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The Impact of Generative AI on Research Attitudes and Motivation Among Graduate Teacher Education Students in a Philippine State University

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Abstract. This research examined the perspectives of graduate teacher education (GTE) students on Generative Artificial Intelligence (GenAI), their motivation to use GenAI, and their research attitudes. The immediate integration of GenAI tools in higher education has transformed academic practices, yet its impact on research attitudes remains underexplored. Generative Artificial Intelligence is known for enhancing efficiency and supporting research tasks but concerns trust and academic integrity persist. In the current study, 307 GTE students enrolled at Cebu Technological University Main campus in Cebu City, Philippines for the school year 2025–2026 participated. The respondents were selected using convenience sampling with random selection within a cohort and completed a three-part adopted survey questionnaire. The data gathered were treated using descriptive statistics and Pearson's *r*. The results revealed that the majority of the GTE students used GenAI occasionally while they commonly used ChatGPT (86.32%). The GTE students have a positive perception toward GenAI ($WM = 36.38$, $SD = 0.81$) and are highly motivated to use it ($WM = 3.69$, $SD = 0.78$). In addition, the GTE students have positive attitudes toward research ($WM = 3.87$, $SD = 0.76$). Moreover, correlational analysis revealed a strong positive correlation between the perception of GenAI and the motivation for its use ($r = 0.726$, $p < 0.001$). However, weaker significant relationships were demonstrated between students' perception ($r = 0.406$, $p < 0.001$) and students' motivation ($r = 0.339$, $p < 0.001$) to use GenAI and their attitudes toward research. These findings suggest that GenAI positively influences the attitudes of GTE students toward research but the cause may vary. Hence, this underscores the need for higher education institutions to facilitate policy development and curriculum design to promote the responsible, ethical, and effective use of artificial intelligence tools in GTE research.

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1. Introduction

The rapid advancements in technology, particularly in artificial intelligence (AI), have increasingly been given much attention in the field of research and its application in higher education (Almassaad et al., 2024; Lee & Song, 2024) where it has been integrated into educational settings to improve the quality of higher education (Haleem et al., 2022; Okoye et al., 2023). In particular, the adoption of Generative Artificial Intelligence (GenAI) technology in higher education transforms the essential teaching and learning approaches in the classroom (O'Dea, 2024), altering the traditional pedagogical practices and dynamics of teacher and student relationships (Pahi et al., 2024). One of the main uses of GenAI in higher education is to improve students' learning experience. This is because of its capability of performing tasks based on the prompts given by the user and offering instant responses while allowing students to produce original outputs (Purnama et al., 2024; Saihi et al., 2024).

The integration of GenAI in higher education provides potential opportunities for both students and institutions. Learning experiences and educational outcomes are enhanced, giving opportunities to students access information immediately (Kamalov et al., 2023). Moreover, it eliminates the delays that are associated with traditional support systems (Saihi et al., 2024). Furthermore, GenAI can also provide various services to university students in areas such as multidimensional research and pedagogical support (George, 2023). With the advancement of AI, there is a need to understand the perceptions and attitudes of teacher education students toward the use of GenAI in research.

The emergence of this technology provides benefits for graduate students. Students enrolled in research-related subjects are able to do academic tasks easily upon using such technology, since most graduate students struggle in their research writing courses (Ali & Zayid, 2022). Moreover, using GenAI effectively can foster positive attitudes in graduate students toward this technology and research (Al-Zahrani, 2024; Wang et al., 2025). In addition, GenAI can lessen the burden for students developing research (George, 2023), and positive experiences in the research activities of the graduate students can shift their feelings toward research (Al-Zahrani, 2024). However, despite the benefits of GenAI, there are issues that can compromise the students' writing proficiency and academic integrity, thus affecting their professional development (Barrett & Pack, 2023). Furthermore, the concerns regarding the ethical use of GenAI make it essential to examine how universities adopt the technology as well.

It has been observed in one of the state universities in Cebu City, Philippines that some graduate students use GenAI to produce the outputs required by their professors (Villaceran & Himang, 2025). Specifically, this has been a prevalent practice among graduate teacher education (GTE) students who are engaged in

master's degree programs in the said university (Gantalao et al., 2025; Jesus et al., 2025). Allowing this practice to prosper in the university would be detrimental to the graduate program, as it would compromise the quality of education and the academic integrity of the institution (Symeou et al., 2025). However, there is a need for the university to adapt to the changes in the educational landscape, specifically regarding the use of AI technology in the classroom. Moreover, no policy has been crafted that is relevant to the use of GenAI in the classroom of this university, which makes the situation more disturbing.

Hence, it was important to assess the perceptions and motivation of GTE students toward GenAI to identify factors that encourage its use in their learning experiences (Almassaad et al., 2024). Moreover, this study examined the research attitudes of the GTE students and explored if the existence of GenAI influenced these attitudes. Investigating these areas is crucial for the successful integration of GenAI in higher education through research-driven institutional policies and guidelines. This study aimed to examine the relationship between the GTE students' perceptions and motivation and their attitudes toward research. Specifically, it sought to answer the following objectives:

1. To determine the extent of GTE students' use of GenAI
2. To identify the commonly used GenAI by the GTE students
3. To examine the GTE students' perspectives on GenAI in terms of their knowledge, willingness to use, trust, acceptance, and concerns about GenAI technologies
4. To determine the GTE students' motivational factors to use GenAI in terms of individual, social, and technical factors
5. To assess the GTE students' attitudes toward research
6. To test the relationship between the GTE students' perspectives and motivation and their attitudes toward research

2. Literature Review

The application of GenAI has been prominent worldwide since its development, and it has various uses that can assist with academic tasks. Generative Artificial Intelligence is the technology that generates human-like ideas in response to complex and varied prompts and the technology that influences deep learning (Lim et al., 2023). The characteristics of innovative GenAI include compatibility, trialability, and observability, and the technology analyzes communication channels and roles and responsibilities outlined in university policies and guidelines (Jin et al., 2025). Perifanou and Economides (2025) demonstrated that ChatGPT, Google Gemini, and MS Copilot are the most-used types of GenAI in postgraduate studies and are appreciated for their quick responses, natural communication style, broad subject coverage, and ability to simplify complex topics.

Furthermore, Kim, Yu et al. (2025) reveal that GenAI is a valuable tool that enhances academic works such as planning, ideation, revision, and drafting. This is further emphasized by Kizilcec et al. (2024) who state that GenAI generates eloquent essays, writes codes, and aces standardized tests. The study

of Picciano (2024) evaluates GTE students' use of GenAI for its ability to organize thoughts, generate ideas, and overcome writer's block. It was found that GenAI is used by students studying higher and even postgraduate education due to its efficiency and ability to aid.

The perceptions, benefits, and challenges regarding the use of GenAI in various aspects of education have been investigated, focusing on the knowledge of this type of AI and the willingness, concerns, and trust relating to its acceptance (Chan & Hu, 2023). Knowledge involves knowing the features of GenAI in regard to its limitations, accuracy, context, and biases and being aware of the potential risks that can arise from the lack of emotional intelligence and empathy (Chan & Hu, 2023). The study of Hughes et al. (2025) found that the rapid pace of GenAI development necessitates strategic approaches to policy and practice, and the interdependencies between key challenges require comprehensive and holistic strategies. In addition, the positive perceptions of GenAI are being highlighted as the students' willingness to use such technology (Chan & Hu, 2023). Humble (2024) emphasizes that GenAI can solve many assignments and produce learning materials and opportunities such as using AI as a teaching assistant, enhancing motivation, and providing personalized learning.

Despite the positive perceptions, there are concerns with using technologies that may undermine the value of education and limit the opportunities of social interactions, resulting in overreliance of such technologies (Chan & Hu, 2023). The study of Jin et al. (2025) reveals a general awareness of AI tools but limited experiential engagement, highlighting the importance of developing institutional policies to ensure responsible use and uniform application of GenAI while expressing concerns about its inaccuracy, potential overreliance, and issues related to internet accessibility and economic constraints. Furthermore, the elevation and implementation of GenAI technologies should prioritize transparency, accuracy, and privacy, thus fostering trust and lessening potential risks (Chan & Hu, 2023). Lee et al. (2024) recommend an investigation relating to trust in the use of GenAI by exploring the strategies for mitigating biases in AI-generated content, ensuring transparency in AI recommendations, and examining the role of interdisciplinary collaborations in enhancing the effectiveness of AI tools in education.

Therefore, interest in using GenAI is key to its acceptance (Chan & Hu, 2023). Acceptance of GenAI in student learning and academic achievement should identify strategies for mitigating academic integrity concerns and enhancing the ethical use of GenAI and examine the role of continuous professional development in fostering positive motivation for GenAI (Khlaif et al., 2024). Students not only have positive perceptions regarding academic benefits, accessibility, and attitudes but also have concerns about reliance on technology, academic integrity, and privacy risks (Baidoo-Anu et al., 2024).

The capacity of students to use GenAI depends on the motivational factors that influence their perceptions and attitudes toward the technology. Kang et al. (2024) emphasize that there are three factors that motivate students to use

GenAI, namely individual factors, social factors, and technical factors. Furthermore, motivation is a key factor in shaping both behavioral intention and actual use behavior. Individual motivation, trust, and acceptance attitude toward the service of GenAI is influenced by the motivational factor of the individual (Kang et al., 2024). Gupta (2024) emphasizes the key factors that promote individual use and acceptance of GenAI as perceived usefulness, performance expectancy, attitudes, trust, and effort expectancy. Moreover, social factors are the belief of the user upon accessing GenAI of improving their status within the social system of which they are a part (Kang et al., 2024).

Orchard and Tasiemski (2023) conclude with the importance of addressing social influence and hedonic motivation in AI adoption and understanding the psychological pathways leading to AI acceptance. Kang et al. (2024) subsequently defined the technical factor as a variable that influences the motivation to access GenAI for its technical convenience. According to Wang et al. (2025), GenAI is employed because it enhances productivity, supports academic work, is adaptable, and provides tailored responses that align closely with educational needs. Thus, the motivations and perceptions of students toward GenAI together with its factors influence their attitudes toward their academic outcomes.

Students in higher education, specifically in GTE, are required to undertake academic research writing and various attitudes toward the subject have been demonstrated. Thiem et al. (2023) state that research is a process with the purpose of gaining knowledge and comprehending specific contexts. Research usefulness, anxiety, and positive research predispositions are components of students' attitudes toward research (Papanastasiou, 2014). While most of the individuals acknowledged the usefulness of research, this may not be an indication that they personally like and identify with research. Rather, it may be that research is a mandatory requirement for completion of their graduate studies (Kakupa & Xue, 2019). Zhang et al. (2024) assert that research anxiety negatively affects the perception of research usefulness and reduces students' self-belief.

Students commonly identified experiencing failure in research, a lack of preparation or understanding, and the stress of needing to balance their time in research with other personal and/or academic commitments as factors that can increase their research anxiety (Bjelobaba et al., 2025). In addition, Kasilingam (2020) stated that positive emotions toward research foster favorable attitudes, and students with positive emotions are more likely to engage with research in their academic and professional life. Positive perceptions of AI can increase motivation and positive attitudes toward research (Chan & Hu, 2023). Conversely, concerns about integrity and critical analysis skills can hinder the responsible use of AI.

In conclusion, students' knowledge, willingness, concerns, trust, and acceptance of GenAI provide a perspective that is prone to the education spectrum, particularly in research. Despite existing studies exploring GenAI's benefits and

challenges in higher education, limited research examines its influence on GTE students' research attitudes, particularly in developing countries. Furthermore, GenAI is a valuable tool in research for enhancing various aspects such as ideation, planning, drafting, and revision (Kim, Klopfer et al., 2025). Although there are many studies on the use of AI in education, research on student perceptions and attitudes in the Philippines is still limited. Therefore, this study contributes to filling that void. The motivational factors influence students to use GenAI, which in turn, affects their attitude toward research. The existence of GenAI technology changes students' views and their predisposition toward applying for academic research subjects.

3. Materials and Methods

3.1 Research Design

This study employed a descriptive correlational research design to describe and examine the relationship between the variables under study. Descriptive design involves gathering data to obtain necessary facts and information relative to identified variables and seeks to give a precise and systematic depiction of a population, situation, or phenomenon (Agarwal et al., 2024). The descriptive component was implemented by collecting quantitative data on the perspectives of GTE students of GenAI, their motivational factors for using GenAI, and their attitudes toward research. These variables were measured using validated survey instruments and summarized through frequency, percentage, weighted mean, and standard deviation to provide a clear profile of the respondents.

In addition, a correlational research design seeks to test the relationship between two or more variables without the intent of controlling any of the variables (Krause, 2018). The correlational component was operationalized by applying Pearson's r correlation analysis to test the strength and direction of the relationships among the three constructs. This approach was chosen because the study aimed to determine whether variations in students' perceptions and motivation for GenAI are associated with differences in their research attitudes without manipulating any variable. Additionally, the respondents in this study were selected through convenience sampling with random selection within a cohort. An adopted survey questionnaire was completed to collect the data to test the following null hypotheses:

H₀₁: There is no significant relationship between the GTE students' perspectives about GenAI and their attitudes toward research.

H₀₂: There is no significant relationship between the GTE students' perspectives about GenAI and their motivation to use GenAI.

H₀₃: There is no significant relationship between the GTE students' motivation to use GenAI and their attitudes toward research.

3.2 Respondents

Table 1 presents the distribution of the respondents according to specified categories. This table provides an overview of how participants are grouped, allowing for a better understanding of the demographic profile of the sample. **Table 1: Distribution of the respondents**

	Profile	<i>f</i>	%
Age	21-30	192	62.54
	31-40	73	23.78
	41-50	36	11.73
	> 50	6	1.95
	TOTAL	307	100.00
Sex	Female	262	85.34
	Male	45	14.66
	TOTAL	307	100.00
Field of Specialization	Administration and Supervision	12	3.91
	Early Childhood Education	95	30.94
	English	13	4.23
	Filipino	12	3.91
	Guidance and Counseling	1	0.33
	Information and Communication Technology	6	1.95
	Mathematics	64	20.85
	Social Studies	45	14.66
	Special Education	26	8.47
	Vocational Education	21	6.84
	Others	12	3.91
	TOTAL	307	100.00
	Number of Years of Teaching	<1	45
1-5		128	41.69
6-10		55	17.92
11-15		7	2.28
16-20		6	1.95
>20		10	3.26
None		56	18.24
TOTAL		307	100.00

The respondents of this study comprised GTE students who were enrolled in the Research Methodology course at a state university in Cebu City, Philippines during the academic year 2025–2026. Convenience sampling with random selection within a cohort was used to select the respondents for the study, given that they come from a single university. The respondents who were included are officially enrolled in the Research Methodology course, are actively pursuing a master's degree in teacher education, and provided informed consent to participate. This population was selected because students enrolled in Research Methodology are at a critical stage of developing research skills and attitudes, making them the most relevant group for examining the influence of GenAI on research attitudes. The limit of the sample to one academic year ensured consistency in exposure to institutional policies and technological trends.

Convenience sampling with random selection within a cohort was applied to ensure equal chances of participation and to make certain that the sample was unbiased and representative of the population under investigation. More than half of the total respondents (62.54%) fell into the age range of 21–30 years. In addition, 23.78% and 11.73% of students were aged 31–40 years and 41–50 years, respectively. Although a large portion of the respondents were below 50 years old, there were six students who were older than 50 years. Generally, most of the GTE students were fresh graduates with a bachelor's degree, and the students older than 50 years were surrounded with younger fellow students.

Notably, the respondents' fields of specialization were diverse. There were 30.94% of the respondents were studying Early Childhood Education, followed by the fields of Mathematics and Social Studies, with 20.85% and 14.66%, respectively. It is also noteworthy that most respondents had one to five years of teaching practice, followed by the respondents with no experience of teaching in the field. While the sample represented a single cohort, it reflected the diversity of specializations within the GTE program, thus providing a reasonable representation of GTE students in the university context.

3.3 Data Collection Tools

This study assessed the variables by making use of a three-part adopted survey questionnaire. The questionnaire developed by Chan and Hu (2023) was used to assess the GTE students' knowledge, willingness to use GenAI, and concerns about GenAI technologies. The initial questionnaire was developed by drawing upon similar studies and existing questionnaires on teachers' and students' perceptions of educational technologies in higher education. To ensure the relevance and clarity of the questionnaire items, pilot studies were conducted prior to formal data collection.

Thereafter, the questionnaire was modified based on feedback from the pilot study. The final version of the instrument comprised a pool of 26 items with questions such as "I understand generative AI technologies like ChatGPT have limitations in handling complex tasks"; "I envision integrating generative AI technologies like ChatGPT into my learning practices in the future"; and "Using generative AI technologies such as ChatGPT to complete assignments undermines the value of university education."

Moreover, the questionnaire developed by Kang et al. (2024) was used to assess the GTE students' motivational factors to use, trust, and accept GenAI. The instrument was adopted from prior studies and structured into three parts with a total of 29 items and questions such as "I do not have much trouble using generative AI services"; "Generative AI services are easy to use"; and "Generative AI services are generally trustworthy". Prior to data collection, the instrument underwent content validation by three experts in educational technology and research methodology to ensure relevance and clarity. Construct validity and reliability were confirmed through exploratory and confirmatory factor analyses using SPSS 27.0 and AMOS 27.0. The factor loadings of the questions were from 0.725 to 0.912, the composite reliability ranged from 0.788

to 0.901, the average variance extracted (AVE) value ranged from 0.555 to 0.727, and Cronbach's alpha values were from 0.748 to 0.888. The Revised-Attitudes Toward Research (R-ATR) Scale by Papanastasiou (2014) assessed the attitudes of the GTE students toward research.

The R-ATR consists of 13 items grouped into three subscales: Research Usefulness consists of 4 items such as "Research is useful for my career"; Research Anxiety consists of 5 items with indicators such as "Research courses make me anxious"; and Positive Research Predisposition consists of 4 items such as "I enjoy my research course(s)". Confirmatory Factor Analysis confirmed a three-factor model with strong fit indices (CFI = 0.97, TLI = 0.95, RMSEA = 0.065). Convergent validity was supported by factor loadings above 0.70 and AVE values above 0.50. The results of the Cronbach's coefficient alpha of these analyses show that the questionnaire had high internal reliability for the following constructs: Research Usefulness ($\alpha = 0.90$), Positive Research Predisposition ($\alpha = 0.92$), and Research Anxiety ($\alpha = 0.86$). All questionnaires used a 5-point Likert scale, namely 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree, and 1 = Strongly Disagree.

3.4 Data Collection Process

The researcher ensured ethical conduct in the gathering of the data from the respondents. Permission and approval from the University Research Office were granted for this study. After the approval, the researcher secured informed consent from the respondents regarding their willingness to participate in the data gathering process. After receiving the respondents' informed consent, they were provided with the link to access the Google Form, enabling them to complete the questionnaire online. The respondents were given ample time (10 minutes) to answer the questions, with their availability being a consideration. The respondents were also given the choice to withdraw at any point in the process if they felt uncomfortable. All collected data were handled while strictly abiding by the Data Privacy Act to protect the respondents. In addition, the data underwent data cleaning, ensuring repeated and patterned answers were removed.

3.5 Data Analysis

The data gathered were compiled, sorted, organized, and tabulated. The data were subjected to statistical treatment for the purpose of answering the questions presented in the study. Frequency distribution and percentages were used to interpret and sort the answers of the respondents into defined categories. Weighted means were used to describe the respondents' level of perception about GenAI, their motivation to use GenAI, and their attitudes toward research. Standard deviation was used to measure the variability of the responses to the statements describing the variables. Pearson's r was used to test the significance of the relationship between the identified variables.

4. Results

The results of the gathered data such as the extent of the respondents' usage of GenAI, the commonly used types of GenAI, their perspectives about GenAI, the

motivational factors to use GenAI, their research attitudes, and their relationships are presented here.

Table 2: Extent of respondents' usage of GenAI

Extent of Usage	<i>f</i>	%
Always	18	5.86
Often	87	28.34
Sometimes	175	57.00
Rarely	27	8.79
TOTAL	307	100.00

Table 2 indicates that in terms of GenAI use, the majority of respondents (with a frequency of 175) reported using AI sometimes. In addition, approximately 28.34% of the total sample stated that they often use GenAI. It is also noteworthy that despite the advancement of technology and digital tools, only 5.86% of the recorded responses indicated consistent use of GenAI, while 8.79% of the respondents used GenAI on rare occasions.

Table 3: Commonly used GenAI by the GTE students

GenAI	<i>f</i>	%
ChatGPT	265	86.32
Quillbot	122	39.74
Grammarly	113	36.81
Others	74	24.10
Paraphraser IO	23	7.49
Bard	21	6.84
Gemini	20	6.51
Perplexity AI	17	5.54

The commonly used types of GenAI by the GTE students were determined using the frequencies and percentages outlined in Table 3. Of the total 307 respondents, more than half ($n = 265$) identified ChatGPT as the GenAI that they generally used. This was followed by Quillbot and Grammarly, which were used by 39.74% and 36.81% of the respondents, respectively. Conversely, according to the students' responses, Perplexity AI was recorded as the AI with the lowest use rate, only being used by 5.54% of the respondents. Some of the respondents (24.10%) admitted to using types of GenAI other than the above-mentioned AI tools.

Table 4: Summary of GTE students' perspectives of GenAI

Components	WM	SD	Verbal Description
Knowledge	3.98	0.83	Positive
Willingness to Use	3.87	0.80	Positive
Trust	3.34	0.76	Neutral
Acceptance	3.74	0.74	Positive
Concerns about GenAI Technologies	3.45	0.89	Positive
Grand Mean	3.68		Positive
Grand Standard Deviation		0.81	

Note. 4.21–5.00 = Strongly Positive; 3.41–4.20 = Positive; 2.61–3.40 = Neutral; 1.81–2.60 = Negative; 1.00–1.81 = Strongly Negative

Table 4 clearly indicates that generally, GTE students had positive perceptions of using GenAI ($WM = 3.68$, $SD = 0.81$). Moreover, according to their responses, the GTE students had positive perspectives on the use of GenAI in terms of knowledge ($WM = 3.98$, $SD = 0.83$) and their willingness to use GenAI ($WM = 3.87$, $SD = 0.80$). The respondents also exhibited positive perceptions of GenAI in terms of its accepted integration into the learning process ($WM = 3.74$, $SD = 0.74$). Additionally, it is important to note that concerns about GenAI technologies fell into borderline positive ($WM = 3.45$, $SD = 0.89$). However, the GTE students showed a neutral view regarding their trust of GenAI ($WM = 3.34$, $SD = 0.76$).

Table 5: Summary of GTE students' motivational factors to use GenAI

Components	WM	SD	Verbal Description
Individual Factors	3.65	0.78	High
Social Factors	3.54	0.84	High
Technical Factors	3.87	0.70	High
Grand Mean	3.69		High
Grand Standard Deviation		0.78	

Note. 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Neutral; 1.81–2.60 = Disagree; 1.00–1.81 = Strongly Disagree

The GTE students' use of GenAI, as gleaned from Table 5, is influenced by different motivational factors. The results show that GTE students are highly motivated regarding their use of GenAI in terms of individual ($WM = 3.65$, $SD = 0.78$) and social factors ($WM = 3.54$, $SD = 0.84$). Furthermore, it is also reflected with the highest weighted mean of 3.87 that the respondents are highly motivated to use GenAI due to technical factors.

Table 6: Summary of GTE students' attitudes toward research

Components	WM	SD	Verbal Description
Research Usefulness	4.41	0.65	Very Positive
*Anxiety	3.69	0.88	Positive
Positive Research Predisposition	3.50	0.75	Positive
Grand Mean	3.87		Positive
Grand Standard Deviation		0.76	

Note. 4.21–5.00 = Strongly Positive; 3.41–4.20 = Positive; 2.61–3.40 = Neutral; 1.81–2.60 = Negative; 1.00–1.81 = Strongly Negative

*reverse scoring

The data summarized in Table 6 shows the GTE students' attitudes toward research. The students had very positive attitudes toward the usefulness of research ($WM = 4.41$, $SD = 0.65$). Aligning with this, the results also reflect that the GTE students had favorable interests and were willing to engage in research ($WM = 3.50$, $SD = 0.75$). Moreover, the perceived usefulness and positive outlook of the GTE students contributed to less anxiety relating to research, resulting in their positive research attitudes ($WM = 3.69$, $SD = 0.88$). In general, the GTE students demonstrated a positive attitude toward research ($WM = 3.87$, $SD = 0.76$). To understand further how these variables interact, the following analysis examined the statistical relationships between students' perceptions of GenAI, their motivation to use GenAI, and their attitudes toward research.

Table 7: Correlational analysis

Variables	1	2	3
1 Perspectives of GenAI	1		
2 Motivational Factors to use GenAI	0.726***	1	
3 Attitude Toward Research	0.406***	0.339***	1

***significant at $p < 0.001$

Table 7 provides evidence of the statistical relationship between the variables using Pearson's r correlation, and the results reveal that all variables are significantly correlated. For instance, it is shown that there is a strong positive correlation between the students' perspectives of GenAI and their motivational factors ($r = 0.726$, $p < 0.001$), indicating that perceptions of GenAI greatly influence attitudes toward research. In addition, a significant weak correlation exists between the students' perspectives of GenAI and their attitude toward research ($r = 0.406$, $p < 0.001$). Similarly, there is a weak positive correlation between the students' motivational factors and their attitude toward research ($r = 0.339$, $p < 0.001$). The results indicate that the null hypothesis was rejected, confirming that the variables are significantly correlated.

5. Discussion

The advancement of technology enables the development of GenAI. It presents opportunities for teachers and students to enhance the teaching and learning process (Ivanov et al., 2024). The extent of GenAI usage among GTE students indicates that they actively use the technology. However, as reflected, a large proportion of the respondents revealed that they use GenAI occasionally.

Occasional use could indicate reliance for specific tasks such as idea generation or language refinement rather than continuous engagement. This aligns with the findings of Picciano (2024) and Kim, Yu et al. (2025) that students often use AI tools for targeted academic purposes rather than comprehensive research processes. This implies that they are reluctant to use AI all the time, possibly due to some concerns about security, accuracy, privacy, academic integrity, and other ethical issues (Baidoo-Anu & Ansah, 2023).

Notably, this study showed that none of the respondents were unaware of the existence of GenAI and all of them used AI-driven tools. This contradicts the findings of Madden et al. (2025), which indicated that their participants were not aware of GenAI and did not have any idea about the potential of AI tools; however, the data were drawn from disparate environments, which may have caused the difference in the findings. In the field of education, the existence of GenAI is prevalent and made an impact to the core of curriculum and used as an aid in academic tasks.

Generative Artificial Intelligence plays a critical role in the higher education context, which includes academic paperwork and self-learning (Noviyanti et al., 2025). Among the various tools, ChatGPT is widely used. Students prefer ChatGPT because of the features it provides, including assistance in research, interactive learning, and language support (Monib et al., 2025). Furthermore, GenAI plays a role in the research process, as it guides the users by giving feedback to enhance writing and by facilitating tasks relating to research (Rice et al., 2024). The dominant use of GenAI tools influences the academic behaviors of students, affecting their perception of and motivation for the technology.

In the current study, the GTE students exhibited an optimistic attitude toward GenAI; they demonstrated that they are aware of and understand the different potentials and limitations of AI tools. When using GenAI technologies, the respondents were fully aware that although GenAI provides benefits, it also has limitations when handling complicated tasks and possible risks regarding inaccuracies, biases, and insensitive content (Chan & Hu, 2023). The majority of the students reflected an understanding of the different concerns and challenges in GenAI such as its limitations, possible biases, potential inaccuracies, and inappropriate context (Pitts et al., 2025). This awareness is essential because, as Yusuf et al. (2024) argue, unregulated adoption can compromise research authenticity and diminish higher-order thinking skills. This signifies GTE students' responsible use of GenAI tools, as it reflects that the users are aware of its drawbacks and, therefore, will tend to use GenAI cautiously.

Moreover, the GTE students have a balanced and moderate perspective of their trust in using GenAI because of the acknowledged setbacks when using GenAI. This implies that while students are aware of the usefulness of GenAI, they remain cautious about its reliability and ethical implications. Such moderation may limit the full benefits of GenAI because students hesitate to use it extensively for research tasks, relying on it only for basic assistance such as grammar checks or idea generation. Zhang, Zhao et al. (2024) clarify that

students are aware of the potential risks and possible inaccuracies, which leads to students' mistrust of the information provided by GenAI.

Despite the students' awareness of its challenges and setbacks, numerous studies have expressed positive attitudes toward the willingness to use GenAI and advocated the integration of GenAI in teacher education (Sanusi et al., 2024). The data generated in the current study supported this – the more knowledgeable about GenAI that the students are, the more likely they are to envision using it in the future (Chan & Hu, 2023). However, despite the respondents' positive outlook on the use of AI tools, the findings also revealed that in addition to other issues, there are still concerns regarding how AI may cause the students to rely on those tools (Zhai et al., 2024). Overall, students have various motivations for using GenAI considering the benefits and risks regarding transparency, accuracy, and privacy.

The use of GenAI among GTE students is driven by individual experiences, social interactions, and technical features. These findings suggest that GTE students use GenAI because of the services and features offered by GenAI, including efficiency, flexibility, convenience, and the boosting of productivity (Yusuf et al., 2024). Individual factors reflect the students' personal experiences in using GenAI for any purpose, while social and technical factors pertain to the influence of peers and the functionality of the AI tool, respectively. The results imply that as students interact with the technological tool and discover new features, the more satisfied they become when using it, leading them to be more motivated to continue using the services that are offered (Kang et al., 2024). As confirmed by Gupta (2024), individual factors can also influence the users' trust and acceptance of the tool, which substantially leads to continuous use of the tool. Students also considered the usability of GenAI as a motivational factor that shapes their attitudes toward GenAI. Students tend to be drawn to use AI services due to the technical features that bring convenience and efficiency and prove to be useful for the users (Abbas et al., 2024).

Similar to individual factors, as students perceived ease and usefulness increase when using GenAI, the more they accept and trust the services offered by GenAI tools (Amoozadeh et al., 2024). Furthermore, although social factors received the lowest weighted mean among the three factors, the respondents still acknowledged their role in influencing students to use GenAI through how people in their environment shape their perceptions of GenAI tools. Orchard and Tasiemski (2023) present that motivation in terms of social factors directly affects the acceptance of GenAI, which leads students to engage in using GenAI services when they become aware that others have benefited from using them. These motivational factors not only drive GenAI adoption but also shape students' overall academic direction, creating a foundation for understanding how such influences extend to their attitudes toward research.

The attitudes of GTE students toward research were found to be positive. The students have a strong perception that research is a useful academic work and consider it highly significant in their career development and in their profession

(Thiem et al., 2023). Moreover, the respondents believe that research can contribute to the acquisition of skills that will be helpful in the future. However, despite the fact the GTE students' overall perception of research is positive, research can also cause some anxiety. Students acknowledge that despite its usefulness, research can cause them to be nervous, stressed, and anxious (Zhang, Rice et al., 2024).

They also think that research is a time-consuming and complex task that needs both factual and evidence-based information and financial funds (Thelwall et al., 2023). Additionally, GTE students have positive attitudes toward research predisposition, which indicates that the respondents are interested in engaging themselves in research courses and find them enjoyable to do. Thus, the findings indicate that while some respondents viewed research as challenging and demanding, GTE students generally maintain a positive outlook and remain willing to engage in research as an essential component of professional development.

The test for the correlation between the perspectives of GTE students on GenAI, their motivation for GenAI, and their attitudes toward research showed that these variables are significantly related to each other. To begin with, how students perceive the use of Gen AI influences their motivation to use the tool. For instance, GTE students positively view the GenAI tool as a useful and significant tool that is non-detrimental to critical thinking and that enables enhancement of productivity and improvement of the quality of work, the more they will intentionally use the tool. Notably, the students' motivation can also potentially impose a positive impact on their perception of AI (Lin & Chen, 2024).

As students become more aware of the individual, technical, and social benefits of GenAI, their trust and acceptance of the technology increases despite existing concerns and challenges (Yusuf et al., 2024). Kasilingam (2020) conducted a study that supported the findings on how ease of use, enjoyment, risk perception, and openness to new features influence students' attitudes toward the use of GenAI tools. These results also align with the findings of Kleine et al. (2025) that students' perceived usefulness of the GenAI tool positively influences their attitude and their frequency of use.

Similarly, the influence of the students' positive perceptions of their motivation mirrors the impact imposed on their perceptions of research. Although the relationship shows only a weak positive correlation between the two variables, it still provides the significant understanding that the students' optimistic view of the use of GenAI also influences how they perceive research. Students who occasionally use GenAI may experience convenience and reduced stress in specific tasks, but this does not guarantee continual improvement in research attitudes. Other moderating factors such as prior research experience, academic specialization, and digital readiness likely influence these outcomes, as suggested by Kang et al. (2024) and Wang et al. (2025). For example, students will find research not only useful but also less challenging, complicated, and

demanding if they see that GenAI has the potential to stand as a support to make research efficient but still reliable (Bjelobaba et al., 2025).

Similarly, in the study conducted by Chan and Hu (2023), the respondents also recognized the potential of AI as a learning support in research, leading to AI positively influencing the students' attitudes toward research. On the contrary, in addition to the issues of accuracy and bias in the use of AI is the issue of students becoming too dependent on using AI when conducting research (Zhai et al., 2024). Overreliance on AI results in the loss of authenticity of the research study. Moreover, Fan et al. (2025) highlight that excessive AI dependence can result in metacognitive laziness. This means that when students become over-dependent on GenAI, they tend to disengage from mental processes and exert less effort on learning.

In general, the significant relationship between GenAI and attitude toward research implies that GenAI can aid academic tasks. However, its weak relationship signifies that potential risks and challenges will still exist (Chan & Hu, 2023; Yusuf et al., 2024). The weak positive correlation between the motivational factors to use GenAI and students' attitudes toward research is also reflected. Overreliance on AI tools can lead to plagiarism, lack of originality, and weakened critical thinking, concerns that resonate in the study of Bjelobaba et al. (2025). This signifies that the students' individual, social, and technical factors that influence them to use GenAI also have an impact on their view of research. Although the correlation is not strong, it implies that students who tend to use GenAI are more inclined to have a more positive view of research (Chan & Hu, 2023).

This is likely due to the support and services that GenAI provides, making research tasks manageable and less complicated. Kim, Klopfer et al. (2025) emphasize that these weak correlations suggest that positive perceptions and motivation for GenAI do not automatically translate into equally strong attitudes toward research. For policy and pedagogy, this means that GenAI can support research engagement but should not be viewed as a sole driver of positive research attitudes (Yusuf et al., 2024). Furthermore, the finding that students exhibit high positive perceptions but only neutral trust in GenAI indicates the need for targeted interventions (Chan & Lee, 2023).

Hence, this insight supports the development of a framework for AI literacy in higher teacher education programs that emphasize ethical use, critical evaluation, and integration into research tasks. Institutions may need to implement complementary strategies such as structured research mentoring and critical thinking workshops to reinforce research skills alongside AI use. Potential moderating factors such as age and teaching experience warrant further investigation, as younger students or those with limited teaching experience may exhibit stronger reliance on GenAI for research support. These findings show that proper and structured integration of AI tools can positively affect students' attitudes toward academic tasks.

6. Conclusion

The findings of this study contribute a substantial number of insights with relevance to the context of graduate studies. The results show that the students' perceptions of research is influenced by their use of GenAI. When students view GenAI positively and as a useful tool for additional information, clarification, and enhancement of the research paper's quality, the more they acknowledge the usefulness of the research and the more it reduces their research anxiety.

Additionally, social influence such as peer recommendations and academic trends played a significant role in encouraging students to explore and adopt GenAI tools. On the individual level, students expressed that their curiosity, adaptability, and the efficiency of using GenAI motivated them to engage with AI technologies. The variables positively correlated with each other, signifying that GenAI imposes substantial influence on the students' views of research. As GenAI advances and becomes increasingly accessible, it is crucial to guide students toward proper, informed, and purposeful integration of these tools into their academic tasks.

Based on these findings, it is recommended that Philippine state universities offering teacher education programs should integrate comprehensive guidelines on the use of AI tools into the academic curriculum. Importantly, training programs on responsible GenAI use may also be implemented to help instructors guide students in critically evaluating and ethically using AI-generated content, ensuring that the integration of GenAI not only supports academic success but also fosters critical thinking and academic integrity. This study provides empirical evidence from a state university in the Philippines on how GenAI use shapes research attitudes among graduate students in teacher education and offers insights that are relevant to teacher education programs in developing countries. Future research should employ structural equation modeling (SEM) to explore causal pathways and moderating factors, thus providing a deeper understanding of the variables that influence the use of AI and research attitudes.

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8. Declaration on the Use of GenAI

The author used only GenAI for checking the grammar and readability of the manuscript. Moreover, the author assumes full responsibility for the content of the publication.

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