessarily related to access to the technology and that institutional direction should not be based on a monolithic student or faculty experience, but should consider demographic and contextual variability.

DISCUSSION

Collectively, the 20 studies examined here are not as paradoxical as they may seem, and better termed conditional. Generative AI is not a straightforward enabler of student creativity and it is not a definite impediment to creativity; its effect is very context-dependent. Studies report benefits for students and faculty in terms of motivation, engagement and creativity when AI is used as a complementary tool to support ideation, alleviate time pressures on repetitive tasks and free up mental space for more complex work (Akbar et al., 2024; Jwair, 2025; Shahzad et al., 2025). In contexts where it is used, or permitted to be used, to substitute independent work, it appears to be eroding the process of sustained, original thought that creative or critical work depends on (Olohunfunmi & Khairuddin, 2024; Yeralan & Lee, 2023). This conditional framing is consistent with the call from Rudolph et al. (2024) for a more balanced, non-hyperbolic attitude to generative AI in higher education in which the opportunities and threats of the technology are considered rather than its good or bad nature. This is also in line with García-Peñalvo's (2023) call for establishing frameworks that capitalize on the capabilities of AI but at the same time maintain the human, mentorship component of education. What is remarkable is that this middle-ground position that appears across very different methodological traditions, from large-scale quantitative surveys to conceptual essays, which point

toward the field converging on a common view even as policies can still lag behind. The ethical dimension of the paradox deserves special attention. Various studies have indicated a conclusion of lack of alignment between policy and guidance and adoption (Castelló-Sirvent et al., 2023; Ferreira et al., 2025; Michel-Villarreal et al., 2023). This is not a 'bureaucratic' gap, but has real implications for students who, as Olohunfunmi and Khairuddin (2024) explain, may be operating in-between competing pressures of convenience and perceived academic obligation without being clearly signposted by institutions as to acceptable use. This makes difficult to give any policy response that might be universally accepted, due to cross-country differences reported by Mironova et al. (2024) and Yarboi et al. (2026) documented the geographic imbalance. The existing base of evidence strongly inclines toward English-language, resource-rich and culturally homogeneous settings. This can result in an ethical framework that is poorly suited, or even inequitable, in multilingual, resource-poor, and culturally diverse environments that have so far been underrepresented.

This review has the following limitations. First, the corpus was selected based on topical relevance, not by an exhaustive independent database search as used by other larger PRISMA-guided reviews cited here (Batista et al., 2024; Sozon et al., 2025; Yarboi et al., 2026), and such a search could lead to the identification of further relevant work. Second, the studies reviewed here employ a wide variety of methodological approaches ranging from large-N quantitative surveys to qualitative studies in a single institution and it was therefore not possible to compare effect sizes or generalizable outcomes; the synthesis provided here is thematic and interpretive rather than statistical.

CONCLUSION

The evidence discussed in this review suggests that generative AI should not be viewed as a judgment of student creativity but rather as a pedagogical tool that can be used to enhance or detract from the student learning experience depending on the intentions, guardrails, and institutional culture. When used intentionally it can provide individualization, collaboration and release students to focus on real tasks of real creativity and higher-order thinking. If not wisely used, or without clear institutional expectations, it can slowly become a replacement for the independent efforts involved in creative and critical thinking.

Three key recommendations emerge from this synthesis. They address AI literacy, role-specific institutional policies, and representation of research on a broad scale. First, institutions should integrate AI literacy explicitly. Park and Ahn (2024) highlighted the need to develop AI pedagogies that explicitly teach students to think for themselves. Universities should also have clear policies on the matter; specific policies that match the roles of the student and instructor, which are directly tackling the issue of authorship and plagiarism and that are clearly communicated before students reflexively resort to the use of these tools (Castelló-Sirvent et al., 2023; Michel-Villarreal et al., 2023). Since many institutions face challenges due to limited funding, infrastructure, or access to AI tools, the following measure should be adapted to fit local conditions.

Yarboi et al. (2026) advocate developing a contextualized ethical framework and strengthening capacity building. AI can be integrated into existing courses, and policies should be developed collaboratively with local faculty and students rather than being borrowed from well-resourced environments. Finally, future research and policy work should explicitly seek to represent underrepresented areas and settings better to reflect the diversity of students and educators using these tools, which currently skews toward Global North settings (Yarboi et al., 2026). Generative AI will remain relevant, so the question is no longer whether to engage with it but how. The studies reviewed in this paper suggest that the answer is to treat it as a tool to be guided, not an enemy to be fought or an authority to be uncritically accepted.

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