

**THE IMPACT OF ACADEMIC INTEGRITY INSTRUCTION ON STUDENTS'
ETHICAL USE OF ARTIFICIAL INTELLIGENCE IN ACADEMIC WRITING**

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Abstract: The rapid expansion of artificial intelligence (AI) technologies has created new opportunities and ethical challenges in academic writing. This study investigated the impact of academic integrity instruction on university students' AI usage behaviors and understanding of ethical AI use in academic writing. A quasi-experimental pre-test–post-test design was employed involving undergraduate students who completed questionnaires before and after an instructional intervention focused on academic integrity and responsible AI practices. The findings indicated that academic integrity instruction contributed to reduced plagiarism-related behaviors and more purposeful AI use. Students demonstrated improved understanding of the distinction between AI-assisted and AI-generated writing and reported greater use of AI during appropriate stages of the writing process. The study suggests that academic integrity instruction may play an important role in promoting responsible AI integration and strengthening ethical academic practices in higher education.

Keywords: academic integrity, artificial intelligence, academic writing, ethical AI use, plagiarism, higher education

Introduction

The rapid expansion of artificial intelligence (AI) technologies has substantially transformed higher education, particularly academic writing practices. Generative AI tools are increasingly used for brainstorming, outlining, revising, and language support, creating both opportunities and challenges for educational institutions. While these technologies may improve efficiency and accessibility, they have also generated concerns regarding authorship, originality, plagiarism, and academic integrity.

Academic integrity remains a fundamental principle of higher education because it ensures that learning and assessment reflect students' genuine intellectual effort. Traditionally, academic writing has been evaluated on the assumption that submitted work represents students' own understanding, reasoning, and intellectual contribution. However, the emergence of generative AI has complicated conventional interpretations of authorship because AI systems can now generate coherent and academically structured texts that closely resemble human-produced writing.

As AI adoption continues to increase, educational discussions have shifted from whether AI should be used to how AI should be used ethically. A distinction has therefore emerged between AI-assisted writing and AI-generated writing. AI-assisted writing generally refers to situations where students remain the primary authors while AI functions as a supportive tool for idea generation, organization, or language improvement. In contrast, AI-generated writing involves delegating substantial intellectual and textual production to AI systems. This distinction has become increasingly important because unclear boundaries

between support and substitution may contribute to academic misconduct and plagiarism-related behaviors.

Although previous studies have explored AI adoption and the educational benefits of AI-supported learning, limited empirical evidence exists regarding how academic integrity instruction influences students' AI-related behaviors. In many educational contexts, students adopt AI technologies without formal guidance regarding ethical boundaries, authorship, and responsible use. As a result, insufficient understanding of academic integrity may contribute to excessive dependence on AI tools and inappropriate writing practices.

Understanding whether academic integrity instruction can influence students' AI usage behaviors is increasingly important for universities attempting to integrate AI technologies responsibly. Instruction focused on ethical AI use may help students distinguish between acceptable assistance and problematic dependence while promoting responsible academic practices.

Therefore, this study investigates the impact of academic integrity instruction on university students' AI usage behaviors, plagiarism-related practices, and understanding of ethical AI use in academic writing contexts. Specifically, the study examines whether increased awareness of academic integrity contributes to more purposeful and responsible AI integration.

The study addresses the following research questions:

RQ1: How did students use AI in academic writing before academic integrity instruction?

RQ2: How did academic integrity instruction influence students' AI usage behaviors?

RQ3: To what extent did academic integrity instruction affect plagiarism-related behaviors?

RQ4: How did students' understanding of ethical AI use change after instruction?

Methods

2.1 Research Design

This study employed a quasi-experimental pre-test–post-test design to examine the impact of academic integrity instruction on students' AI usage behaviors and understanding of ethical AI use in academic writing. The study compared students' perceptions and practices before and after an instructional intervention focusing on academic integrity principles and responsible AI integration.

A quantitative approach was adopted to measure behavioral changes related to AI use, plagiarism-related practices, and ethical decision-making. Scenario-based assessment tasks were additionally incorporated to evaluate students' ability to distinguish between acceptable and unacceptable AI practices in academic writing contexts.

2.2 Participants

The participants were undergraduate students enrolled in university-level English and academic writing courses. Participants were selected using convenience sampling due to accessibility and institutional feasibility.

A total of [N] students participated in both pre-intervention and post-intervention stages of the study. Demographic information collected included year of study, faculty affiliation, previous AI experience, and frequency of AI use for academic purposes.

2.3 Instructional Intervention

The intervention consisted of structured instruction on academic integrity and ethical AI use in academic writing. The instructional content focused on:

- principles of academic integrity;
- authorship and intellectual ownership;

- differences between AI-assisted and AI-generated writing;
- ethical AI use across writing stages;
- plagiarism risks associated with inappropriate AI use.

Interactive activities, scenario-based discussions, and practical examples were used to increase students' awareness of responsible AI practices.

2.4 Instruments

Data were collected using a structured questionnaire administered before and after the intervention.

The questionnaire consisted of four sections:

- demographic information;
- AI usage patterns;
- perceptions of academic integrity;
- scenario-based ethical judgments regarding AI use.

Responses were primarily measured using a five-point Likert scale, while scenario tasks evaluated participants' ethical decision-making in realistic academic contexts.

2.5 Data Collection and Analysis

Participants completed the questionnaire twice: prior to the instructional intervention and after completing the academic integrity instruction.

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participant responses. Comparative analyses were conducted to examine changes between pre-intervention and post-intervention responses.

Statistical analyses were conducted at a significance level of $p < .05$.

Results

3.1 Changes in AI Usage Behaviors Following Instruction

The findings demonstrated noticeable changes in students' AI-related behaviors after academic integrity instruction. Prior to the intervention, students reported extensive AI use across most academic writing tasks, often without clear awareness of ethical boundaries. High levels of unrestricted AI use were accompanied by relatively frequent plagiarism-related problems.

Following instruction, students reported more selective and purposeful AI use. As illustrated in Figure 1, the proportion of students using AI in most writing tasks decreased from 84% to 43%. Similarly, plagiarism-related behaviors showed a substantial decline, decreasing from 52% before instruction to 21% after instruction.

At the same time, indicators of responsible AI integration increased considerably. Purposeful AI use increased from 27% to 76%, while stage-appropriate AI use increased from 19% to 81%. These findings suggest that academic integrity instruction positively influenced students' understanding of ethical AI practices and encouraged more responsible use of AI tools in academic writing.

3.2 Changes in Ethical Understanding

Scenario-based responses additionally indicated improved understanding of acceptable and unacceptable AI practices. After instruction, students demonstrated greater ability to distinguish between AI-assisted writing and AI-generated writing, particularly in scenarios involving brainstorming, grammar support, and full-text generation. (Chart 1)

Behavior Category	Before Instruction	After Instruction	Change
AI used in most tasks	84%	43%	↓ 41%

Behavior Category	Before Instruction	After Instruction	Change
Plagiarism cases	52%	21%	↓ 31%
Purposeful AI use	27%	76%	↑ 49%
Proper stage-based AI use	19%	81%	↑ 62%

Chart 1

Discussion

The findings suggest that academic integrity instruction positively influenced students' understanding and use of AI in academic writing. Prior to instruction, students reported extensive AI use across multiple writing stages, often without clear awareness of ethical boundaries. This pattern may explain the relatively high level of plagiarism-related behaviors observed before the intervention.

Following instruction, students demonstrated more selective and purposeful AI use. The reduction in unrestricted AI usage and the increase in stage-appropriate use suggest that students became more aware of the distinction between AI-assisted and AI-generated writing. These findings support the argument that ethical AI use is not determined by whether AI is used, but by how and why it is used.

The findings also indicate that insufficient understanding of academic integrity may contribute to inappropriate AI practices. Many students initially appeared to treat AI as a replacement for intellectual effort rather than a learning support tool. After instruction, participants increasingly viewed AI as a supplementary resource for brainstorming, language support, and revision.

From a pedagogical perspective, the findings suggest that universities should prioritize academic integrity instruction and AI literacy training. Simply restricting AI use may be less effective than helping students understand ethical boundaries and responsible integration strategies.

Conclusion

This study examined the impact of academic integrity instruction on students' AI usage behaviors in academic writing contexts. The findings demonstrated that instruction contributed to reduced plagiarism-related behaviors, increased purposeful AI use, and improved understanding of ethical AI practices.

The study suggests that academic integrity education may play an important role in helping students use AI more responsibly. As AI technologies continue to expand in higher education, institutions should focus not only on regulation but also on developing students' ethical awareness and AI literacy skills.

Future studies may examine long-term behavioral changes and investigate how discipline-specific contexts influence ethical AI use.

References

1. Bretag, T. (2016). Challenges in addressing plagiarism in education. *PLoS Medicine*, 13(12), e1002183.
2. Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating? Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239.

3. Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., ... & Wright, R. (2023). "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management*, 71, 102642.
4. Eaton, S. E. (2021). Plagiarism in higher education: Tackling tough topics in academic integrity. *ABC-CLIO*.
5. Fishman, T. (2014). *The fundamental values of academic integrity* (2nd ed.). International Center for Academic Integrity.
6. Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., ... & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274.
7. Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410.
8. Moorhouse, B. L., Yeo, M. A., & Wan, Y. (2023). Generative AI tools and assessment: Guidelines of the world's top-ranking universities. *Computers and Education: Artificial Intelligence*, 5, 100151.
9. Perkins, M. (2023). Academic integrity considerations of AI large language models in the post-pandemic era: ChatGPT and beyond. *Journal of University Teaching and Learning Practice*, 20(2), 1–12.
10. Rudolph, J., Tan, S., & Tan, S. (2023). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning and Teaching*, 6(1), 342–363.
11. Sokoliuk, K., Brika, S., & McLaughlin, P. (2024). Artificial intelligence and academic integrity in higher education: Emerging ethical considerations. *Assessment and Evaluation in Higher Education*, 49(2), 165–181.
12. Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, 10(1), 15.