



## Perceptions and Paradoxes: Exploring Graduate Students' Attitudes towards Generative AI's Role in Higher Education

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Received 28/06/2025

Revised 02/09/2025

Accepted 04/10/2025

### Abstract

**Background and Aim:** This study investigates the attitudes of graduate students toward generative artificial intelligence (AI) technologies in the context of higher education. Specifically, it examines students' level of knowledge, willingness to use, and concerns regarding the educational application of generative AI tools such as ChatGPT.

**Materials and Methods:** Anchored on a descriptive-correlational research design, the study employed quantitative methods to gather data from the 134 graduate students using a validated survey instrument.

**Results:** Findings revealed that participants generally exhibited a moderate level of understanding, a high degree of willingness to use generative AI, and moderate levels of concern related to its potential impact on academic integrity, skill development, and social interaction. Statistically significant differences were found between knowledge, willingness, and concern levels. However, correlation analyses showed no significant relationships between the frequency of AI usage and the three attitude dimensions, indicating that regular exposure does not necessarily lead to increased understanding or reduced concern. Furthermore, the findings highlight the importance of cultivating reflective engagement and critical awareness among graduate students as they navigate the opportunities and limitations of emerging technologies in their academic pursuits.

**Conclusion:** This study contributes to the growing body of literature on AI in education and offers actionable insights for institutional policy, curriculum development, and further research. This study extends the current understanding by revealing specific attitudes within the context of graduate education in the Philippines, a perspective largely absent in the existing literature.

**Keywords:** Generative AI, Graduate education, Student attitudes, AI in education, ChatGPT, Higher education, Educational technology

### Introduction

Generative AI is a result of human evolution and historical progress (Okaiyeto et al., 2023). It represents the collective efforts of man to create intelligent machines, improve communication, and push the boundaries of technology. Whether we like it or not, technology often disrupts traditional practices, requiring people to adapt and consider the potential benefits and drawbacks of new technologies (Qadir, 2023). One concrete manifestation is the advent of ChatGPT, an incredible achievement of generative artificial intelligence, which has led to the most rapid adoption of any product in human history (Wu, 2023). This Understanding of Generative AI's role in the broader context of human history helps us appreciate both the possibilities and the challenges that lie ahead as we move further into the age of artificial intelligence.

Generative Artificial Intelligence refers to AI systems that can generate new content, such as written text, images, and videos (Abunaseer, 2023; Wang et al., 2023; Baskara, 2023). This technology has immense potential in the field of education. There exist several beneficial educational applications of this technology, both for learners and educators (Qadir, 2023). It can create personalized learning materials, generate simulated environments for immersive learning experiences, and develop interactive educational content. Several studies underscore the effectiveness of GenAI in facilitating personalized learning experiences, such as providing individualized feedback, enhancing language skills, and supporting specific academic tasks like writing lab reports or creating lesson plans (Noroozi et al., 2024). GenAI's capacity to deliver instant, accessible, and consistent feedback is particularly valued in fostering learner autonomy and enhancing learning outcomes. Since the debut of AI in education, various AI approaches have been considered to foster innovative teaching and learning practices, presenting opportunities that would have otherwise been impossible to materialize. AI equips systems with reasoning, allowing them to learn from experience, adjust to new inputs, and perform human-like tasks (Giannakos et al., 2024).





Generative AI is bringing in transformational effects on the educational landscape, quickly changing how we think about education, from how we teach to what skills students need (Denny et al., 2024). Its evolving role in education is increasingly recognized for its significant promise and continuous development. It enhances writing and reading skills for younger students by detecting grammatical and syntactic errors, thus improving their language abilities. Additionally, educators can use GAI to create animated instructional content, providing a captivating learning experience that ignites students' academic curiosity and keeps them engaged (Mittal et al., 2024). To participate more deeply as a social agent in education, the AI would need to be capable of acquiring, consolidating, remembering, and transferring knowledge. It is important to note that this does not assume AI will think or act as a human – only that it could be capable of participating in conversations for learning, bringing its own capabilities to dialogues such as its immediate access to internet tools and resources (Sharples, 2023).

Generative Artificial Intelligence (AI) has gained immense popularity, but it has also brought forth new challenges and concerns in academia. Despite the myriad potential educational benefits, in its current state, ChatGPT has been found to have several serious inherent limitations, such as generating wrong answers and making up articles that do not exist (Baidoo-Anu & Ansah, 2023). GenAI has its occasional failure to grasp contextual nuances and its tendency to rely on existing data, which may perpetuate inaccuracies or outdated information (Noroozi et al., 2024). Another major worry is AI-assisted cheating, where students use Generative AI to complete assignments and exams (Okaiyeto et al., 2023). That's why local educational authorities around the world often prohibit the use of ChatGPT in schools. For example, the University of Hong Kong has temporarily prohibited students from utilizing ChatGPT and other AI-based tools in their academic assignments (Su & Yang, 2023). Students who overly depend on ChatGPT for answers instead of actively participating in in-depth discussions with their peers and teachers may miss out on the opportunity to acquire knowledge and develop critical thinking skills through meaningful interactions (Wu, 2023). A range of educational models has highlighted that working on authentic tasks with others is essential for establishing deep and complex learning opportunities for learners (Giannakos et al., 2024). Moreover, there are challenges concerning the constraints of GenAI that pertain to ethical considerations, plagiarism, and upholding academic integrity. Apparently, the use of ChatGPT in education raises ethical and safety issues, as there is the potential for technology to be used to manipulate or deceive students (Su & Yang, 2023). Transparency and accountability emerge as foundational principles for the ethical use of GenAI (Nartey, 2024). There is a need for mechanisms to ensure the credibility and reliability of the educational materials generated by AI systems (Abunaseer, 2023; Kooli, 2023; Wang et al., 2023; Wang et al., 2023).

ChatGPT and other generative AIs are already pushing educational boundaries and initiating a significant paradigm shift in existing educational praxis (Baidoo-Anu & Ansah, 2023). Educational institutions and professionals would be attracted to the notions of free or cheaper automatically created learning materials, especially due to the current developments of automated content generation and the fact that there are areas where GenAI is producing effective learning materials (Giannakos et al., 2024). Incorporating Generative Artificial Intelligence (AI) into educational settings represents a notable departure in teaching and learning methodologies (AlAli & Wardat, 2024). It's evident that although AI offers opportunities to enhance education, its integration demands meticulous attention to ethical, equitable, and inclusive principles. The future trajectory of GenAI in education is envisioned with cautious optimism. There is a strong sense that as educators and learners become more familiar with GenAI technologies, their integration into educational systems will continue to evolve. The potential for GenAI to transform educational access and effectiveness globally is recognized, suggesting a shift towards more AI-inclusive curricula and teaching methods. However, this optimism is tempered by the acknowledgment of the need for ongoing research to address the challenges and limitations identified (Noroozi et al., 2024).

Given the potential for automated content and the different challenges associated with its use, an important question is whether (and, if so, how) GenAI's capabilities for automated content creation are going to be utilized to support teaching and learning. This question heavily relies on the role of the teacher in adopting such practices and how teachers can work together with those tools to further develop their learning materials and teaching practices (Giannakos et al., 2024). While the potential benefits are promising, it is crucial to navigate the complexities carefully and thoughtfully to ensure an inclusive, equitable, and effective learning experience for all students in the AI era (Ghimire et al., 2024). The rise of Generative AI may seem like a cause for panic, amid a slew of alarmist articles and the rapid bans by several educational bodies and institutions. However, due to multiple paradoxes that



these tools create, this Generative AI is not Ragnarök but rather a transformative resource that educators and students can draw on in teaching and learning (Lim et al., 2023). Raising awareness of these tools, using them together in class, and leading discussions with students about their pros and cons offer a more sustainable way forward than either banning these tools or making them central to entire curricula. Professional development programs must equip educators with AI literacy and pedagogical skills to leverage AI-driven instructional strategies effectively. Cultivating a technologically adept educator workforce will allow for the seamless integration of Generative AI as a supplementary tool to enhance teaching and learning (Kadaruddin, 2023).

Despite the growing global discourse on AI in education, there remains limited empirical evidence on how students in regional state colleges in the Philippines perceive and interact with generative AI tools. In particular, no systematic inquiry has yet explored the attitudes of graduate students towards the use of generative AI in their academic work. As graduate students navigate the demands of research writing, advanced coursework, and professional development, their perspectives on the appropriateness, usefulness, and ethical considerations of using AI technologies remain undocumented. This lack of localized research creates a critical knowledge gap that must be addressed, especially as the institution aims to strengthen research culture and digital competence among its graduate student population.

This study seeks to address this gap by exploring the attitudes of graduate students towards the use of generative AI in education. Specifically, it aims to investigate how these students perceive the usefulness, ethical implications, and limitations of generative AI tools in supporting their learning and academic work. In the attempt to grasp the experiences and views of graduate-level students, the research intends to provide localized insights that can inform institutional policies, instructional strategies, and support systems. The findings will contribute to broader conversations about ethical, pedagogical, and practical responses to the integration of AI in graduate education.

## Theoretical Framework

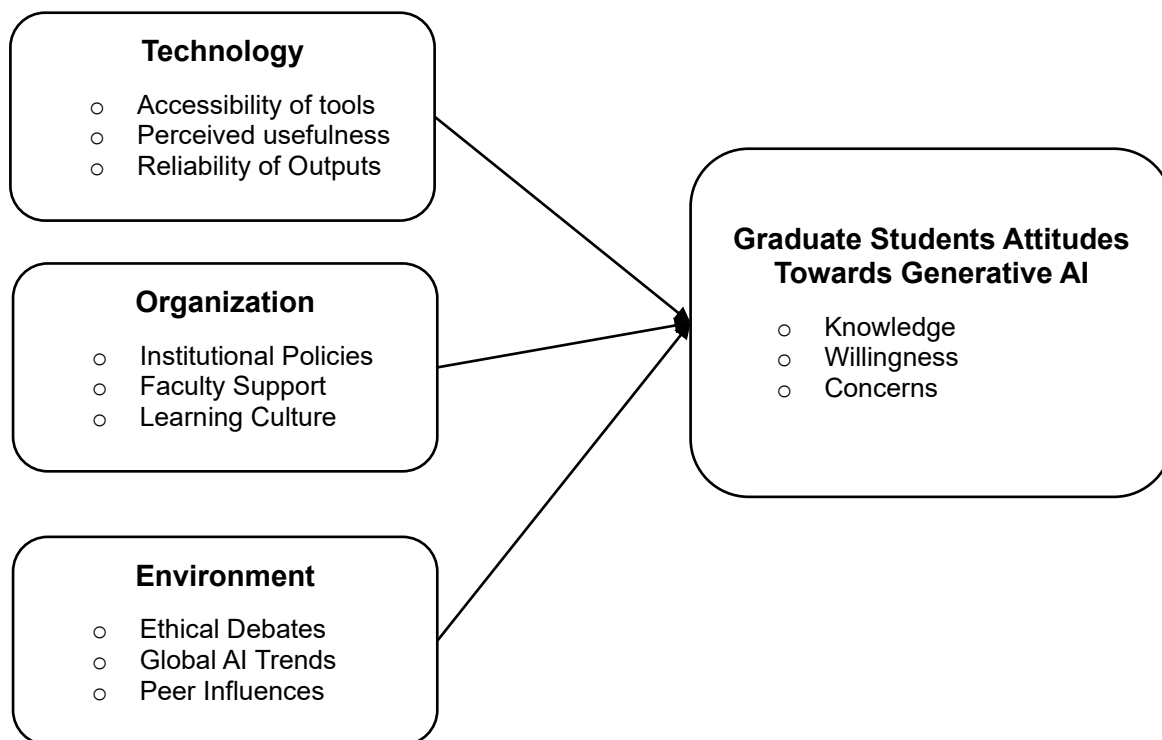
This study is anchored on the Technology-Organization-Environment (TOE) framework developed by Tornatzky and Fleischer in 1990 (Arpaci et al., 2012), which has been widely utilized in understanding technology adoption and diffusion in different contexts, including education. The TOE framework posits that three interrelated dimensions, Technology, Organization, and Environment, influence the adoption and use of innovations. Applying TOE to this study provides a structured lens for examining graduate students' attitudes towards generative AI technologies.

**Technological Context.** The technological dimension pertains to the perceived characteristics of generative AI technologies that influence adoption, such as usefulness, ease of use, accessibility, and risks. In this study, students' knowledge of generative AI tools reflects their awareness and understanding of the technology's capabilities and limitations. Their willingness to use these tools indicates their readiness to adopt innovations based on perceived benefits. Meanwhile, concerns highlight perceived risks, including issues of reliability, ethics, and academic integrity. These elements align with the TOE's technological context, which emphasizes how perceptions of a technology's relative advantage and complexity affect adoption behavior.

**Organizational Context.** The organizational dimension reflects the structures, processes, and resources within an institution that facilitate or hinder adoption. In this study, the organizational context is represented by the educational environment of graduate students, including their access to digital resources, institutional policies on AI use, and faculty guidance. Graduate students' attitudes are shaped not only by personal perceptions but also by how their academic programs integrate or regulate AI technologies. Institutions that promote responsible AI use may enhance willingness, while unclear policies may heighten concerns.

**Environmental Context.** The environmental dimension involves external factors such as societal norms, government regulations, peer influence, and global educational trends. The integration of generative AI in education is influenced by broader discourses on ethics, academic honesty, equity, and labor market expectations. Graduate students, as future professionals and leaders, are exposed to these external pressures, which shape both their willingness to adopt AI tools and their concerns about its misuse. In the Philippine context, where digital transformation is uneven, the environmental context underscores cultural attitudes toward technology adoption and the global push for AI-driven educational reforms.

This study establishes a holistic understanding of students' attitudes toward generative AI by situating the variables of knowledge, willingness, and concerns within the TOE framework. It highlights that adoption is not solely a matter of individual preference but is influenced by technological affordances, organizational support, and environmental pressures. This framework provides the theoretical grounding necessary to interpret findings and propose strategies for the responsible and inclusive integration of generative AI in higher education.



**Figure 1:** Theoretical Framework Based on the TOE Model

### Statement of the Problem

This study aimed to explore the students' perceptions and attitudes towards generative AI technologies of graduate school students.

Specifically, this study sought to answer the following questions:

1. What is the frequency of usage of generative AI technologies among graduate school students?
2. What is the level of students' attitudes towards generative AI technologies in terms of:
  - 2.1. Knowledge of Generative AI Technologies
  - 2.2. Willingness to Use Generative AI Technologies
  - 2.3. Concerns About Generative AI Technologies
3. Is there a statistically significant difference among these variables?
4. Is there a statistically significant relationship between:
  - 4.1. Frequency of Usage and the Level of Knowledge about Generative AI Technologies
  - 4.2. Frequency of Usage and the Level of Willingness to Use generative AI technologies
  - 4.3. Frequency of Usage and the Level of Concerns About Generative AI Technologies

### Hypotheses

This study aimed to comprehensively understand graduate students' interactions with generative AI technologies. Specifically, the study tests the following hypotheses:

1. There is no statistically significant difference among variables.





2. There is no statistically significant relationship between frequency of usage and the level of knowledge about generative AI technologies.
3. There is no statistically significant relationship between frequency of usage and the level of willingness to use generative AI technologies.
4. There is no statistically significant relationship between frequency of usage and the level of concerns about generative AI technologies.

## Methodology

This section presents the research methodology of the study. It included discussions on the research design, research locale, respondents of the study, and research instrument.

### Research Design

This study employed a descriptive correlational research design, utilizing quantitative methods to systematically gather and analyze data. The descriptive component of the design aims to provide a clear and comprehensive account of graduate students' perceptions and attitudes toward generative AI technologies in the context of education. This includes describing the extent to which students find such technologies useful, ethical, or appropriate for academic tasks such as research writing, studying, and content creation. Meanwhile, the correlational aspect of the design is intended to identify potential relationships or associations between key variables, such as students' frequency of AI use, knowledge, willingness, and concerns about generative AI technologies. This design seeks to determine whether and how variables are statistically related.

The choice of this design is particularly suited for this study because it allows for both descriptive insight and exploratory analysis of patterns among student responses. It enables the researcher to capture the current state of students' attitudes measurably and to determine whether specific factors are associated with particular attitudes toward generative AI. Through this approach, the study can contribute to evidence-based recommendations for integrating AI responsibly and effectively in higher education settings.

### Research Environment

The study was conducted in one of the prominent colleges located in Pagadian City, Philippines. The institution was selected as the research site due to its accessibility and relevance to the study's objectives. It houses a growing School of Graduate Studies, which offers various master's programs ( Master of Arts in Education (MAEd), Master of Science in Environmental Resources Management (MSERM), and Master of Agricultural Development (MAGDev) programs) and serves as an ideal environment for exploring graduate students' perspectives on emerging educational technologies. The presence of the target population, where graduate students actively engaged in research, coursework, and professional development, makes this institution a suitable and strategic setting for investigating attitudes toward generative AI in education. The institution's emphasis on academic excellence, digital innovation, and research development further underscores the appropriateness of the research environment.

### Research Participants

The study included 134 graduate school students from various master's programs, selected through convenience sampling to accommodate practical considerations and constraints. The distribution of the participants is presented in Table 1.

**Table 1** Participants of the Study

Sex	Frequency	Percent
Male	36	26.9
Female	98	73.1
Total	134	100

### Research Instruments

The structured questionnaire, which served as the primary instrument for data collection, was adapted with permission from the validated survey by Chan and Hu (2023). Reliability testing was



conducted on the instrument's scales, with the "Knowledge of Generative AI Technologies" scale yielding a Cronbach's alpha of .847, suggesting high internal consistency. Likewise, the "Willingness to Use Generative AI Technologies" scale reported a Cronbach's alpha of .846, also indicative of high reliability. The overall scale reliability was robust, with a composite Cronbach's alpha value of .882, confirming the questionnaire's high internal consistency for this study. This indicated that the questionnaire could be effectively employed for data collection in this study.

## Results and Discussion

This section presents the results, analysis, and interpretation of data gathered from the questionnaire answers and their corresponding discussions. The data were presented in tabular form in accordance with the specific questions posed in the problem statement.

**Table 2:** Mean Result of the Indicators for Frequency of Usage with Generative AI Technologies

Frequency of Usage	Frequency	Percent
Never	1	.7
Rarely	15	11.2
Sometimes	67	50.0
Often	40	29.9
Always	11	8.2
<b>Total</b>	<b>134</b>	<b>100</b>

Table 2 presents the distribution of graduate students' responses regarding their frequency of usage of generative AI technologies. Out of the total 134 respondents, the majority indicated that they use generative AI "Sometimes" (67 respondents or 50.0%), suggesting that AI tools are moderately integrated into their academic activities. This is followed by those who reported using generative AI "Often" (40 respondents or 29.9%), indicating a substantial portion of students who are regularly engaging with these technologies. A smaller percentage reported "Always" using generative AI tools (11 respondents or 8.2%), implying a consistent and possibly essential reliance on these technologies in their educational tasks. Meanwhile, 15 respondents (11.2%) stated they "Rarely" use generative AI, and only 1 respondent (0.7%) reported "Never" using such tools.

These results indicate that most graduate students have some level of engagement with generative AI, with a significant number incorporating it at least occasionally in their academic work. The capabilities of ChatGPT to provide adaptive and personalized learning experiences may play an important role in this positive association. ChatGPT can assist in a variety of tasks, including information search, answering questions related to specific subjects, and enhancing writing in a variety of languages (Fui-Hoon Nah et al., 2023). Hence, the students can receive customized and personalized responses from ChatGPT catering to their specific needs and set of problems, which helps them to overcome their learning challenges and attain their objectives (Faruk et al., 2023). The relatively low number of students who never or rarely use AI suggests a growing awareness and adoption of these tools within the graduate community. This pattern highlights the emerging role of generative AI in graduate education, particularly in tasks such as academic writing, research assistance, and idea generation. The findings also suggest the need for institutional support in terms of AI literacy training, ethical usage guidelines, and academic policy adjustments to better integrate these technologies into higher education settings.

**Table 3:** Mean Result of the Indicators for Knowledge of Generative AI Technologies

Indicators	Weighted Mean	Interpretation
1. I understand generative AI technologies like ChatGPT have limitations in their ability to handle complex tasks.	3.9851	High Understanding



Indicators	Weighted Mean	Interpretation
2. I understand generative AI technologies like ChatGPT can generate factually inaccurate output.	3.6269	High Understanding
3. I understand generative AI technologies like ChatGPT can generate output that is out of context or inappropriate.	3.5224	High Understanding
4. I understand generative AI technologies like ChatGPT can exhibit biases and unfairness in their output.	3.6269	High Understanding
5. I understand generative AI technologies like ChatGPT may rely too heavily on statistics, which can limit their usefulness in certain contexts.	3.6791	High Understanding
6. I understand generative AI technologies like ChatGPT have limited emotional intelligence and empathy, which can lead to output that is insensitive or inappropriate.	3.7313	High Understanding
Overall Mean	3.6953	High Understanding

Legend:

1.00–1.80 – Very Low Understanding

1.81-2.60 – Low Understanding

2.61-3.40 – Moderate Understanding

3.41-4.20 – High Understanding

4.21-5.00 – Very High Understanding

Table 3 presents the graduate students' level of knowledge and understanding regarding the limitations and characteristics of generative AI technologies such as ChatGPT. The overall mean score is 3.6953, which falls under the category of "High Understanding", indicating that graduate students generally demonstrate a strong awareness of the capabilities and limitations of generative AI tools.

These findings imply that graduate students possess a well-informed and cautious view of generative AI. Their understanding of both technical and ethical dimensions indicates that they are not only users but also critical evaluators of the technology. Students and educators should know about an AI's competencies and shortcomings in advance as part of their digital literacy (Cress & Kimmerle, 2023). This level of awareness is essential in promoting responsible and effective use of AI in academic settings. The results further support the integration of AI literacy initiatives in graduate education, particularly to deepen students' comprehension of the limitations and implications of using such tools in scholarly work. While education could benefit from intelligent technologies such as GenAI, it is important to create opportunities for students to interact with GenAI mindfully in authentic manners so that they can develop AI literacy while forging partnerships with AI for learning (Chen & Zhu, 2023).

**Table 4:** Mean Result of the Indicators for Willingness to Use Generative AI Technologies

Indicators	Weighted Mean	Interpretation
1. I understand generative AI technologies like ChatGPT have limitations in their ability to handle complex tasks.	3.8507	High Understanding
2. I can see myself using advanced AI technologies like ChatGPT to enhance my learning and academic experiences in the future.	3.7463	High Understanding



Indicators	Weighted Mean	Interpretation
3. Students must learn how to use generative AI technologies well for their careers.	3.7761	High Understanding
4. I believe generative AI technologies such as ChatGPT can improve my digital competence.	3.7239	High Understanding
5. I believe generative AI technologies such as ChatGPT can help me save time.	3.9627	High Understanding
6. I believe AI technologies such as ChatGPT can provide me with unique insights and perspectives that I may not have thought of myself.	3.8731	High Understanding
7. I think AI technologies such as ChatGPT can provide me with personalized and immediate feedback and suggestions for my assignments.	3.8507	High Understanding
8. I think AI technologies such as ChatGPT are a great tool, as it is available 24/7.	3.8731	High Understanding
9. I think AI technologies such as ChatGPT are a great tool for student support services due to anonymity	3.6866	High Understanding
Overall Mean	3.8159	High Understanding

Legend:

1.00–1.80 – Very Low Understanding

1.81-2.60 – Low Understanding

2.61-3.40 – Moderate Understanding

3.41-4.20 – High Understanding

4.21-5.00 – Very High Understanding

Table 4 presents the graduate students' willingness to use generative AI technologies, such as ChatGPT, in the context of education. The overall mean score is 3.8159, which falls under "High Understanding", indicating a strong willingness among graduate students to engage with generative AI technologies for academic and personal development purposes.

The data suggests that graduate students are generally willing and open to using generative AI tools such as ChatGPT for various academic purposes. The intention to use ChatGPT is associated with a higher perception of its potential benefits. Students with a higher level of awareness of AI benefits are more likely to use it (Al Murshidi et al., 2024). Their high scores across most indicators show that they recognize the practical benefits of AI in improving learning, gaining new perspectives, receiving feedback, and supporting digital competence. At the same time, their continued awareness of AI's limitations signals a responsible and thoughtful approach to integrating AI into their educational routines. This positive attitude implies a need for institutions to capitalize on this willingness by offering training, guidelines, and structured opportunities for ethical and effective use of AI tools in graduate education.

**Table 5** Mean Result of the Indicators for Concerns About Generative AI Technologies

Indicators	Weighted Mean	Interpretation
1. Using generative AI technologies such as ChatGPT to complete assignments undermines the value of university education.	3.3657	Moderate Understanding
2. Generative AI technologies such as ChatGPT will limit my opportunities to interact with others and socialize while completing coursework.	3.3806	Moderate Understanding
3. Generative AI technologies such as ChatGPT will hinder my development of generic or transferable	3.3881	Moderate Understanding





Indicators	Weighted Mean	Interpretation
skills such as teamwork, problem-solving, and leadership skills.		
4. I can become over-reliant on generative AI technologies.	3.2090	Moderate Understanding
Overall Mean	3.3359	Moderate Understanding

Legend:

1.00–1.80 – Very Low Understanding	2.61-3.40 – Moderate Understanding	4.21-5.00 – Very High Understanding
1.81-2.60 – Low Understanding	3.41-4.20 – High Understanding	

Table 5 presents graduate students' level of concern regarding the potential negative impacts of using generative AI technologies like ChatGPT in educational settings. The overall mean score is 3.3359, which falls in the "Moderate Understanding" range, indicating that students acknowledge concerns about AI usage, but these concerns are not strongly held.

The results show that graduate students have a moderate level of awareness and concern regarding the possible drawbacks of integrating generative AI technologies into their academic routines. While they are open to using AI tools, they also exhibit a measured caution, particularly in relation to AI's impact on interpersonal engagement and skill development. This balanced perspective reflects a healthy critical stance; students are not alarmist, but they are also not overly enthusiastic to the point of ignoring AI's limitations. These findings suggest the importance of institutional guidance and digital ethics education to help students navigate the benefits of AI while safeguarding the holistic value of higher education. Generative AI is making a major impact on our work and lives to the point that working and collaborating with generative AI will soon become a norm, if not already a norm. Education will need to be transformed to teach the necessary hard and soft skill sets to enable students to collaborate and partner with generative AI in educational and workplace settings (Fui-Hoon Nah et al., 2023). Continuous learning and adaptation are necessary to upskill, reskill, and retool the workforce as AI continues to advance and redefine our workplace and our lives. We are living in an interesting and challenging time where adapting to the era of generative AI is necessary and unavoidable.

**Table 6:** Significant Difference of the Means of the Variables

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig.
				Lower	Upper			
Knowledge - Willingness	.12685	.14838	.06058	-.28257	.02887	-2.094	5	.090
Knowledge - Concerns	.35447	.21165	.10582	.01769	.69126	3.350	3	.044
Willingness - Concerns	.43840	.07268	.03634	.32274	.55406	12.063	3	.001

Table 6 presents the results of paired sample t-tests examining whether there are significant differences between the mean scores of the three key variables: Knowledge, Willingness, and Concerns about generative AI technologies.

The difference in mean scores between Knowledge and Willingness is not statistically significant at the 0.05 level ( $p = .090$ ). This suggests that students' level of understanding of generative



AI aligns relatively closely with their willingness to use it. While they may slightly know more than they are willing to use it, the gap is not meaningful enough to be statistically conclusive.

There is a statistically significant difference between Knowledge and Concerns ( $p = .044$ ). The positive mean difference implies that students' knowledge of generative AI is significantly higher than their level of concern. This suggests that students who understand AI better may feel less threatened or worried by its implications, possibly because they are more aware of its limits and appropriate uses.

There is a highly significant difference between Willingness and Concerns ( $p = .001$ ). The positive mean difference shows that students are substantially more willing to use AI than they are concerned about its use. This suggests a positive outlook and openness toward generative AI technologies, with relatively low apprehension about their risks or drawbacks.

The findings in Table 6 reveal important dynamics in how graduate students view generative AI: their knowledge and willingness to use AI are closely aligned; their knowledge exceeds their concerns, indicating that understanding reduces fear or hesitation; and their willingness to use AI greatly outweighs their concerns, showing that students are eager to adopt the technology despite being moderately aware of its limitations. These results reinforce the importance of continued AI education and ethical training, as deeper knowledge not only supports responsible use but may also help mitigate concerns and resistance. Institutions can use this insight to further guide curriculum development, faculty training, and policy creation surrounding AI integration in graduate programs.

**Table 7** Correlation between the Frequency of Usage and the Level of Knowledge of Generative AI Technologies

	<b>r value</b>	<b>Interpretation</b>	<b>p-value</b>	<b>Interpretation</b>
Usage and Knowledge	-.470	Moderate negative correlation	.347	No significant relationship
Scale: $\pm 0.01$ - $\pm 0.19$ - Negligible correlation $\pm 0.60$ - $\pm 0.79$ - Moderately high correlation $\pm 0.20$ - $\pm 0.39$ - Low correlation $\pm 0.80$ - $\pm 1.00$ - High correlation $\pm 0.40$ - $\pm 0.59$ - Moderate correlation				

Table 7 presents the results of a correlation analysis between students' frequency of usage of generative AI technologies and their level of knowledge about such technologies. The  $r$ -value of  $-0.470$  suggests a moderate negative correlation between frequency of usage and level of knowledge. This means that, as the frequency of using generative AI increases, the level of knowledge tends to slightly decrease, and vice versa. However, the  $p$ -value of  $0.347$  indicates that this correlation is not statistically significant at the conventional  $0.05$  level. In other words, the observed relationship may have occurred by chance, and no reliable or generalizable conclusion can be drawn about the connection between how often students use generative AI and how much they understand it.

Despite a moderate negative trend, the lack of significance suggests that usage alone does not predict knowledge among graduate students. Some students may use generative AI frequently without deeply understanding how it works, its limitations, or ethical concerns. This finding highlights a possible gap between practical use and conceptual understanding, suggesting the need for educational interventions that go beyond encouraging AI tool usage to also emphasize digital literacy and critical awareness.

While there appears to be a moderate inverse relationship between usage and knowledge of generative AI among graduate students, this relationship is not statistically significant. The results indicate that increased usage does not necessarily equate to deeper understanding, underscoring the need for more structured and informed approaches to AI education in graduate programs.



**Table 8** Correlation between the Frequency of Usage and the Level of Willingness to Use Generative AI Technologies

	<b>r value</b>	<b>Interpretation</b>	<b>p-value</b>	<b>Interpretation</b>
Usage and Willingness to Use	-.170	Negligible negative correlation	.661	No significant relationship
Scale: $\pm 0.01$ - $\pm 0.19$ - Negligible correlation $\pm 0.60$ - $\pm 0.79$ - Moderately high correlation $\pm 0.20$ - $\pm 0.39$ - Low correlation $\pm 0.80$ - $\pm 1.00$ - High correlation $\pm 0.40$ - $\pm 0.59$ - Moderate correlation				

Table 8 presents the results of a correlation analysis between graduate students' frequency of usage of generative AI technologies and their willingness to use such technologies in the future or in academic contexts. The r-value of  $-0.170$  indicates a negligible negative correlation, which suggests that there is virtually no meaningful relationship between how frequently students use generative AI and their willingness to use it further. The slightly negative direction implies that those who use it more often may be slightly less willing to use it in the future, but this relationship is extremely weak. Moreover, the p-value of  $0.661$  is far above the standard significance threshold of  $0.05$ , confirming that this correlation is not statistically significant. Therefore, the observed relationship could be due to random variation and cannot be considered meaningful or reliable.

Students' willingness to use generative AI is not influenced by how often they currently use it. This could indicate that some students may be curious or open to using AI even if they haven't used it much yet, while frequent users may have mixed experiences that don't necessarily increase their willingness. The result suggests that other factors, such as perceived usefulness, ethical concerns, guidance from faculty, or confidence in using the tools, may have a stronger influence on willingness than usage frequency alone. From an educational standpoint, this reinforces the need for structured orientation and informed engagement, where students are not just encouraged to use AI tools but also helped to understand their benefits, limitations, and ethical implications.

The analysis of Table 8 reveals that there is no significant relationship between the frequency of usage and willingness to use generative AI technologies among graduate students. The negligible negative correlation suggests that using AI more frequently does not necessarily increase or decrease students' willingness to adopt it further. This underscores the importance of strategic education and support rather than relying solely on exposure to foster positive engagement with AI in academic settings.

**Table 9:** Correlation between the Frequency of Usage and the Level of Concerns about Generative AI Technologies

	<b>r value</b>	<b>Interpretation</b>	<b>p-value</b>	<b>Interpretation</b>
Usage and Concerns	.632	Moderately high positive correlation	.368	No significant relationship
Scale: $\pm 0.01$ - $\pm 0.19$ - Negligible correlation $\pm 0.60$ - $\pm 0.79$ - Moderately high correlation $\pm 0.20$ - $\pm 0.39$ - Low correlation $\pm 0.80$ - $\pm 1.00$ - High correlation $\pm 0.40$ - $\pm 0.59$ - Moderate correlation				

Table 9 presents the results of a correlation analysis between graduate students' frequency of usage of generative AI technologies and their level of concern about these technologies' implications and effects on education. The r-value of  $0.632$  indicates a moderately high positive correlation between the frequency of AI usage and concerns about its impact. This suggests that, as students use generative AI more frequently, their level of concern tends to increase. This could be because frequent use exposes students to potential issues such as overreliance, ethical dilemmas, limitations of the tool, or worries about academic integrity and personal skill development. However, the p-value of  $0.368$  indicates that this observed relationship is not statistically significant. In practical terms, while there is a visible trend suggesting a connection, it cannot be confidently generalized beyond the sample used in this study. The correlation may have occurred by chance or may require a larger sample to detect a meaningful effect.



The positive trend, though not statistically significant, hints at a growing awareness of risks and limitations among students who use AI tools more frequently. With more exposure, students might become more critical or cautious about how AI affects learning and assessment. This underscores the importance of integrating critical AI literacy in the curriculum; students must not only learn how to use generative AI but also be guided on how to use it ethically and responsibly. Educational institutions may consider offering structured support and reflective learning opportunities so that students can safely explore generative AI while being mindful of its academic and ethical implications.

Although Table 9 shows a moderately high positive correlation between frequency of AI usage and level of concern, the relationship is not statistically significant ( $p = 0.368$ ). This means that while students who frequently use generative AI appear to have higher levels of concern, the data does not provide sufficient evidence to confirm a meaningful or consistent association. Still, the emerging pattern suggests that greater exposure may promote a more critical and cautious attitude, warranting further study with a larger sample and more robust methods.

The findings of the study reveal that graduate students generally exhibit a moderate understanding of generative AI technologies, accompanied by a high willingness to use these tools in education, despite also showing moderate levels of concern. Significant differences were observed between knowledge, willingness, and concern, with students being more willing to use AI than they were concerned about its implications. However, correlation results suggest that the frequency of AI usage is not significantly linked to their knowledge or willingness to use such tools. Interestingly, a moderately high (yet statistically insignificant) correlation was found between frequency of usage and level of concern, indicating that students who use AI more often may become more aware of its potential drawbacks or risks.

These results imply a growing openness and adaptability among graduate students toward integrating AI in academic settings, even as they begin to recognize its limitations. However, the absence of strong, significant correlations suggests that mere exposure to AI tools is not enough to deepen understanding or inform responsible usage. This highlights the need for intentional educational strategies, including structured AI literacy programs, ethical guidelines, and critical discussions in graduate curricula. Doing so can ensure that students become not only competent users of generative AI but also critical thinkers who can navigate its complexities in both academic and professional contexts.

## Conclusion

This study explored the attitudes of graduate students toward generative AI technologies in education, focusing on their level of knowledge, willingness to use, and concerns regarding such tools. The results revealed that students have a moderate understanding of generative AI, express a high willingness to use it in their academic pursuits, and possess moderate concerns about its implications. Significant differences were noted among these dimensions, suggesting that while students are open and inclined to adopt generative AI tools, they are also becoming increasingly aware of the ethical and academic challenges associated with their use.

However, correlation analyses showed no significant relationship between the frequency of usage and students' knowledge, willingness, or concerns, indicating that regular use alone does not necessarily translate into informed or responsible engagement with the technology. These findings underscore the importance of embedding AI literacy into graduate education to promote thoughtful and ethical use of generative AI. As educational institutions navigate the AI age, there is a pressing need to strike a balance between embracing technological innovation and fostering critical awareness, ensuring that students are equipped not only with technical competencies but also with a deep understanding of the broader educational, ethical, and social implications of AI.

## Recommendations

Based on the findings and conclusions of this study, the following recommendations are hereby proposed:

1. **Develop Clear Guidelines and Ethical Frameworks.** The institution should establish clear policies and ethical guidelines on the acceptable use of generative AI technologies in academic settings. These guiding principles on generative AI should address issues such as plagiarism, overreliance, and appropriate citation practices to uphold academic integrity.





2. Integrate AI Literacy in Graduate Curricula. The institution should develop and integrate structured AI literacy programs. These should include both technical and ethical dimensions of generative AI to ensure students not only know how to use these tools but also understand their limitations, risks, and implications in academic work.

3. Conduct Faculty-Led Workshops and Trainings. Faculty members should be equipped and encouraged to facilitate workshops and seminars that promote responsible and informed use of generative AI. These initiatives can guide students in navigating academic integrity, critical thinking, and the development of transferable skills in the context of AI-supported learning.

4. Encourage Reflective and Balanced Use of AI Tools. Students should be encouraged to engage in reflective practices that evaluate both the benefits and the potential drawbacks of using generative AI. Academic tasks that involve critical analysis of AI-generated content can help deepen understanding and promote a more mindful use of technology.

5. Further Research on AI in Local Educational Contexts. It is recommended that future research be conducted involving a larger and more diverse population across different colleges or universities. Additional studies may also explore faculty attitudes toward AI, the impact of AI use on academic performance, and longitudinal changes in student perceptions as technology continues to evolve.

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