

An Exploration of Students' Utilization of Generative Artificial Intelligence (GenAI) in Higher Education

Jung-Im Seo*, Kirsten Harrison

Department of Human Sciences, College of Agricultural, Human and Environmental Sciences, Southern University and A&M College, Baton Rouge, USA

Email: *jungim_seo@subr.edu

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Abstract

In today's digital landscape, Generative Artificial Intelligence (GenAI) has become increasingly integrated into everyday life, particularly among college students who use various GenAI technologies to support their academic performance. Despite its rapid adoption, empirical research examining students' adoption behaviors and usage patterns of GenAI in higher education remains limited. Accordingly, this study examines how students in higher education institutions in the Southeastern United States utilize GenAI technologies. The sample consisted of 108 participants. The findings indicate that more than 90% of participants use free versions of GenAI tools, with ChatGPT emerging as the most frequently used platform, followed by Grammarly. More than half of the respondents reported using GenAI for less than one hour per day. The primary motivation for use was studying or tutoring support, followed by academic writing and research assistance. Results from Multivariate Analysis of Variance (MANOVA) and univariate analysis of variance (ANOVA) revealed that traditional students demonstrated a greater understanding of GenAI capabilities compared to their non-traditional counterparts. Although most students recognize the substantial benefits of GenAI in higher education, they also express concern about its potential impact on the development of their own skills and competencies. Many participants indicated a desire to avoid excessive reliance on GenAI in their academic work. Collectively, these findings suggest that higher education institutions should strategically integrate GenAI into teaching and learning practices to enhance student outcomes while fostering responsible and balanced use in preparation for a GenAI-driven workforce.

Keywords

Generative Artificial Intelligence, Higher Education, Traditional and

1. Introduction

Artificial Intelligence (AI) technology was introduced in the mid-twentieth century. Since then, and particularly in the 21st century, Generative artificial intelligence (GenAI) has advanced rapidly and undergone significant transformation. GenAI technologies increasingly influence various aspects of daily life and are being applied across multiple fields, including healthcare communication, medical writing, education, media, and tourism (Biswas, 2023; Chan & Hu, 2023; Doğan, Celik, & Arslan, 2025; Eggmann et al., 2023; Kitamura, 2023). The rapid diffusion of these technologies is evident in recent usage data. According to Chatterji et al. (2025), by July 2025, ChatGPT, a GenAI platform developed by OpenAI, had more than 700 million weekly users who collectively sent over 2.5 billion messages per day, or approximately 29,000 messages per second. These developments demonstrate that GenAI has become increasingly embedded in everyday life, has reshaped lifestyles, and is widely used in academic, professional, and personal activities. GenAI also significantly influences decision-making processes and is increasingly relied upon in various contexts (Dzogovic, Zdravkovska-Adamova, & Serpil, 2024). The widespread adoption of AI technologies has also had a significant impact on the education sector.

Particularly in higher education, many universities are increasingly adopting GenAI in response to the diverse needs and demands of students, and growing body of research indicates that GenAI is emerging as an important educational tool. College students may use GenAI technologies to support brainstorming, writing, research, information seeking, and personalized learning. Previous studies have reported that students generally recognize the potential benefits of GenAI for learning and saving time in educational environments, while also expressing concerns regarding accuracy, ethics, privacy, and overreliance on AI-generated information (Chan & Hu, 2023; Maphosa & Maphosa, 2023; Tlili et al., 2023; Doğan, Celik, & Arslan, 2025). As the use of GenAI expands in academic settings, understanding college students' engagement with these technologies is increasingly important for promoting the effective and responsible integration of GenAI into higher education.

Although previous studies have examined the benefits, challenges, and educational implications of GenAI, further research is needed to understand undergraduate students' adoption of and perceptions regarding these technologies in higher education. Therefore, this study aims to investigate undergraduate students' adoption of GenAI technologies, their perceptions of these tools, and how they use GenAI in order to gain a deeper understanding of their learning experiences and the role of GenAI in higher education.

2. Literature Review

Higher education institutions have increasingly adopted new technologies to enhance students' capacities and improve educational outcomes (Shimpi, 2024). Generative artificial intelligence (GenAI) is one of the newest technologies shaping contemporary education. GenAI refers to a class of machine-learning models—often deep-learning-based—that synthesize novel data samples consistent with patterns learned from their training data. In recent years, GenAI technologies have supported more efficient learning processes for users, while the underlying AI models themselves continue to improve over time through iterative training and system refinement (Daher & Hussein, 2024). GenAI also plays an important role in student evaluation and the education sector (Doğan, Celik, & Arslan, 2025).

Additionally, numerous previous studies have shown that GenAI technologies significantly influence personalized learning and educational outcomes in higher education. Many college students use GenAI technologies to support their academic work, information seeking, and professional skill development (Al-Mughairi & Bhaskar, 2025; Doğan, Celik, & Arslan, 2025; Jensen et al., 2025; Shimpi, 2024). The rapid adoption of GenAI technologies among college students may be partly attributed to the fact that many belong to Generation Z, a cohort generally defined as individuals born between 1997 and 2012 and currently approximately 14 to 29 years old (Chatterji et al., 2025). Because members of Generation Z students are highly familiar with electronic devices such as computers, smartphones, tablets, and iPads, they may be more likely to actively use digital technologies, including GenAI tools (Seo, 2022, 2024; Wu et al., 2025).

Consequently, GenAI adoption may vary according to students' age and academic classification. Flaherty (2025) compared traditional students, defined as those between 18 and 24 years old, with nontraditional students aged 25 years and older and found that the two groups used GenAI technologies for different purposes and in different contexts. Similarly, Wu et al. (2025) found that first-year undergraduate students reported higher AI literacy scores in areas such as attitudes, knowledge, and capabilities than students at more advanced classification levels. These findings suggest that age and academic classification may be associated with how students use and perception of GenAI technologies.

The aforementioned discussion in the literature review section indicates that, although numerous studies have addressed the benefits and limitations of GenAI, limited research has examined the adoption, use, and perceptions of GenAI tools among traditional and nontraditional college students. Additional research is therefore needed to determine whether these two groups differ in their adoption behaviors, purposes of use, and perceptions of GenAI in their academic life. Accordingly, this study aims to investigate and compare GenAI adoption behaviors and perceptions among traditional and nontraditional college students.

Research Question (RQ)

Based on the preceding research background and literature review, this study has

two primary purposes. First, it seeks to examine how and when students utilize Generative Artificial Intelligence (GenAI) technologies in higher education. Second, it investigates students' perceptions of these technologies. To address these purposes, the following four research questions are proposed:

RQ1. In what ways, for how long, and with what types of subscriptions do college students use Generative Artificial Intelligence (GenAI) technologies?

RQ2. What types of GenAI technologies are utilized by college students?

RQ3. How frequently do traditional and non-traditional students use primary GenAI technologies?

RQ4. How do perceptions of GenAI technologies differ between traditional and non-traditional students?

3. Methodology

3.1. Sampling and Data Collection

To better understand students' experiences, behaviors, and perceptions regarding GenAI, this study employed a quantitative research approach and used convenience sampling to recruit participants. The questionnaire items were adapted from [Chan and Hu \(2023\)](#), and additional items were developed by the authors to obtain more detailed information about participants' experiences using GenAI.

The questionnaire took approximately 10 to 15 minutes to complete. After obtaining permission from each course instructor to conduct the survey, the authors distributed questionnaires to participants during regular class sessions. The authors contacted 125 participants from 15 classes; however, 108 responses were retained for analysis. The data were analyzed using frequency analysis, factor analysis, multivariate analysis of variance (MANOVA), and univariate analysis of variance (ANOVA). When the MANOVA result revealed statistically significant differences at the $p \leq 0.05$ level, follow-up ANOVA tests were conducted to examine differences in GenAI perception factors between traditional and non-traditional students.

3.2. Questionnaire Design for Survey

The investigators developed the questionnaire for this study. The instrument consisted of 7 sections: 1) 1 item assessing GenAI use, 2) 16 items related to GenAI tools, 3) 2 items on GenAI payment options, 4) 1 item addressing the purpose of GenAI use, 5) 1 item measuring time spent using GenAI, 6) 18 items assessing perceptions of GenAI, adapted from [Chan and Hu \(2023\)](#), and 7) 9 demographic items. After a pilot test with at least 50 college students at the Southeastern higher education institution, the investigators finalized the questionnaire. Survey data were collected during the spring 2026 semester. A total of 108 valid respondents were included in the data analysis.

3.3. Description of Sample

A total of 108 college students participated in the survey. Of these participants,

84.3% ($n = 91$) identified as female, and 15.7% ($n = 17$) identified as male. Regarding academic classification, 10.2% ($n = 11$) were freshman, 26.9% ($n = 29$) were sophomore, 27.8% ($n = 30$) were junior, 32.4% ($n = 35$) were senior and 2.8% ($n = 3$) did not report their classification. Participants ranged in age from 18 to 55 years. The mean age was 21.10 years, and the median age was 21 years. Among the respondents, 89.8% ($n = 97$) reported using GenAI technology during the academic year. However, only 11 students (10.2%) did not report using it. This study included 87.0% ($n = 94$) of traditional students, ranging in age from 18 to 24 years, and 13.0% ($n = 14$) nontraditional students, aged 25 years and older. The demographic characteristics of the college student participants are presented in **Table 1**.

Table 1. Demographic information of the college student participants ($n = 108$).

		Frequency (n)	Percent (%)
Gender	Male	17	15.7
	Female	91	84.3
Ages	18 - 19 Years	31	28.7
	20 - 24 Years	63	58.3
	Over 25 Years	14	13.0
Classification	Freshman	11	10.2
	Sophomore	29	26.9
	Junior	30	27.8
	Senior	35	32.4
	Other	3	2.8
Using GenAI Technology	Yes	97	89.8
	No	11	10.2
Group	Traditional	94	87.0
	Nontraditional	14	13.0
Total		108	100

3.4. Data Analysis

For the statistical evaluation, data were analyzed using IBM SPSS Statistics software. Principal component factor analysis with varimax rotation was conducted to identify the underlying factor structure of GenAI perceptions. Items with factor loading below 0.50 were excluded from further analysis. The variance explained by each factor was also examined. To assess differences between traditional-age and nontraditional students, a MANOVA using Wilks' Lambda was conducted on the mean scores of the GenAI perception factors. When the MANOVA results were statistically significant at the $p < 0.05$ level, follow-up univariate ANOVA

tests were conducted to determine which GenAI perception factors differed significantly between the two groups. Statistical significance was evaluated using F values and p values.

4. Results

4.1. Research Questions (RQ)

4.1.1. Results of RQ 1

Participants selected their purposes for using GenAI tools from 5 predefined categories, with the option to select all that applied. The most frequently endorsed purpose was studying or tutoring support (38.1%), followed by academic writing and research (29.8%). Coding or technical support (2.2%) was among the least commonly reported areas for using GenAI tools. Details of the participant's purposes for using GenAI are presented in **Figure 1**.

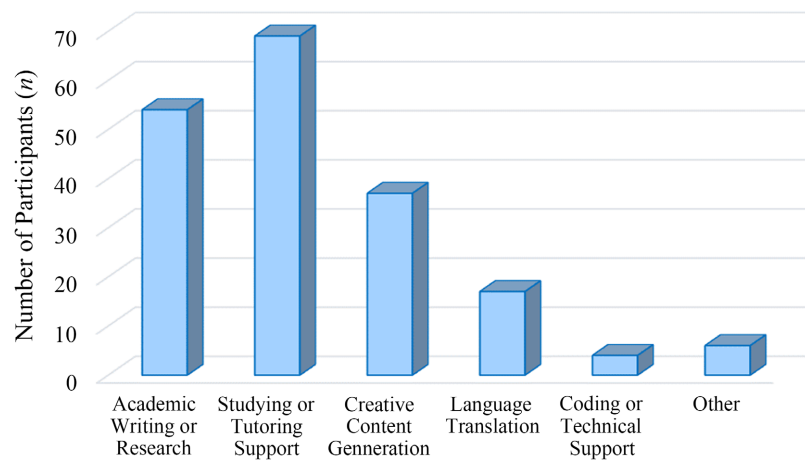


Figure 1. Primary purposes of using GenAI technologies.

More than half of the participants ($n = 61$, 56.5%) reported using GenAI technologies for less than one hour per day. A large majority of participants ($n = 100$, 92.6%) reported using free version of GenAI technologies during their academic year. Details regarding the amount of time participants spent using GenAI technologies and their subscription preferences are presented in **Figures 2** and **Figures 3**.

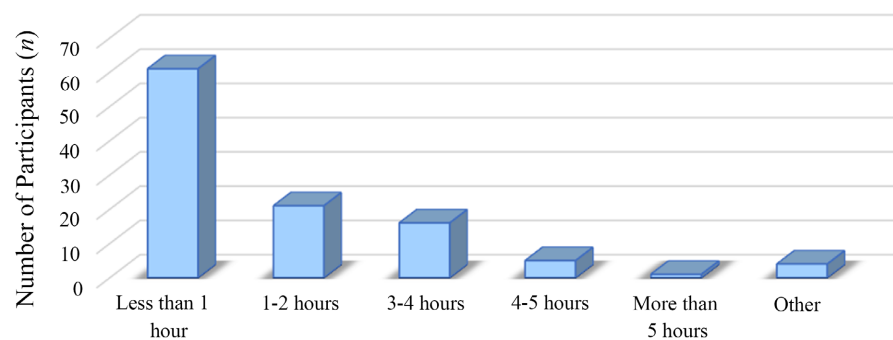


Figure 2. Amount of time participants spent using GenAI technologies.

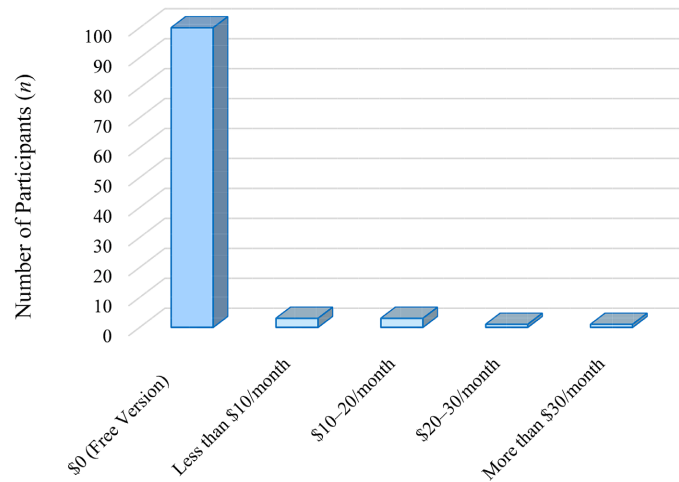


Figure 3. Subscription preferences for GenAI technologies.

4.1.2. Results of RQ 2

Participants were asked to indicate how often they used each of 15 GenAI technologies. According to the frequency analysis, ChatGPT ($M = 4.60$) and Grammarly ($M = 3.69$) were the most frequently used technologies among college students. The median usage rating for both tools were 4.00 on a 7-point likelihood scale. Therefore, GenAI technologies with a median usage rating of 1, indicating “never”, were excluded from subsequent analyses. Further analyses were conducted on the two GenAI technologies: ChatGPT and Grammarly. Details of the participants’ use of GenAI technologies are presented in **Table 2**.

Table 2. Frequency of use by type of GenAI technology.

	Mean (M)	Median
ChatGPT	4.60	4.00
Copilot	1.78	1.00
Gemini	1.58	1.00
Grammarly	3.69	4.00
QuillBot	2.20	1.00
Jasper	1.00	1.00
Notion AI	1.14	1.00
Elicit	1.00	1.00
Scite.ai	1.00	1.00
Canva Magic Desing/Magic Write	1.97	1.00
Adobe Firefly	1.16	1.00
Runway ML	1.00	1.00
DeepSeek	1.00	1.00
Replit Ghostwrite	1.00	1.00
Fathom	1.00	1.00

Note: Scores ranged from 1 (Never) to 7 (Always).

4.1.3. Results of RQ 3

The results of the MANOVA and follow-up ANOVAs compared GenAI technology usage between traditional and nontraditional students. The MANOVA revealed no significant multivariate effect, Wilks' Lambda, $F = 1.69$, $p = 0.19$, indicating no overall difference between the two groups in their combined use of ChatGPT and Grammarly. Although the overall multivariate result was not statistically significant, an exploratory follow-up ANOVA indicated that traditional students reported somewhat higher use of ChatGPT ($M = 4.72$) than nontraditional students ($M = 3.79$). However, this difference did not reach the conventional level of statistical significance, $F = 2.92$, $p = 0.09$. Details results of MANOVA and ANOVA analyses are presented in **Table 3**.

Table 3. Results of the MANOVA and ANOVA for GenAI technology use by traditional and non-traditional students.

Variable	Group Mean Scores			
	Traditional ($n = 94$)	Non-Traditional ($n = 14$)	Univariate F	Multivariate F
ChatGPT	4.72	3.79	2.92*	1.69
Grammarly	3.80	3.00	1.69	

Note: Means with the superscript indicate significant differences between two groups. Scores ranged from 1 (Never) to 7 (Always). * $p \leq 0.1$.

4.1.4. Results of RQ 4

Factor analysis was employed to reduce the dataset and identify underlying relationships among variables. An exploratory factor analysis using principal axis factoring with varimax rotation was conducted on the 18 GenAI perception items to identify latent dimensions. Items with factor loadings below 0.50 were excluded, and factors with eigenvalues greater than 1.00 were retained. All retained factor loadings exceeded 0.603. The three-factor solution accounted for 50.26% of the cumulative variance. Cronbach's alpha coefficients ranged from 0.742 to 0.896.

Table 4 presents the principle component factor analysis results and reliability coefficients. This study identified three factors to describing perceptions of GenAI Technologies: 1) Knowledge of GenAI, 2) Benefits of GenAI, and 3) Cognitive Perception of GenAI. The reliability of each factor was assessed using Cronbach's alpha coefficients.

A significant difference was found between traditional and nontraditional students in MANOVA ($F = 3.57$, $p = 0.017$). Follow-up ANOVA results revealed a significant difference for one factor, Knowledge of GenAI ($F = 10.88$, $p = 0.001$). Specifically, traditional students ($M = 5.65$) reported higher levels of GenAI knowledge than non-traditional students ($M = 4.41$). However, no significant group differences were found for the other two factors; Benefits of GenAI ($F = 0.08$, $p = 0.773$) and Cognitive Perception of GenAI ($F = 0.889$, $p = 0.348$). Details results of MANOVA and ANOVA analyses of perceptions of GenAI are presented in **Table 5**.

Table 4. Principal component factor analysis of perception of GenAI technology.

Factor Name	Items	Factor Loading	Eigen-values	Percentage of Variance	Alpha Coefficient
Factor 1 Knowledge of GenAI	I understand generative AI technologies can exhibit biases and unfairness in their output.	0.853	4.506	28.161	0.896
	I understand generative AI technologies can generate output that is out of context or inappropriate.	0.850			
	I understand generative AI technologies have limited emotional intelligence and empathy, which can lead to output that is insensitive or inappropriate.	0.841			
	I understand generative AI technologies may rely too heavily on statistics, which can limit their usefulness in certain contexts.	0.803			
	I understand generative AI technologies can generate output that is factually inaccurate.	0.798			
	I understand generative AI technologies have limitations in their ability to handle complex tasks.	0.663			
Factor 2 Benefits of GenAI	I think generative AI technologies are a great tool because they are available 24/7.	0.799	3.179	19.869	0.814
	I think generative AI technologies can provide me with personalized and immediate feedback and suggestions for my assignments.	0.761			
	I think generative AI technologies are a great tool for students support service due to anonymity.	0.745			
	I believe generative AI technologies can provide me with unique insights and perspectives that I may not have thought of myself.	0.719			
	I believe generative AI technologies can help me save time.	0.669			
	I envision integrating generative AI technologies into my teaching and learning practices in the future.	0.603			
Factor 3 Cognitive Perception of GenAI	Generative AI technologies will hinder my development of generic or transferable skills such as teamwork, problem-solving, and leadership skills.	0.849	1.956	12.225	0.742
	Generative AI technologies will limit my opportunities to interact with others and socialize while completing coursework.	0.789			
	I can become over-reliant on generative AI technologies.	0.690			
	Using generative AI technologies to complete assignments undermines the value of university education.	0.613			
Cumulative percentage				60.26%	

Table 5. Results of the MANOVA and ANOVA for perceptions of GenAI technology by traditional and non-traditional students.

	Group Mean Scores		Univariate <i>F</i>	Multivariate <i>F</i>
	Traditional (<i>n</i> = 94)	Nontraditional (<i>n</i> = 14)		
GenAI Technologies				3.57***
Knowledge of GenAI	5.65	4.41	10.88***	
Benefits of GenAI	4.82	4.73	0.08	
Cognitive Perception of GenAI	4.43	4.05	0.89	

Note: Means with the superscript indicate significant differences between traditional and nontraditional. Scores ranged from 1 (Strongly Disagree) to 7 (Strongly Agree). *** $p \leq 0.05$.

5. Discussion

This study assessed the primary purposes, duration of use, subscription preferences, and perceptions regarding GenAI among at the college students at a south-eastern higher education institution. The study included a total sample of 108 participants ranging in age from 18 to 55 years. The findings revealed that most participants ($n = 97$, 89.8%) reported using GenAI technologies. This result suggests that GenAI has become a commonly used academic support tools among current college students. Although some students reported that they did not use GenAI technologies, it is possible that they may encounter or indirectly use AI-supported tools without fully recognizing them as GenAI. For example, students may use writing-assistance, search, grammar-checking, or recommendation tools that incorporate AI features but may not identify these tools as GenAI.

During academic year, students primarily reported using GenAI for academic writing or research and studying or tutoring support. In contrast, coding or technical support were the least frequently reported purposes for using GenAI. These findings are consistent with the previous research indicating that college students commonly use GenAI for academic tasks, including writing assistance, information seeking, research support, and learning-related activities (Al-Mughairi & Bhaskar, 2025; Flaherty, 2025; Sousa & Cardoso, 2025; Marken, 2026). Similarly, previous research has found that fewer students use GenAI technology, such as ChatCPT, for computer coding and computer programming-related tasks (Chatterji et al., 2025).

Additionally, a smaller number of participants reported using GenAI technologies to assist with email composition and casual conversation. This finding suggests that, although academic support remains the primary use of GenAI among students, these technologies may also serve practical communication and everyday lifestyle purposes. Overall, the findings indicate that GenAI is becoming integrated into both students' academic experiences and selected aspects of their daily lives. This finding is consistent with previous of Chatterji et al. (2025), which also identified GenAI use beyond strictly academic purposes.

Among the GenAI technologies examined, ChatGPT and Grammarly were the most frequently used GenAI tools among undergraduate students, with ChatGPT reported more frequently than Grammarly. Specifically, traditional students reported higher mean usage of ChatGPT ($M = 4.72$) and Grammarly ($M = 3.80$) than nontraditional students, who reported mean scores of 3.79 for ChatGPT and 3.00 for Grammarly. These descriptive differences suggested that traditional students may use these GenAI tools more often than nontraditional students. One possible explanation is that traditional students may be more familiar with digital learning platforms and emerging technology tools because of their more recent educational experiences. For example, many traditional students may have used virtual or hybrid learning platforms during the COVID-19 pandemic, which may have increased their familiarity with online academic technologies. However, this interpretation should be considered exploratory and requires further investigation.

The first notable finding was that most college students reported using GenAI technologies for less than one hour per day and primarily relied on free versions of these tools. This pattern suggests that free GenAI platforms may provide sufficient functionality to meet many students' academic needs, including academic writing, research, studying, and tutoring support. Although paid subscriptions for some GenAI platforms may cost approximately \$20 per month, this expense may be difficult for some undergraduate students to afford. The findings may indicate that cost is an important consideration in students' decisions about whether to subscribe to paid GenAI services.

Another notable consideration is that many college students may be unaware that the Universities or other higher educational institutions provide access to certain GenAI technologies without requiring students to purchase individual subscriptions. For example, students who have access to institutionally licensed Microsoft 365 and Windows products may be able to use Microsoft Copilot or other AI-enabled features at no additional personal cost (Rognier, 2025; CDW Export, 2026). When institutions communicate the availability of these platforms and related AI-enabled features, students may be more likely to use and explore GenAI tools. Institutional access may reduce students' out-of-pocket costs while increasing their exposure to technologies that can support academic writing, research, studying, and other learning activities. Therefore, students' use of GenAI may be influenced not only by their personal preferences and academic needs but also by the availability and visibility of institutionally supported technology resources. Increased awareness of these resources could promote more equitable access to GenAI technologies among college students.

The important findings of this study indicated that traditional students ($M = 5.65$) demonstrated greater knowledge of GenAI limitations than non-traditional students ($M = 4.41$). Specifically, traditional students were more likely to recognize that GenAI technologies can make mistakes, provide inaccurate information, and have inherent limitations. The finding may suggest that traditional students have greater exposure to GenAI tools or more experience evaluating digital infor-

mation. Therefore, when college students use GenAI to obtain important research-related information, they should verify the accuracy of the information by consulting reliable and credible sources.

Notably, both traditional and non-traditional students recognize the GenAI as a helpful academic support tool. Students identified several benefits of GenAI technologies, including saving time, 24/7 availability, promptly feedback, and personalized suggestions to support their academic learning process. Although both groups reported using GenAI extensively for academic support, they also expressed concerns about becoming overly reliant on these technologies. Students indicated that excessive dependence of GenAI could hinder the development of problem-solving and leadership skills. In addition, they were concerned that frequent reliance on GenAI might reduce opportunities for personal interaction and weaken the development of social communication skills. These concerns suggest that higher education institution should encourage students to use GenAI as a supportive tool for learning and brainstorming while maintaining meaningful interaction with peers, instructors, and other members of academic community.

6. Limitations and Scope for Future Study

This study had several limitations. First, because the study used a cross-sectional design, the findings reflect participants' perceptions and use of GenAI technologies at one point in time and cannot establish causal relationships. Second, the study relied on convenience sample drawn from a single geographic area, which may limit the generalizability of the findings. Third, the study focused exclusively on undergraduate students. Therefore, the findings may not fully represent the perceptions and use of GenAI technologies among undergraduate students across the United States or at other types of higher education institutions.

To enhance the validity and reliability of future findings, researchers should include multiple institutions across diverse regions and recruit larger, more representative samples. Precious studies have reported that male students may use GenAI technologies more frequently than female students (Chatterji et al., 2025; Marken, 2026). Although the present study did not identify significant gender differences in GenAI use, the sample size and gender distribution may have limited the ability to detect such differences. Future research should therefore recruit a more gender-balanced sample to examine potential differences in GenAI use across gender group. In addition, integrating qualitative and quantitative approaches could provide a deeper and more nuanced understanding of how undergraduate students adopt and use GenAI technologies in higher education settings. Future research should also include students majoring in computer science, engineering, or other technology-related fields. Including these students may provide more practical guidance and theoretical support for understanding how GenAI can be used for coding, programming, and other technical tasks. Such research could help identify factors that encourage the effective and responsible use of GenAI technologies across broader undergraduate population.

7. Implication

The findings of this study have several implications for higher education institutions. First, because most undergraduate students reported using GenAI tools such as ChatGPT and Grammarly, to support their academic work, universities should recognize that GenAI has become part of students' academic learning practices. Institutions should therefore establish clear guidelines for the appropriate, ethical, and responsible use of GenAI in coursework. Second, universities may promote more equitable access to GenAI by informing students about institutionally available tools, such as Microsoft Copilot or other AI-enabled software provided through campus licenses. Clear communication about these resources may reduce students' out-of-pocket expenses and expand access to academic support technologies. Finally, faculty should encourage students to use GenAI as a supportive learning tool rather than a substitute for independent thinking, problem-solving, peer interaction, or instructor guidance. Instructors may also incorporate in-personal discussion, hands-on activities, and applied learning experiences to strengthen students' critical-thinking and practical skills. This balanced approach may enable students to benefit from GenAI while continuing to develop essential academic, communication, and professional skills.

8. Conclusion

Although there is limited understanding of GenAI use among college students, this study provides a comprehensive examination of students' use of GenAI technologies. Specifically, the study explored the frequency and duration of GenAI use, types of GenAI subscriptions, and differences in perceptions of GenAI technologies between traditional and nontraditional students. The findings indicated that most college students used GenAI technologies for less than one hour and primarily relied on free subscription versions. These findings may suggest that, when students complete coursework, conduct research, or seek information in their daily lives, they may not always recognize when they are using GenAI-enabled technologies as academic support tools. Hence, students may benefit from greater awareness of the potential benefits and appropriate applications of GenAI in the academic learning process. However, this study also found that students did not want to become overly reliant on GenAI technologies. Instead, they recognized the importance of developing and improving their communication and problem-solving skills throughout their academic experiences. Higher education institutions should encourage in-person learning activities and peer-group discussions while promoting the responsible use of GenAI. In addition, institutions should establish clear ethical guidelines and academic assessment rubrics for the appropriate use of GenAI technologies in coursework.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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