JOURNAL OF INFORMATION TECHNOLOGY, CYBERSECURITY, AND ARTIFICIAL INTELLIGENCE

(RESEARCH)

The Impact of Generative AI on Student Engagement and Ethics in Higher Education

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Journal of Information Technology, Cybersecurity, and Artificial Intelligence, 2024, 1(1), 30–38

Publication history: Received October 28, 2024; revised November 1, 2024; accepted November 2, 2024

Article DOI: https://doi.org/10.70715/jitcai.2024.v1.i1.004

Abstract

The rapid adoption of Artificial Intelligence (AI) in higher education is reshaping students' learning experiences, with tools such as ChatGPT, Grammarly, and Microsoft Copilot becoming integral to academic work. This study, informed by data from the Digital Education Council Global AI Student Survey 2024, examines the impact of AI on students, focusing on usage patterns, trust in AI-generated content, ethical awareness, and expectations for institutional support. Findings indicate that 86% of students use AI for various academic tasks, with a majority expressing concerns about trust, fairness, and over-reliance on AI. While students value AI's benefits, only 5% are fully aware of institutional guidelines on AI use, and 72% desire more AI literacy courses, reflecting a significant need for comprehensive support in navigating AI responsibly. The study underscores the importance of clear ethical guidelines, faculty training, and student involvement in AI policy formation to foster responsible AI use and preserve academic integrity. These insights offer valuable guidance for educators and policymakers seeking to integrate AI ethically and effectively into higher education.

Keywords—Artificial Intelligence in Education; Student Perceptions of AI; AI Literacy and Ethics; Higher Education Technology Integration; Institutional AI Guidelines.

1. Introduction

Integrating Artificial Intelligence (AI) into higher education has sparked widespread enthusiasm and critical debate. As AI tools become more accessible and sophisticated, students increasingly incorporate them into their academic routines, using applications like ChatGPT, Grammarly, and Microsoft Copilot to support various tasks, from information searching to drafting and refining written work [1]. According to the Digital Education Council Global AI Student Survey 2024, 86% of students across 16 countries report using AI in their studies, with 24% using it daily and 54% at least weekly [2]. This widespread adoption underscores AI's rising influence in higher education, shaping how students learn, study, and complete assignments.

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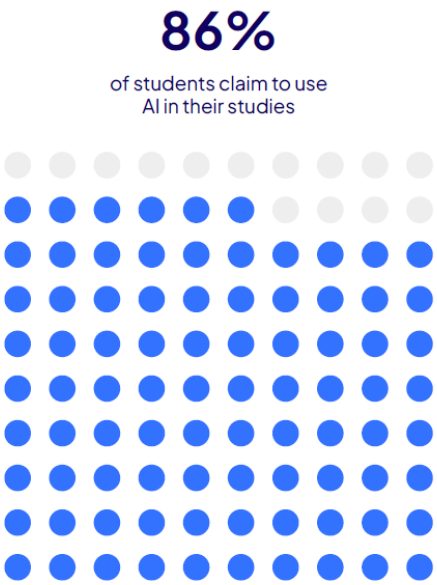
Figure 1. Percentage of Students Using AI in Higher Education



However, this technological shift raises questions about the role of AI in supporting educational goals, the ethics of its use, and the level of readiness among students and institutions to handle its implications [3]. The survey reveals that while students appreciate the benefits of AI tools, many have concerns about the reliability, fairness, and ethical use of AI-generated content. With 51% of students expressing doubts about the trustworthiness of AI outputs and 60% worried about the fairness of AI evaluations, it is clear that students are looking for more structured guidance on responsible AI use [2]. Additionally, the survey shows that 86% of students lack full awareness of institutional AI guidelines, pointing to a gap in AI literacy that could impact both academic integrity and the quality of learning outcomes [2].

To meet these challenges, educational institutions must navigate AI integration thoughtfully, balancing the advantages of AI with proactive measures to address ethical, practical, and pedagogical concerns [4]. Students have voiced a strong need for AI training, with 72% supporting the inclusion of AI literacy courses and 73% expecting faculty training on effective AI use [2]. By establishing clear guidelines, promoting AI literacy, and ensuring that educators are prepared for AI-enabled teaching environments, institutions can foster a more transparent and supportive landscape for AI use in higher education.

This study builds upon the Digital Education Council Global AI Student Survey 2024 findings, exploring the patterns, perceptions, and ethical considerations surrounding AI use among students. The objective is to provide insights into students' attitudes, trust levels, and expectations for institutional support, helping educators and policymakers create a responsible framework for AI integration that aligns with students' academic needs and ethical standards.

2. Background

The rapid advancement of AI has transformed numerous fields, and higher education is no exception. AI tools have increasingly become integral to students' academic lives, offering capabilities that range from automating routine tasks to supporting complex research efforts [5]. According to the Digital Education Council Global AI Student Survey 2024, 86% of students worldwide report using AI in their studies, with ChatGPT, Grammarly, and Microsoft Copilot among the most popular tools [2]. These technologies assist students with tasks such as information retrieval, grammar checking, summarizing, and content generation, providing immediate feedback and enhancing productivity. However, as students rely on these tools, questions surrounding their ethical implications, impact on academic integrity, and long-term effects on critical thinking skills have surfaced [6].

The widespread use of AI in education has prompted educational institutions to reconsider their policies, pedagogy, and infrastructure. While students show enthusiasm for AI's potential, the survey reveals significant gaps in institutional guidance and AI literacy. Most students feel unprepared for an AI-integrated academic environment, with 58% reporting insufficient AI knowledge and skills [2]. Additionally, only a small fraction of students (5%) are fully aware of

their university's AI policies, and 60% are concerned about the fairness and bias of AI evaluations [2]. These findings highlight a need for institutions to develop comprehensive AI guidelines and training programs that address both the functional and ethical dimensions of AI usage.

3. Problem Statement

The increased use of AI by students in higher education poses new challenges related to academic integrity, ethical guidelines, and institutional readiness. While AI tools offer valuable support, their unregulated use raises concerns about over-reliance, privacy, and the fairness of AI-generated content. The Digital Education Council Global AI Student Survey 2024 indicates that only 5% of students are fully aware of AI-related guidelines at their institutions, leaving a majority uncertain about responsible AI usage [2]. Moreover, 55% of students worry that excessive reliance on AI may compromise the quality of education, and 60% have concerns regarding AI's fairness in evaluating student work [2]. These gaps underscore a pressing issue: without adequate guidelines and educational support, students and institutions risk compromising the quality and integrity of academic work in an AI-driven environment.

4. Purpose of the Study

This study examines AI's impact on students in higher education by analyzing their usage patterns, perceptions, trust levels, and awareness of ethical guidelines. This research uses data from the Digital Education Council Global AI Student Survey 2024 to understand students' attitudes towards AI tools and their expectations for institutional support in AI literacy and ethical guidelines. The study also aims to identify the areas where students experience uncertainty or concern regarding AI, such as data privacy, fairness, and over-reliance, to provide insights that can guide institutions in creating a balanced approach to AI integration.

5. Significance of the Study

The findings of this study are essential for educational institutions, policymakers, and educators responsible for shaping AI's role in academia. With 72% of students expressing a desire for AI literacy courses and 73% expecting faculty training, this study highlights the urgent need for institutional strategies that address AI readiness and ethical awareness [2]. By understanding students' usage patterns and perceptions, institutions can develop targeted interventions, such as guidelines on acceptable AI use, training for students and faculty, and ethical frameworks aligning with academic integrity standards [7].

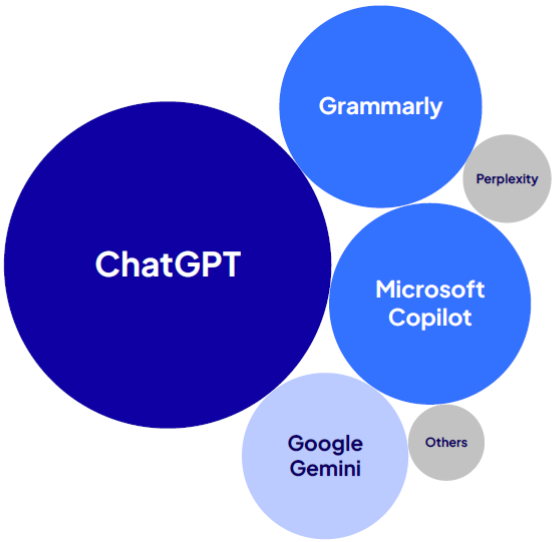
This research contributes to the growing discourse on AI in education by providing a student-centered perspective on AI's benefits and challenges. The insights generated can help institutions balance the advantages of AI tools with necessary safeguards, ensuring that AI remains a constructive force that enhances, rather than undermines, the educational experience.

6. Literature Review

6.1. AI Usage in Higher Education

AI has become a significant force in higher education, with students across disciplines adopting AI tools to support various academic tasks. The Digital Education Council Global AI Student Survey 2024 reports that 86% of students currently use AI in their studies, with ChatGPT emerging as the most popular tool (66% usage), followed by Grammarly and Microsoft Copilot (each at 25%) [2]. This high adoption rate reflects a broader trend in which AI tools reshape learning experiences by providing immediate access to information, grammar support, content generation, and task automation [8].

Figure 2. Most Commonly Used AI Tools Among Students



Despite these benefits, literature highlights potential downsides to AI usage, including concerns about students' growing dependence on these tools. For instance, Yang and Li caution that excessive reliance on AI could hinder the development of independent critical thinking and analytical skills, as students may bypass the cognitive processes involved in problem-solving and knowledge synthesis [9]. This raises questions about the educational value of AI when used without critical engagement or oversight.

6.2. Student Satisfaction and Institutional Readiness

While students appreciate the utility of AI, the Digital Education Council Global AI Student Survey 2024 reveals a gap between students' expectations and their satisfaction with institutional support for AI integration. According to the survey, 80% of students believe their university's approach to AI has not fully met their expectations, and 58% report feeling underprepared regarding AI knowledge and skills [2]. Additionally, students indicate a need for greater AI literacy support, with 72% expecting their universities to offer more courses on AI literacy and 73% advocating for faculty training on AI tools. These findings align with studies by Albashiry et al., who suggest that universities should adopt AI tools and create support structures that foster AI literacy, enabling students and faculty to use AI effectively and ethically [10].

Figure 3. Student Satisfaction with University AI Integration

The gap between students' needs and current institutional readiness highlights the importance of AI literacy in the academic environment. Dwivedi et al. argue that institutions must go beyond merely introducing AI tools to actively provide training on responsible AI usage, addressing technical and ethical competencies [11]. The survey findings support this view, as students report feeling unprepared for an AI-driven workplace (48%) and emphasize the necessity of structured AI education to develop their competencies [2].

6.3. Trust in AI and Ethical Concerns

Trust in AI-generated content is critical to students' engagement with AI tools. The survey finds that while students are comfortable using AI for factual or routine tasks, only 51% fully trust the content produced by AI tools, with trust levels varying notably by academic discipline [2]. Students in technical fields, such as engineering and computer science, exhibit a higher trust in AI-generated outputs, likely due to a stronger understanding of AI's mechanisms and limitations [12]. Conversely, students in humanities and social sciences tend to express more caution, citing concerns about AI's ability to interpret context, produce unbiased information, and maintain accuracy in complex or subjective areas [13].

Research corroborates these discipline-specific trust levels. Wang and Chen report that students in technical disciplines, familiar with algorithmic and machine-learning principles, often feel more confident in verifying AI outputs compared to students in non-technical fields [14]. However, Rudman and Harpur stress that students' limited understanding of AI biases and limitations can make them susceptible to misinformation, highlighting the importance of educating students on evaluating AI outputs critically [15].

Ethical concerns surrounding AI usage in higher education extend beyond content trustworthiness. The survey indicates that 60% of students worry about fairness in AI evaluations, and 55% are concerned about over-reliance on AI, potentially diminishing the value of their education [2]. Studies in AI ethics argue that, without clear guidelines, AI in academia could lead to unintended biases, compromised academic integrity, and privacy issues [16].

6.4. Institutional Response to AI Literacy and Ethical Guidelines

The survey highlights a strong student demand for clearer AI guidelines and ethical training, with 86% of students indicating a lack of full awareness of AI policies at their universities [2]. Furthermore, 71% of students expressed a desire to be actively involved in decision-making around AI integration, suggesting they prefer shaping AI policies over passive adherence. This is supported by Rudman and Harpur, who advocate for a participatory approach in which students and faculty collaborate on establishing AI policies that address ethical boundaries and appropriate applications [15].

Educational institutions are increasingly encouraged to embed AI ethics and literacy programs within their curricula. The survey reveals that students value these initiatives, which are essential to their academic and professional growth. Zawacki-Richter et al. argue that proactive measures in AI ethics foster a responsible AI culture within educational environments, preparing students for AI-driven workplaces while upholding academic standards [16]. Institutions integrating AI literacy programs can create an informed student body capable of critical AI usage that aligns with ethical principles and enhances learning experiences.

7. Research Methodology

7.1. Research Design

The Digital Education Council Global AI Student Survey 2024 utilized a quantitative survey design to assess students' usage, perceptions, and concerns regarding AI in higher education. This structured approach enabled the survey to capture extensive student experiences across diverse academic settings [2]. The survey instrument, an online questionnaire, was distributed to students from various higher education institutions across 16 countries, gathering responses on key areas such as AI usage patterns, trust, ethical concerns, and institutional support expectations.

7.2. Data Collection

The survey included multiple sections covering:

AI Usage Patterns: This section assessed the frequency of AI use, specific tools employed (e.g., ChatGPT, Grammarly, Microsoft Copilot), and academic tasks for which AI is used, such as information searching and grammar checking.

Perceptions and Expectations: Questions addressed students' satisfaction with institutional AI integration, readiness for AI-driven environments, and desires for AI literacy training.

Trust and Ethical Concerns: Items evaluated levels of trust in AI-generated content, awareness of ethical guidelines, and primary concerns around fairness, privacy, and over-reliance on AI [2].

A diverse sample of 3,839 students across undergraduate, master's, and doctoral levels were targeted to ensure a representative global perspective on AI in higher education. The online survey method allowed for broad accessibility and ensured confidentiality to encourage honest responses.

7.3. Data Analysis

Data were analyzed using descriptive and inferential statistics. Summary statistics (mean, median, standard deviation) described general trends in AI usage, trust levels, and awareness of ethical guidelines, while frequency and percentage analyses provided insights into response distributions across variables. Statistical tests, including chi-square and t-tests, examined relationships between factors such as AI usage by academic level and variations in ethical awareness [2]. This comprehensive analysis yielded actionable insights into students' attitudes and informed recommendations for AI policy in higher education.

8. Findings and Discussion

8.1. Demographic Information

The Digital Education Council Global AI Student Survey 2024 involved 3,839 students from 16 countries, representing a balanced mix of undergraduates, master's, and doctoral students from various academic disciplines [2]. This sample provided a solid foundation for analyzing the varied impacts of AI across educational levels and fields.

8.2. Generative AI Usage Patterns

The survey results indicate a high adoption rate of AI, with 86% of students using AI tools in their studies. Of these, 24% reported daily use, while 54% used AI weekly, underscoring its importance in academic life. ChatGPT, Grammarly, and Microsoft Copilot were the most frequently used tools, with ChatGPT leading at 66% [2]. Students predominantly used AI for information searching (69%), grammar checking (42%), and summarizing tasks (33%). This trend suggests that AI tools are valuable for academic efficiency and productivity. However, there is potential for dependency if students do not engage critically with AI-generated content.

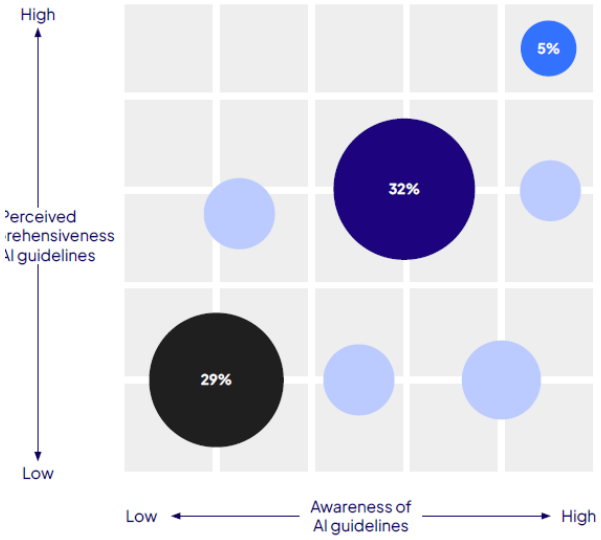
8.3. Trust in AI-Generated Content

While AI usage is widespread, the study revealed significant concerns about student trust. Approximately 51% of respondents doubted the reliability of AI-generated content due to potential biases and inaccuracies [2]. Studies indicate that trust in AI varies by discipline; students in technical fields, such as engineering, exhibit higher trust levels than those in humanities [12]. This disparity highlights the need for AI literacy programs that equip students across disciplines to evaluate AI outputs critically, promoting a balanced approach to AI usage.

8.4. Awareness of Ethical Implications

A key finding from the survey is the limited awareness of AI ethics among students. Only 5% of students reported being fully aware of their institution's AI policies, with 86% lacking comprehensive knowledge of these guidelines [2]. This gap in awareness raises concerns about potential misuse and ethical dilemmas, particularly around fairness in AI evaluations. Ethical issues such as bias, privacy, and the risk of over-reliance on AI for academic work underscore the need for universities to establish clear, accessible AI policies. As noted by Zawacki-Richter et al., well-defined AI policies can prevent unintended biases and protect academic integrity in an increasingly AI-driven educational landscape [16].

Figure 4. Student Awareness of AI Usage Guidelines



8.5. Influence of Familiarity with AI on Trust

The survey also explored how familiarity with AI influences trust. Results show that 58% of students lack sufficient AI knowledge, and 48% feel unprepared for an AI-driven workplace. However, 72% expressed a strong desire for institutions to offer more courses on AI literacy [2]. These findings suggest that familiarity with AI builds confidence and trust, highlighting the importance of integrating AI literacy into the curriculum. Institutions that provide structured AI training can empower students with skills for responsible AI usage and enhance their readiness for professional environments.

8.6. Impact of Academic Level on AI Usage and Perception

Survey data suggest variations in AI usage and perceptions across academic levels. Graduate students tend to engage more critically with AI, with 55% regularly fact-checking AI outputs compared to 30% of undergraduates. Additionally, 59% of students expect their universities to increase AI integration in teaching and learning, and 73% believe faculty should receive training on effective AI use [2]. This disparity underscores the need for tailored AI guidelines and training that address the distinct needs of undergraduates and graduates, facilitating responsible AI adoption across academic levels.

9. Conclusion

This study investigated the impact of AI on students in higher education, focusing on usage patterns, trust, ethical awareness, and institutional support expectations. Findings from the Digital Education Council Global AI Student Survey 2024 reveal widespread AI adoption, with 86% of students using AI tools, though many express concerns about trust, fairness, and ethical implications. Only 5% of students reported full awareness of their institution's AI policies, highlighting a significant gap in ethical literacy and the necessity for comprehensive guidelines [2].

To maximize AI's educational potential while maintaining academic integrity, institutions must adopt balanced approaches that address AI usage's functional and ethical dimensions. This includes establishing clear guidelines, promoting AI literacy, and ensuring faculty can support students in AI-enabled learning environments. Further research is needed to track the long-term effects of AI on learning outcomes and explore discipline-specific approaches to AI literacy in higher education.

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