

AI Integration in Higher Education and Leadership Development

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ABSTRACT

Artificial intelligence (AI) tools such as ChatGPT, Claude, and Copilot are increasingly integrated into higher education. However, limited research examines students' perception on AI in relation to their leadership development. To fill this research gap, the present paper examines undergraduate students' AI use, trust in AI, and readiness for virtual leadership. A survey titled "College Students' Perspectives on Leadership-Related Courses" was administered in Fall 2025 to 155 undergraduates at a public university on the U.S. East Coast. Results show that while most students have held leadership roles, few have taken leadership-related courses, and only some actively use AI tools for leadership or career guidance. Students have neutral confidence in leading remote teams and agree that leadership programs should include virtual leadership training. The t-test results do not present statistically significant difference in leadership confidence between AI users and non-users, though AI users report slightly higher average confidence. The study discusses that AI integration may support leadership learning, but AI use alone does not directly enhance students' self-perceived leadership confidence.

KEYWORDS

Artificial Intelligence, Leadership Development, Higher Education, Perceptions

Introduction

Since early 2010s, Artificial Intelligence (AI) has experienced dramatic growth. AI platforms such as ChatGPT, Claude, and Copilot can assist people with generating text, creating content, searching for information, etc. Prior literature has had many discussions about the importance of incorporating AI technology into higher education to improve students' learning progress. Southworth et al. (2023) talk about a program at the University of Florida to integrate AI tools across its curriculum for all undergraduate students. Cowling et al. (2023) find that the popular AI platform ChatGPT can enhance research practices and strengthen students' learning. Kabanda (2025) analyzes the advantages of using AI tools in teaching and learning, its role in academic research, and responsibilities of educators in addressing academic integrity and administrative issues related to AI use. Kovacevic et al. (2025) examine the opportunities and challenges of the current digitalization in higher education through questionnaires and interviews. Hoang (2025) conducts a survey on leadership and AI integration in language teaching and discusses e-leadership theory and the ethical considerations in AI use. Khairullah et al. (2025) review the significant impact that AI has on reshaping traditional administrative processes, teaching methodologies, learning process and development of leadership skills. Marc (2025) argues that adapting to AI advancements is essential and also discusses faculty's concerns about students' AI use and the importance of academic integrity.

Fewer studies focus on students' perceptions of AI tools and their leadership development. Sposato (2024) proposes interdisciplinary approaches in organizational leadership research and education. Goryunova and Jenkins (2024) suggest educators to incorporate AI technology into their leadership program in addition to traditional learning tools. Ojedeji and Adejuwon (2025) recommend transforming leadership education along with the fast development of AI technology and specifically discuss the comprehensive robust capacity-building frameworks. Bartlett and Bartlett (2024) specifically examine the use of ChatGPT in community

college leadership training to create a more personalized and effective learning experience. Jenkins and Khanna (2025) suggest integrating AI into pedagogical approaches to support both educators and students and foster leadership development.

To address the research gap regarding to students' perceptions and use of AI tools in relation to their leadership development, the authors administered a survey titled "College Students' Perspectives on Leadership-Related Courses" in Fall 2025 to 155 undergraduates at a public university on the U.S. East Coast. The survey covered several key areas: whether students use AI tools, their confidence in leading teams remotely, their trust in those tools, and their readiness for virtual leadership. The main objectives of the research are (1) to examine how undergraduates utilize AI tools in leadership-related contexts, and (2) to assess whether AI usage correlates with their self-reported leadership confidence. The findings suggest that although integrating AI into leadership education may have potential advantages, there is no clear evidence of a direct effect on students' self-perceived leadership confidence.

Main analysis and results

This paper aims to examine the relationship between AI tool adoption and leadership development among college students. The survey received a response rate of approximately 45.2%, resulting in 70 responses. The sample includes 25 freshmen (35.7%), 18 sophomores (25.7%), 18 juniors (25.7%), and 8 (11.4%) seniors or above. One student did not identify his/her class year. Participants represent a wide range of majors, including accounting, general business, marketing, finance, management, entrepreneurship, criminal justice, education, information technology, mathematics, personal financial planning, social work, sports management, studio arts, supply chain management, and undecided fields.

The main survey results are shown in Figure 1.

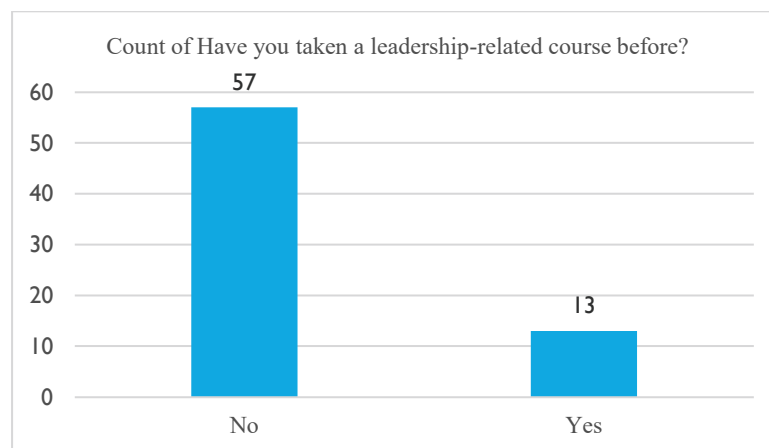


Figure 1. Have you taken a leadership-related course before?

Majority of the students have not taken any leadership-related course (81.4%), which may indicate the limited availability of leadership programs (Figure 2).

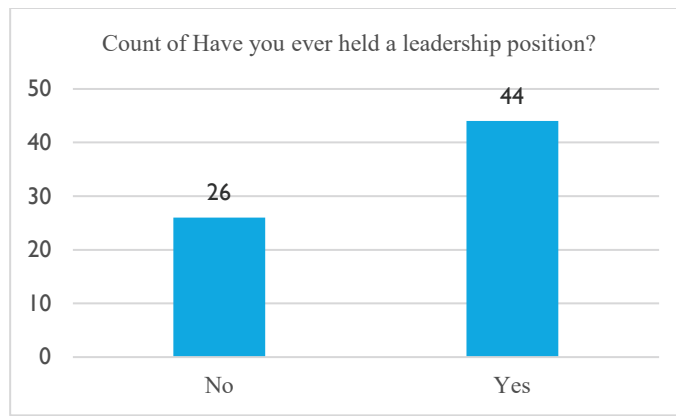


Figure 2. Have you ever held a leadership position (e.g., team leader, manager, student club president, etc.)?

Approximately 62.9% of students in the sample have held a leadership position in different circumstances. This finding suggests a potential gap between the leadership education students have received and their practical leadership experiences, highlighting the need to offer more leadership-related courses (Figure 3).

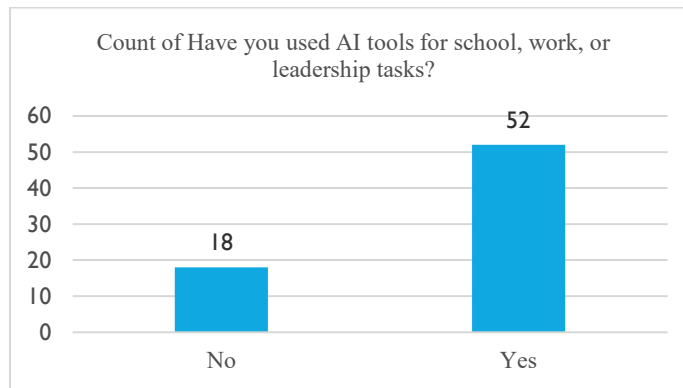


Figure 3. Have you used AI tools (e.g., ChatGPT, Claude, Copilot) for school, work, or leadership tasks?

Around 25.7% of the students in the sample reported that they have not used AI tools. To effectively adapt to the fast-evolving business environment driven by advancement in AI technology, students should gain both technical proficiency and ethical application in using AI tools (Figure 4).

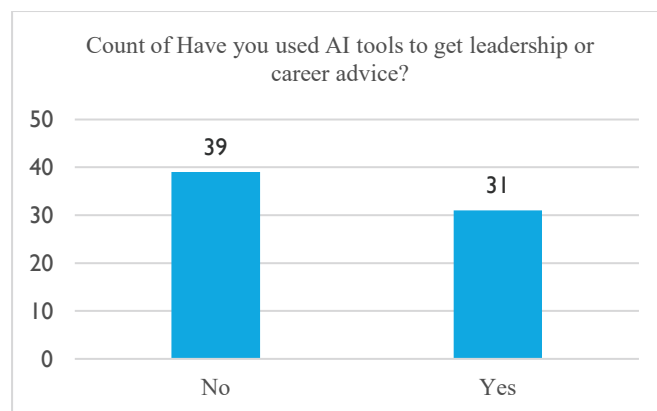


Figure 4. Have you used AI tools (e.g., ChatGPT, Claude, Copilot) to get leadership or career advice?

Compared to the previous question, fewer students (44.3%) reported that they have consulted AI tools for leadership improvement. This finding suggests an opportunity to better prepare students for academic and professional environments in which AI proficiency is increasingly essential (Figure 5).

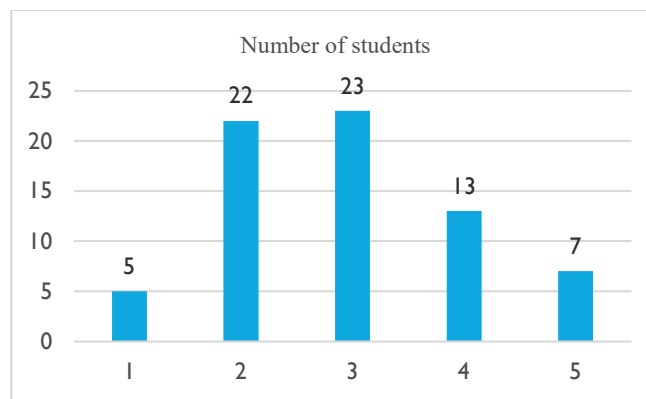


Figure 5. I feel confident leading a team that I have never met in person. (Scale used throughout: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

A mean score of 2.93, close to the midpoint of 3, represents a neutral response. On average, students do not strongly feel confident or unconfident; rather, their attitudes are generally undecided or indifferent. This suggests that students may lack extensive experience, strong opinions, or self-assessments related to leading in virtual settings (Figure 6).

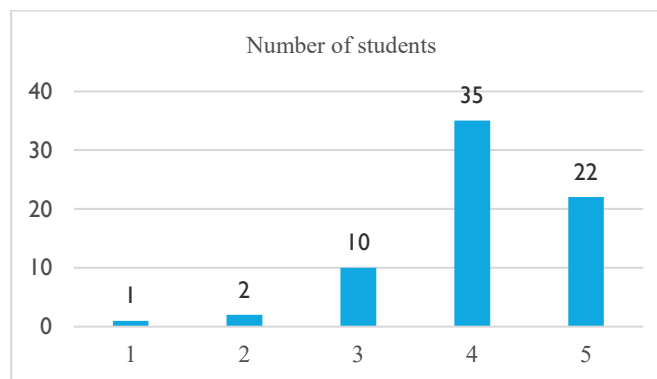


Figure 6. Leadership programs should teach how to manage remote/virtual teams effectively.

The mean score of 4.07 shows that generally students agree that leadership programs should provide them knowledge on effectively managing remote teams. Universities and colleges should expand and strengthen curriculum components focused on virtual leadership. This may include integrating team communication, digital collaboration tools, conflict resolution in virtual settings. Offering experiential learning opportunities, such as virtual team projects, simulations, or remote internships, would also help students develop effectiveness of their remote leadership (Figure 7).

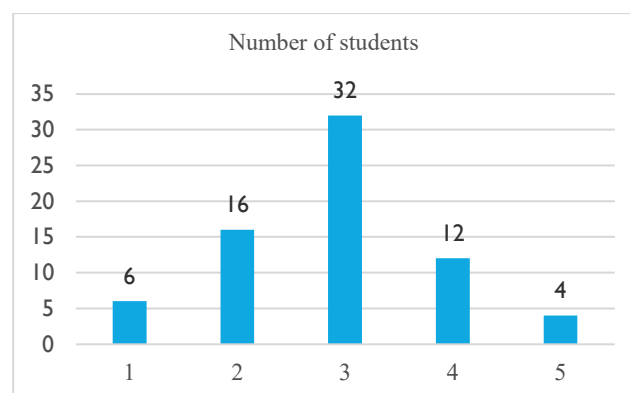


Figure 7. I trust AI tools to give useful career or leadership guidance.

A mean score of 2.89 suggests that, on average, students hold a slightly neutral-to-disagreeing attitude toward the usefulness of AI tools when seeking leadership guidance. The possible reasons of their response are that (1) students may not fully understand how AI tools can support leadership development; (2) students have not used AI for leadership-related tasks, and then may be unsure of its benefits; (3) students may prefer advice from their instructors, parents, advisors, or peers, perceiving human mentorship more personalized and trustworthy; and (4) students might question if AI can provide reliable leadership advice, especially in complicated situations (Figure 8).

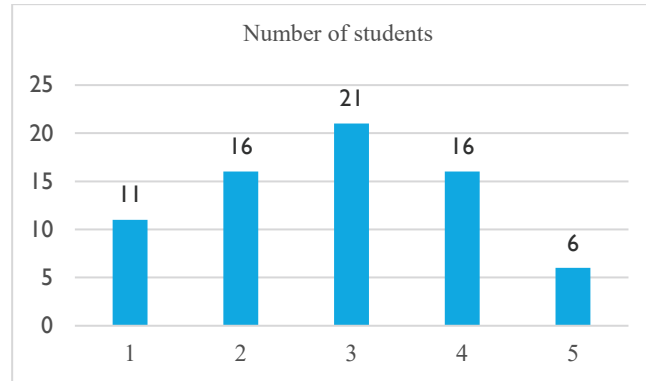


Figure 8. I would use AI tools as a practice coach to rehearse leadership conversations.

With an average score of 2.86, students show limited willingness to use AI tools for mock leadership conversations, possibly caused by their uncertainties about the reliability and accuracy of AI-generated communication.

To further investigate differences in leadership confidence between undergraduate students who use AI tools and those who do not, the following hypotheses are proposed.

H₀: There is no statistically significant difference in leadership confidence between undergraduate AI users and non-users.

H₁: Undergraduate students who use AI tools report significantly higher leadership confidence than those who do not.

The t-test is conducted, and the results are shown in Table 1.

Table 1. Results of t-test.

Group	Mean Confidence	Sample Size
Students used AI	3.00	52
Students not used AI	2.72	18

$$t(\text{approx.}) = -0.9272 \text{ and } p = 0.3571$$

There is no statistically significant difference in leadership confidence between students who have used AI tools and those who have not since $p = 0.3571 > 0.05$, although AI users show slightly higher average confidence (3.00 vs. 2.72). These results align with Jenkins & Khanna (2025). AI tools do not directly transform into leadership capability. It would be more efficient to incorporate AI into leadership development programs to enhance the personalized leadership learning experience, as suggested by Chen (2025). The possible reasons of this phenomenon are that (1) students may not have used AI tools deeply enough to influence their leadership confidence; (2) confidence in leadership is influenced more by interpersonal experience, teamwork, education, and/or mentorship than by tool use alone.

Although the test results are not significant, the slightly higher average for AI users proposes potential benefits such as students experienced with AI tools may develop digital skills that support their leadership development, and AI users might be more comfortable with digital communication tools, indirectly increasing their confidence in virtual contexts.

Conclusion

While AI tools are increasingly present in higher education, the present study suggests that their usage for leadership purposes remains limited. Most students have engaged in leadership roles but have not taken leadership-related courses, indicating an urgent demand for formal leadership courses. Students also have neutral trust in AI for leadership guidance and less willingness to use AI as a practice tool, reflecting their uncertainty about reliability and applicability of AI in complex interpersonal circumstances.

The quantitative results reinforce these perceptions. Although AI users report slightly higher average leadership confidence than non-users, the difference is not statistically significant. This aligns with prior research suggesting that simply interacting with AI tools does not directly build leadership capability. Leadership confidence appears to be shaped more strongly by interpersonal experience, formal instruction, mentorship, and opportunities for practice than by digital tool use alone.

Despite the lack of a significant relationship between AI use and leadership confidence, several important implications are highlighted for higher education. Students' strong preference for virtual leadership training represents their growing need to succeed in increasingly hybrid and remote work environments. Additionally, greater exposure to AI's capabilities may increase students' confidence in leveraging these tools productively.

Several limitations should be acknowledged. The study draws from a single institution, which may limit the generalizability of the findings. The use of self-reported survey data also introduces potential biases, and future research could incorporate performance-based measures or supervisor evaluations to gain a bigger picture of leadership development. Expanding the sample across diverse institutions, as well as examining specific types of AI use (e.g., generative AI for coaching, analytics tools for decision making), may provide clearer insights into where AI meaningfully contributes to leadership growth.

Overall, this study contributes to the prior literature discussing that although AI tools have the potential to enhance leadership education, they are not yet meaningfully linked to students' leadership confidence. Instead, their value may lie in supporting well-designed leadership development programs rather than replacing traditional pedagogical approaches. As higher education continues to adapt to rapid technological advancement, ongoing exploration of how to integrate AI into leadership learning environments will be essential.

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