

Article

Community College Students' Perceptions and Use of Generative Artificial Intelligence: Self-Reported AI Understanding, Accuracy Concerns, and Institutional Support Needs

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Abstract: Generative artificial intelligence (GenAI) is increasingly used in higher education, offering new learning opportunities while raising concerns about accuracy, reliability, and responsible use. This study examines community college students' perceptions and use of GenAI, focusing on self-reported AI understanding, accuracy concerns, and institutional support needs, with implications for trust and continued use. This study used a descriptive quantitative approach to analyze survey responses from 81 students at a community college in the southwestern United States. Data were summarized using frequencies and percentages. The findings showed that 76.5% of respondents had previously used AI tools, with the most frequently reported academic applications including understanding course concepts, reviewing learning materials, and obtaining grammar assistance. Additionally, 77.8% reported understanding basic AI concepts, while 44.4% identified inaccurate AI-generated information as a concern and 33.3% expressed a need for clearer institutional guidelines. These findings highlight the importance of strengthening AI literacy, encouraging critical evaluation of AI-generated content, and providing institutional guidance for responsible AI use. Although the study did not directly measure trust and continuance intention, it identifies student perceptions that may inform future research on these constructs.

Keywords: Generative Artificial Intelligence; Community College Students; AI Literacy; Accuracy Concerns; Trust in AI; Responsible AI Use

1. Introduction

Generative artificial intelligence (GenAI) has emerged as an influential technology in higher education, creating new opportunities for students to access information, complete academic tasks, and engage with learning materials. AI-powered tools can support activities including academic writing, information retrieval, and personalized learning [1]. However, the integration of GenAI into educational settings also presents challenges related to reliability, critical evaluation, and responsible use [2]. As these technologies become more accessible, higher education institutions need to develop instructional practices that balance technological innovation with academic quality and integrity.

Despite its potential benefits, GenAI presents challenges related to the accuracy, reliability, and ethical use of AI-generated content. Students may encounter inaccurate or misleading information, making it necessary to critically evaluate AI-generated responses rather than accepting them without verification [2]. In addition, the growing availability of AI-generated academic content has raised concerns about plagiarism, academic misconduct, and the need for clear institutional expectations. Cotton et al. emphasized the importance of institutional policies, training, and educational support in addressing academic integrity challenges associated with ChatGPT [3]. These concerns suggest that

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effective GenAI integration requires not only access to technology but also appropriate guidance and critical evaluation skills.

AI literacy is particularly important in addressing these challenges. Beyond basic familiarity with AI technologies, AI literacy encompasses the knowledge and skills needed to understand, evaluate, and use AI responsibly [4]. In educational settings, developing these competencies may help students recognize the limitations of AI-generated information, critically assess its reliability, and make informed decisions about appropriate academic use.

Community colleges provide an important context for examining students' experiences with GenAI. These institutions serve students with diverse educational backgrounds and academic goals [5]. Such diversity makes it valuable to investigate students' familiarity with AI technologies, their reported academic uses, and their perceptions of potential risks. Previous research has examined the educational opportunities and challenges associated with GenAI, including its potential to support learning and concerns regarding inaccurate information and academic integrity [6]. However, additional institution-specific evidence is needed to better understand community college students' experiences and support needs.

Trust is another relevant consideration in students' engagement with GenAI. Concerns about inaccurate information may affect how students evaluate AI-generated responses, while familiarity with AI tools and an understanding of their limitations may shape students' confidence in using them [4] [7]. These considerations suggest possible connections among perceived accuracy, AI literacy, trust, and continued use. However, such relationships require direct empirical investigation. The present study therefore examines students' reported perceptions and concerns without treating them as direct measures of trust or continuance intention.

This study examines community college students' perceptions and academic use of generative artificial intelligence (GenAI), focusing on their familiarity with AI tools, self-reported understanding of AI concepts, concerns about inaccurate information, and perceived needs for institutional support. Using survey responses from 81 students at a community college in the southwestern United States, the study employs descriptive statistics to identify patterns in students' reported experiences. The findings aim to inform institutional approaches to AI literacy development and responsible GenAI integration while providing a foundation for future research on trust and continued use. The study addresses three research questions:

RQ1: How do community college students report their familiarity with and academic use of generative AI tools?

RQ2: What concerns do community college students report regarding the accuracy and responsible use of generative AI?

RQ3: How do students perceive their understanding of AI concepts, and what types of institutional support do they identify as necessary for effective AI use?

2. Literature Review

Research on generative artificial intelligence (GenAI) in higher education has examined both its educational applications and associated challenges. Lo reviewed the emerging literature on ChatGPT in education, identifying potential benefits alongside concerns about the accuracy and reliability of AI-generated information [6]. Similarly, Kasneci et al. discussed opportunities for supporting student learning while emphasizing the importance of addressing misinformation and promoting responsible use [2]. Together, these studies provide a foundation for examining how students experience and evaluate GenAI in academic settings.

AI literacy plays an important role in how students understand, evaluate, and use GenAI technologies. Ng et al. conceptualized AI literacy through four dimensions: knowing and understanding AI, using and applying AI, evaluating and creating AI, and recognizing ethical issues [4]. These competencies may help students critically assess AI-generated information, identify potential inaccuracies, and make informed decisions

about appropriate academic use. However, familiarity with AI tools does not necessarily indicate the ability to evaluate their outputs critically. Examining students' self-reported understanding of AI can therefore provide insights into their perceived knowledge and potential educational support needs.

Accuracy concerns and institutional guidance are also relevant to students' perceptions of GenAI. AI-generated responses may contain incorrect or misleading information, potentially affecting users' confidence in these technologies [2]. Shin examined how AI explainability and users' understanding of algorithmic decisions relate to trust and acceptance of AI systems [7]. Although this research did not specifically investigate GenAI use in education, it highlights the relevance of trust when considering how individuals perceive AI technologies. In educational settings, uncertainty about acceptable AI use may create additional challenges. Cotton et al. emphasized the importance of institutional policies and educational guidance in addressing academic integrity concerns associated with ChatGPT [3].

Previous research has examined college students' use of GenAI, including differences in usage patterns, perceptions, and institutional policies. Baek et al. surveyed 1,001 U.S. college students, including students attending community colleges and technical institutions, and investigated their use and perceptions of ChatGPT [8]. More specifically, Ha et al. examined community college students' interactions with ChatGPT during computational problem-solving tasks, providing insights into students' perceptions and interaction patterns [9]. Although these studies provide valuable insights into students' interactions with GenAI, additional descriptive evidence from individual community college settings may help identify students' experiences, concerns, and educational support needs. Such evidence can inform institutional approaches to responsible AI integration and provide a foundation for future investigations of trust and continued use.

3. Methodology

3.1. Research Design

This study employed a descriptive quantitative research design to examine community college students' perceptions and use of generative artificial intelligence (GenAI). The research focused on students' familiarity with AI technologies, academic applications, self-reported understanding of AI concepts, concerns about AI-generated information, and perceived needs for institutional support. A descriptive approach was adopted to identify patterns in students' responses without testing relationships or making causal inferences.

3.2. Participants and Data Collection

Data were obtained from an institutional AI interest survey conducted in February 2026 at a community college in the southwestern United States. The survey was administered using Microsoft Forms and distributed to students through email. A total of 81 students participated, including 36 part-time students (44.4%), 32 full-time students (39.5%), 10 dual-enrollment students (12.3%), and three students in other enrollment categories (3.7%).

The survey was originally conducted for internal institutional purposes to assess students' familiarity with artificial intelligence and identify potential educational support needs. The survey included questions regarding students' familiarity with GenAI tools, academic applications of AI, self-reported understanding of basic AI concepts, concerns about AI-generated information, and preferences for institutional support. Questions included categorical response options, agreement scales, and multiple-response items.

3.3. Data Analysis

Data were analyzed using descriptive statistics, including frequencies and percentages. Responses were summarized to identify patterns in students' familiarity with GenAI, academic applications, accuracy concerns, and support needs. For questions allowing multiple selections, we analyzed each response category separately and

calculated percentages using the total sample of 81 respondents as the denominator. Consequently, percentages for multiple-response questions could exceed 100% when summed across categories. Trust and continuance intention were not directly measured in the survey. Accordingly, these constructs were considered only when identifying implications for future research.

4. Results

4.1. Students' Familiarity with and Use of GenAI

The survey results revealed varying levels of familiarity with generative artificial intelligence (GenAI) among community college students. As shown in Table 1, 44.4% of respondents reported having used AI tools a few times, while 23.5% reported regular use and 8.6% reported daily use. In contrast, 19.8% had heard of AI but had never used it, and 3.7% reported being unfamiliar with AI technologies. Overall, 76.5% of respondents reported having used AI tools at least once.

Table 1. Students' Familiarity with GenAI (N = 81)

Familiarity with GenAI	Frequency (n)	Percentage (%)
Daily use	7	8.6
Regular use	19	23.5
Used a few times	36	44.4
Heard of AI but never used it	16	19.8
Unfamiliar with AI	3	3.7
Total	81	100.0

Students also reported using GenAI for various academic purposes. The most frequently reported applications were understanding course concepts (n = 39), studying and reviewing learning materials (n = 35), and grammar assistance (n = 25). Other reported applications included writing and editing (n = 17), image generation (n = 16), and coding (n = 3). These findings suggest that students commonly used GenAI to assist with learning activities and academic tasks.

Regarding self-reported understanding of AI concepts, 77.8% of respondents agreed or strongly agreed that they understood basic AI concepts, while 14.8% selected a neutral response and 7.4% disagreed or strongly disagreed. These results indicate that most respondents perceived themselves as having a basic understanding of AI, although their actual AI literacy competencies were not independently assessed.

4.2. Accuracy Concerns and Institutional Support

Students reported several concerns regarding GenAI. As shown in Table 2, the most frequently identified concern was the broader social impact of AI (49.4%), followed by inaccurate AI-generated information (44.4%). Additionally, 25.9% of respondents identified overreliance on AI as a concern, while 22.2% reported uncertainty about acceptable academic use.

Table 2. Students' Concerns (N = 81)

Concerns	Frequency (n)	Percentage (%)
Social impact of AI	40	49.4
Inaccurate AI-generated information	36	44.4
Overreliance on AI	21	25.9
Uncertainty about acceptable AI use	18	22.2

Students also identified several forms of institutional support that could help them use GenAI more effectively. As shown in Table 3, the most frequently reported support need was clearer institutional guidelines (33.3%), followed by guidance on evaluating the accuracy of AI-generated information (27.2%). Other reported needs included examples of appropriate AI use (23.5%), AI learning strategies (21.0%), and instructor support

(13.6%). These findings indicate that students identified both practical and instructional support needs, particularly around institutional expectations and evaluating AI-generated information.

Table 3. Students' Support Needs (N = 81)

Support Needs	Frequency (n)	Percentage (%)
Clearer institutional guidelines	27	33.3
Guidance on checking AI accuracy	22	27.2
Examples of appropriate AI use	19	23.5
AI learning strategies	17	21.0
Instructor support	11	13.6

5. Discussion

The findings of this study provide insights into community college students' perceptions and use of generative artificial intelligence (GenAI). The results indicate that 76.5% of respondents had used AI tools at least once, suggesting that AI technologies were familiar to many students in the surveyed population. Students most frequently reported using GenAI to understand course concepts, review learning materials, and obtain grammar assistance. These findings are consistent with previous research identifying the potential of GenAI to support learning activities and provide individualized academic assistance [2,6]. However, differences in students' reported familiarity suggest that community colleges should consider varying levels of experience when developing AI-related educational resources.

AI literacy represents another important consideration. Although 77.8% of respondents agreed or strongly agreed that they understood basic AI concepts, this finding reflects self-reported understanding rather than demonstrated AI literacy. Ng et al. conceptualized AI literacy as encompassing the understanding, application, evaluation, creation, and ethical considerations of artificial intelligence [4]. Therefore, students' perceived understanding should not be interpreted as evidence that they can consistently identify inaccurate information or use GenAI effectively. Community colleges may benefit from incorporating practical AI literacy activities that help students critically evaluate AI-generated responses and recognize the limitations of these technologies.

Accuracy concerns were also evident in the survey results. Specifically, 44.4% of respondents identified inaccurate AI-generated information as a concern, while 25.9% expressed concerns about overreliance on AI. These findings are consistent with concerns discussed by Kasneci et al. regarding the reliability and limitations of large language models in educational settings [2]. Such concerns may have implications for students' trust in GenAI, although this relationship was not examined in the present study. Shin demonstrated the relevance of AI explainability to users' trust and acceptance of AI systems [7]. Nevertheless, because trust was not directly measured, no conclusions can be drawn about whether students' accuracy concerns influence their trust in or willingness to continue using GenAI.

The findings further highlight the potential importance of institutional support. Approximately one-third of respondents (33.3%) identified clearer guidelines for AI use as a support need, while 27.2% selected guidance on evaluating the accuracy of AI-generated information. These results suggest that some students may benefit from additional guidance on responsible AI use. Cotton et al. emphasized the importance of institutional policies and educational support in addressing academic integrity concerns associated with ChatGPT [3]. Community colleges could respond by providing accessible AI literacy resources, practical examples of appropriate AI use, and clear academic expectations.

Overall, the findings suggest that effective GenAI integration requires attention to students' existing experiences, perceived knowledge, and concerns about accuracy and responsible use. Although the present study cannot establish relationships among AI

literacy, trust, and continuance intention, it identifies areas that may warrant further investigation. Future research could employ validated measures and inferential statistical analyses to examine whether perceived accuracy, transparency, and AI literacy are associated with students' trust in GenAI and their intentions to continue using these technologies.

6. Conclusion

This study examined community college students' perceptions and use of generative artificial intelligence (GenAI), focusing on self-reported AI understanding, accuracy concerns, and institutional support needs. Based on survey responses from 81 students, the findings indicated that many respondents had experience using GenAI, with commonly reported academic applications including understanding course concepts, reviewing learning materials, and obtaining grammar assistance. However, concerns regarding inaccurate AI-generated information and uncertainty about appropriate academic use were also evident. The findings further highlighted differences in students' familiarity with AI technologies and their reported needs for clearer institutional guidelines and practical support.

These findings suggest that community colleges should consider strengthening AI literacy education, encouraging critical evaluation of AI-generated content, and establishing clear expectations for responsible AI use. Such efforts may help students make more informed decisions when incorporating GenAI into their academic activities.

This study was limited by its relatively small sample from a single institution, reliance on self-reported responses, and descriptive research design. Furthermore, trust and continuance intention were not directly measured. Future research should employ validated instruments and larger, more diverse samples to investigate the relationships among perceived accuracy, AI literacy, trust, and students' intentions to continue using GenAI.

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