

Master Students' Perceptions of How ChatGPT Influenced Critical Thinking in Academic Writing at The Industrial University of Ho Chi Minh City

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ABSTRACT

Keywords: ChatGPT,
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ChatGPT is an artificial intelligence (AI) tool adapted to various fields, including tertiary education. Typically, some postgraduate students might recognize this state-of-the-art technology as a useful aid to improve critical thinking skills in their academic courses, while some recognize the limited creativity and critical thinking skills. Therefore, this study aims to discover the perceptions on whether ChatGPT use can enable Master students to promote or restrict critical thinking abilities in academic writing output at IUH, Vietnam. The researchers will integrate quantitative and qualitative methods to gather opinions from 28 postgraduate students using ChatGPT in their writing work, simultaneously applying semi-structured interviews to get in-depth sharing on how ChatGPT affects the development of their critical thinking and potential drawbacks in academic tasks when utilizing this tool. The study highlights the positive effect of utilizing ChatGPT on students' critical thinking in the context of academic writing. However, it also emphasizes that overreliance on this tool may lead to analysis limitations and plagiarism issues. As a result, educators must consider applying a balanced pedagogical approach to this tool to foster students' writing work and their critical thinking skills.

Introduction

Academic writing is one of the fundamental literacy skills in research and education, expressing ideas, findings, and analysis through a structured approach (Mohamed & Mona, 2024). It follows specific conventions and standards, enabling researchers to present the clarity and coherence of complex arguments throughout essays, research papers, and reports (Saurav, 2024). Malik et al. (2023) state that academic writing also fosters a rigorous analytical mindset. In addition, Allen and McNamara (2017) state that academic writing performance demands combining cognitive abilities and knowledge to boost writing processes, including critical thinking and problem-solving. Moses and Mohamad (2019) highlighted that acquiring effective writing skills can be challenging for most English learners worldwide. Remarkably, the writing process requires critical thinking, and produced texts are considered the product of critical

thinking (Janse van Rensburg, 2024). These factors inspire the researchers to look deeply at postgraduate students at IUH, Vietnam, who might need the help of AI-assistance tools to enhance their critical thinking and innovation capabilities in their academic discourse.

On the one hand, nowadays, with the advancement of the education sector and AI technologies, AI-based tools like ChatGPT have become a necessary part of the English learning process, enhancing critical thinking in academic writing work (Chun et al., 2016). Specifically, ChatGPT and its chatbot were formally launched by OpenAI in November 2022 (OpenAI, 2023). It encompasses a large-scale range of Natural Language Processing to answer questions, write comprehensible essays, and software programs (Kasneci et al., 2023). Bitzenbauer (2023) implies that ChatGPT usage effectively promotes critical thinking skills among students in Germany. Furthermore, this tool encompasses every step of the writing process, beginning from the initial idea generation to the final editing phase of the completed texts (Altmae et al., 2023). According to Kogut (1996), critical thinking is the competence to proceed to assess facts and evidence and make decisions. Additionally, Smith and Holmes (2020) state that decision-making and judgment-forming in certain circumstances are both components of critical thinking. A previous study by Bitzenbauer (2023) implies that ChatGPT usage promotes critical thinking skills among students in Germany effectively, while Guo and Lee (2024) scrutinize students who agree that ChatGPT contributes to different worldviews but challenges their thinking. They emphasize that adequately applying ChatGPT can improve their critical thinking competence and be willing to share it with other learners.

Nevertheless, along with potential benefits, concerns have also been raised regarding the overuse of ChatGPT in academic settings; overdependence on ChatGPT may restrict critical and problem-solving thinking skills. Besides, ethical, legal, and privacy are raising concerns (Ngo et al., 2024). A study by Sok and Heng (2023) demonstrates that those who tend not to cite the sources created by chatbots in writing assignments will face academic misconduct and cheating in their academic writing courses. Additionally, students can gain no professional and educational growth, resulting in limitations in critical thinking. (AlAfnan et al., 2023). In Vietnam, Nguyen (2024) reveals that most Ho Chi Minh City University of Industry and Trade freshmen view ChatGPT positively for English writing and critical reflection. There are some who get obstructed when using it in their academic processes. 26,67% of students admit that being over-consistent with AI technology results in satisfaction in their learning path since they adopt ideas and suggestions without careful review, which could limit their writing performance. It is noticed that previous studies merely concentrate on exploring the effects of ChatGPT use and academic writing or using ChatGPT to critical thinking, but there is not much research relating the individual viewpoints on exploring ChatGPT's effects on critical thinking skills in academic writing courses in Vietnam. These factors inspire the researchers to look deeply at postgraduate students at IUH, Vietnam, who might need the help of AI-assistance tools to enhance their critical thinking and innovation capabilities in their academic discourse. Consequently, this paper comes up with an overview of the Master's students' use and misuse of ChatGPT for critical thinking ability in the formal writing process in tertiary education at IUH.

Literature Review

Atlas (2023) determined that ChatGPT was a powerful tool for understanding and reacting in a naturalistic way to linguistic input, making it useful for various functions, especially in the field of higher education. In this way, tertiary education could gain benefits greatly from using ChatGPT, including writing aid, language acquisition, and research. Furthermore, educators

may see ChatGPT as a helpful tool for creating interactive quizzes, lesson plans, and educational materials. It could be easy for professionals when ChatGPT provides information in writing reports, making presentations, and summarizing large amounts of data. While ChatGPT had great potential, it also had limitations, including incorrect understanding and inaccurate responses. As a result, notwithstanding taking on the role of an impressive consultant, the researcher should deeply examine ChatGPT's enormous capacities and limitations and how to use them responsibly.

Ratnawati et al. (2018) described academic writing as a process of setting and developing in the higher education context. It categorized the framework and evolution taught in the undergraduate process, fostering ideas and critical thinking abilities. Academic writing made a vital contribution to university graduate students' purposes: papers, reports, assumptions, and assignments. Research showed that academic writing was essential and cultivated more in the current learning contexts because it directly impacted students' degrees and certificates. Additionally, when writing academic tasks, the authors mentioned that learners increased awareness in their mindset to become better researchers. The results conveyed that academic writing was a prerequisite factor for all learners. Hence, undergraduate and graduate students must engage and promote it consistently.

It cannot be denied that critical thinking soft skills are of immense significance in learning and working environments. A paper by Lai (2011) determined that critical thinking was all-encompassing, which comprised soft skills such as argument analysis, inference-making, and troubleshooting. His study revealed that critical thinking development requires cognitive skills, certain ways of thinking, and mindset. It is advised that people be eager to learn and foster these soft skills in their early lifetime with proper constructivist approaches, explicit instructions, and interactive learning methods. Notably, the writer noted that open-ended and real-world tasks reinforced students' ability to find proof, provide logical explanations, and dispute to gain an insightful understanding of the critical thinking process.

Koos & Wachsmann (2023) used to explore challenges, opportunities, and recommendations by ChatGPT's impact on Academic Writing at universities and other higher education institutions. This paper implemented a structured analytical method to explore the role of ChatGPT in aiding students' and researchers' academic writing processes and analyzed its challenges. The study recorded that plagiarism, critical thinking skill loss, and diminishing creativity disturbed students' academic work. The researcher also noticed that ChatGPT sometimes provided incorrect sources and information and raised ethical issues. Balancing challenges and advantages when using ChatGPT was necessary to help students improve their cognitive and critical thinking capabilities. Although the research mentioned the ethical problems when using ChatGPT in writing processes, there are no solutions to solve this problem.

A study by Tran et al. (2025) explored the impact of AI-powered tools on the academic writing of EFL postgraduate students. The research found that these students frequently used applications such as ChatGPT, Grammarly, and Quillbot to assist with grammar correction and paraphrasing. This usage led to improved writing quality and enhanced academic performance. Additionally, students reported increased motivation and confidence, feeling that AI tools supported their idea development and task preparation. However, challenges such as login difficulties, subscription costs, and internet connectivity issues were also noted.

Nguyen et al. (2025) also agreed that ChatGPT improved students' writing skills by suggesting quick and useful ideas, paraphrasing, and correcting grammar as well. However, the study also highlighted several concerns. In particular, students expressed uncertainty about the reliability

of the information provided by ChatGPT. In addition, there are significant issues relating to the absence of proper citations and the potential risk of plagiarism. Last but not least, students were also worried that over-reliance on AI tools might dismiss their critical thinking and self-directed learning skills development. Since this study only focuses on one institution, it still provides insightful information about Chat GPT's dual role as both a supportive educational aid and a potential challenge to academic integrity and skill development.

According to Maghamil and Sieras (2024), students exposed to ChatGPT indicated significant improvements in writing content, organization, and grammar, with higher posttest performance in the experimental group among 54 grade 12 students. Furthermore, Yin (2024) admitted students' average writing scores boosted from 23.13 to 29.58 on IELTS-style essays, presenting gains in building logical sentences and structure. Specifically, the researcher combined a mixed-method approach between pre and posttests with an IELTS argumentative essay and semi-structured interviews involving 60 Chinese EFL learners at the CEFR intermediate (B1 to B2) levels.

Both Yin and Rapanta (2024) admitted that ChatGPT supported students critical thinking. Based on qualitative results, Yin proved that ChatGPT developed comprehension of critical thinking and enhanced writing by giving an appropriate model speech, providing content information, and improving writing logically. Rapanta (2024) also emphasized that ChatGPT can help scholars refine their thinking and explore new areas through literature assimilation and clearer academic language. Through her auto-ethnographical exposure and individual experience, she discovered this state-of-the-art AI chatbot technology by providing it with a research topic, "Postdigital citizenship education and argumentation: Can AI support students' critical literacy?" It also stated that staying focused on critical thinking strategies was necessary when utilizing this tool.

Apart from notable results, Yin (2024) pointed out that ChatGPT's critical thinking limitations were insignificant. It would be better if the author could design more research questions to gain diverse data and sources and thoroughly understand the student's critical analysis abilities. While Rapanta (2024) implied some restrictions that the author should consider, such as emphasizing ChatGPT only while other AI assistant tools like Grammarly and Paperpal, Quillbot and Wordtune, or Research Rabbit were applied in academic writing texts regularly. The writer also wished to implement an in-depth investigation of researchers' viewpoints on the ethics and quality of academic performance.

Several studies have examined the connection between critical thinking and academic writing. Hanim et al. (2020) discovered the connection between critical thinking and the academic writing process. The quantitative study used a questionnaire as the instrument to survey 207 first-semester undergraduate students participating in an academic writing course in Malaysia. The author used five strategies of Haase (2010) to analyze the perception of researchers on critical thinking abilities. The finding showed that researchers realized it was "easy to decide what to write" (mean=2.92). The study indicated intriguing interrelations between writing and critical thinking skills. Especially in academic writing, the writing process correlates to critical thinking because students concentrate on the content, such as making decisions and generating ideas. Further to the connection, future research could examine the impacts of critical thinking and the academic writing process.

Additionally, Thanasingam (2019) explored "the nature and the role of critical thinking in academic writing" from a social-cognitive perspective to meet the demand in higher education. This study clarified the importance of critical thinking based on cognitive theory. The study results showed that the three main aspects of critical thinking and academic writing were

problem-solving, transforming knowledge, and evaluating solutions. However, this research had two research gaps. The first gap was that critical thinking was not clearly defined as it could be called by various terms like critical analysis or critical evaluation, and the second gap was the lack of a clear theoretical framework to evaluate the academic writing process.

Nowadays, it is undeniable that ChatGPT implementation has the potential to enhance learners' cognitive development, particularly in areas such as analysis, problem-solving, and digital literacy. Qawqzeh (2024) examined the impact of ChatGPT on critical thinking, problem-solving, and creativity among 515 participants at the University of Fujairah. Findings revealed significant improvements in learners' cognitive and analytical abilities. Likewise, Avsheniuk et al. (2024) explored ChatGPT's influences on students' critical thinking in English Language Learning Courses at Ukraine University. The study involved thirty-one students and three instructors from the course. The researchers composed questionnaires and surveys and assigned project-based activities to gather data to define the opportunities and challenges when using ChatGPT. The results concluded the critical thinking skills of these participants were enhanced considerably, specifically, the positive change in problem-solving, logical thinking, and cognitive abilities.

Similarly, Swaraj and Chavan (2024) investigated ChatGPT's influence on human cognitive critical thinking. Two hundred and two graduate students aged between nineteen and twenty-four were invited to participate in the survey. A quantitative method, with questionnaires, was used for this research to find the way that ChatGPT impacted creative and critical thinking. The students found improved academic productivity and efficiency, and creative and critical thinking analysis was promoted based on the ChatGPT support, which included providing feedback on grammar and syntax.

Regarding digital literacy and reflective skills, Tran and Tran (2023) aimed to identify ChatGPT's role in promoting students' critical digital analysis skills in the language learning process at Ho Chi Minh City University of Industry and Trade. The investigators implemented a qualitative approach, specifically semi-structured interviews with eight English learners and three mentors. The study reported that most responders benefitted from ChatGPT in grasping significant improvement in critical reflection skills, including promoted problem-solving, originality, and cognitive flexibility abilities. In addition, these learners admitted that their abilities in analyzing information sources and news, examining credibility, and understanding international culture were gradually enhanced.

In terms of pedagogical applications and comparative insights, Essel et al. (2024) concurrently discovered how ChatGPT affected students' critical, creative, and reflective thinking soft skills at Ghana University. The study incorporated quantitative and qualitative approaches and applied a pre and posttest control group and experimental procedure. The authors randomly collected the data from a sample of 125 students, specifically 60 students assigned to the experimental group (EG) involved in ChatGPT use for tasks in academic writing class, while 65 students in the control group (CG) were designed with classic databases and search engine systems for the same tasks. All mentioned findings proved that incorporating ChatGPT in the academic courses (EG) positively impacted students' critical and creative thinking skills.

Notwithstanding these positive findings, there are still several limitations. Many studies relied on small or non-diverse samples, particularly Avsheniuk et al. (2024), restricting the scope of generalization. Some studies, like Qawqzeh (2024), lacked exploring important aspects such as mental competence or ethical concerns. Others were devoid of detailed analysis of how ChatGPT impacted specific learning tasks (Swaraj & Chavan, 2024). In combination, these gaps foster the need for more comprehensive and methodologically diverse research that

investigates the cognitive outcomes of using ChatGPT and the ethical, pedagogical, and long-term implications as well.

Along with huge benefits, there are also negative effects of the loss of critical thinking due to over-dependence on this powerful tool. This concern urged Chatare (2024) to synthesize the limitations of ChatGPT on critical thinking in his study. The researcher signified that, albeit with advantages, ChatGPT also had potential disadvantages that affected learners' critical thinking. The research article used a secondary data approach by collecting the Scopus, Web of Science, Google Scholar, Research Gate, and Google databases. The findings listed ten limitations of using ChatGPT on critical thinking: prejudice, context learning limitations, self-studies, mistakes, plagiarism in writing, diminished brainstorming abilities, deficiency of Emotional Quotient, ethical issues, and risk of professional growth.

The over-dependence on modern technology could limit students' critical thinking skills, leading to a lack of in-depth learning practices and an increase in academic plagiarism cases. Ferreira (2024) decided to study the negative impacts of using Chat GPT in Higher Education. The author merged systematic literature reviews and semi-structured interviews of students and mentors and consolidated data by content analysis and thematic coding methods. The results spotlighted negative effects on learners, such as critical thinking undermining, autonomous individual learning reduction, and plagiarism facilitating in academic writing work resulting from the over-use of ChatGPT.

Krupp et al. (2024) simultaneously analyzed the impacts of ChatGPT on problem-solving strategies in higher education. This research used mixed methods, including exit interviews. Background physics students were acquired in this study, one group of 12 students having access to a web browser and the other group of 27 students being allowed to utilize ChatGPT without limitations. The findings show that copy and paste is the foremost tactic in ChatGPT. ChatGPT users over-rely on copy and paste (42%), highlighting the lack of critical thinking to solve problems. This research highlighted that missing reflection and critical thinking decline are two main issues when using ChatGPT.

Another study investigated by Guo and Lee (2023) exposed the usage of ChatGPT to develop critical thinking skills. The setting was 29 first-year undergraduates from the elementary chemistry courses at Georgia Gwinnett College. The study used qualitative and quantitative methods, focusing on students' essays and the survey to analyze students' perceptions of their critical thinking ability. The finding showed that ChatGPT brings students poor-quality comments, and it is quite difficult for them to find reliable sources of information. Nevertheless, students' set of beliefs in thinking critically, from 46% to 67%, was nurtured by ChatGPT use, typically in recommending multi questions, data and information assessing, and drawing rational conclusions in return. Furthermore, these students were able to effectively accomplish the assigned essay, illustrating the adequate incorporation between ChatGPT and the learning process.

Coincidentally, Mahmut and Sen (2023) examined the impacts of ChatGPT on students' critical and analytical abilities. This study interviewed 14 students in tourism-related programs. The findings showed that students produced thoughtless conclusions by relying on ChatGPT without inquiring about deeper critical analysis. Then, students' overreliance on information from AI prevented them from taking opportunities to learn through experience, resulting in their inability to use critical thinking skills to analyze situations and develop problem-solving skills relevant to the tourism industry. Although ChatGPT enabled access to information quickly, its disadvantages in reducing analytical thinking should be considered.

Collectively, these studies fell short of underscoring significant risks when learners passively or excessively utilize ChatGPT. Overreliance can weaken critical thinking, impair academic integrity, and limit the development of autonomous learning skills issues, especially relevant in postgraduate contexts. Consequently, these findings raise the importance of AI guidance and critical engagement in academic writing.

Research Questions

To fulfill the purpose of the study, the survey sought to answer the following research questions:

1. Are Masters students' critical thinking in academic writing enhanced by using ChatGPT?
2. What positive and negative consequences do students perceive of ChatGPT experience in learning academic writing courses in postgraduate education settings?

Methods

Pedagogical Setting & Participants

This study was implemented at the Industrial University of Ho Chi Minh City (IUH), which was established in 1956. It is renowned as one of the best universities in Ho Chi Minh, Vietnam, and is notably ranked 127 on the Asian University Rankings List. Currently, IUH is encouraging the learner's competency in higher education by publishing the Postgraduate Programs; especially those who majored in English can pursue their Master of Arts degree. Thus, it would be a convenient source for the researchers to conduct their study. A class of 28 English linguistics students was chosen to answer the questionnaires, and 10 members of the group joined the in-depth interview section. According to personal information, their age spread from 23 to 51, with the dominance of 23 females and 05 males. Prior to taking part in this investigation, they were attending the research writing course, which requires a highly concise performance and critical writing.

These students were chosen as a crucial part of the research for several reasons. First, most of them were between the ages of 23 and 51, with mature thinking and stable and expertized knowledge of English. The selection of such research samples was to ensure diversity in age, professional qualifications, and experience. This collected information would help the research process to have a better overview of the positives and negatives of the research writing process. However, they were experienced learners and still faced various obstacles with academic writing courses, particularly at their early stage of postgraduate education. This emphasized a strong need for a support technology tool such as ChatGPT. Second, the research could be more reliable and valid because these students were likely to share the best responses and accurate feedback since the questions were so practical and stuck to their current concerns regarding the ways to enhance their writing quality. Last but not least, the researchers can gather authentic data since students' engagement with the questionnaire was sincere and enthusiastic.

Design of the Study

In order to gather data efficiently, the researchers executed both questionnaires and semi-structured interviews. Zoltan (2003) noted that questionnaires offer various advantages as they are cost-effective, time-saving, and can be distributed to large groups with little effort. These benefits made them an ideal choice for this study. The questionnaire was created to align with the research aims and literature review. It was delivered to 28 students after careful preparation and check. These questions were kept clear and accessible for participants so that they could feel comfortable and engaged. The questionnaire consisted of three sections.

Table 1

Design of the research

Research Methods	Part I	Part II	Part III
Survey	Students' information and engagement with ChatGPT	ChatGPT's advantages on critical thinking in academic writing	ChatGPT's limitations to academic writing
Interview	Personal perspectives on the negative and positive effects of ChatGPT on critical thinking and writing skills		

Furthermore, interviewing was a qualitative research method that relied on asking questions in order to gather data (Ziche, 1990). The point of a qualitative interview is to let the respondent tell their own story on their own terms. The interview for students included 06 open questions designed in English to find out students' perspectives on whether ChatGPT use could enhance or limit their critical thinking ability in their academic assignments.

In the interview section, students would first introduce themselves and whether they had used ChatGPT or not. Then, they would answer some questions relating to ChatGPT's benefits for enhancing critical thinking skills. The last section was about the limitations and negatives that ChatGPT brought to students.

Data collection & analysis

A questionnaire played an important role in the research. Therefore, the researchers spent a huge amount of time designing all the questionnaires. Next, they delivered it to 28 students taking the Masters of Arts Program at IUH. To receive accurate data, the researchers first provided students with the guidelines so that these students could answer the questions quickly, which took around 05 minutes. After completing the survey, each of the ten students switched to join the interview section, which was lengthened by 05 minutes, with the researchers. It took 4 days for the authors to collect and select expected answers. In particular, no invalid questionnaires were eliminated from the data analysis procedure.

It was noticeable that data classification was a vital part of data management, helping arrange and categorize the input data properly. After collecting the data, the researchers selected and checked the answers. If any answer sheet or interview data involved incomplete sentences, they were discarded from the survey so that the authors could get valuable and reliable information for the research.

Data analysis was the next step after completing the data classification. The researchers could input the data and process the information using Excel software. These kinds of charts were designed depending on the specific purposes of each question. After that, the researchers analyzed the numbers and percentages and made comparisons. Lastly, the writer gave comments and conclusions for each data set.

Results/Findings

Quantitative data

To find out the answer to the two research questions, the researchers engaged 28 postgraduate students to respond to a list of 08 questions through an online link. All results are consolidated

as charts and tables below.

Figure 1

The number of users to ChatGPT

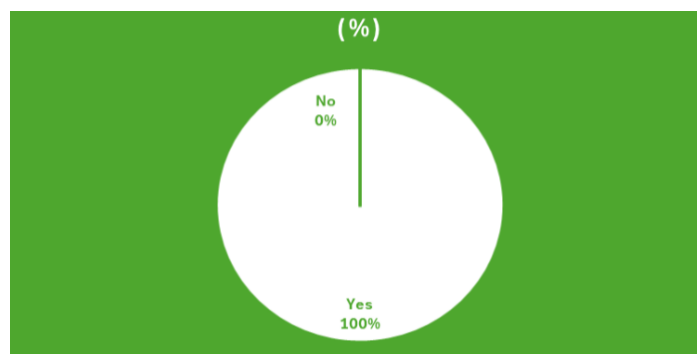


Figure 1 reveals that 100% of Master of Arts Students at IUH were undeniably interested in using ChatGPT as a useful AI tool to assist their academic writing. This proves that this generated text and checker is essential to language acquisition, particularly in academic writing courses.

Figure 2

The frequency of using ChatGPT in academic writing assignments

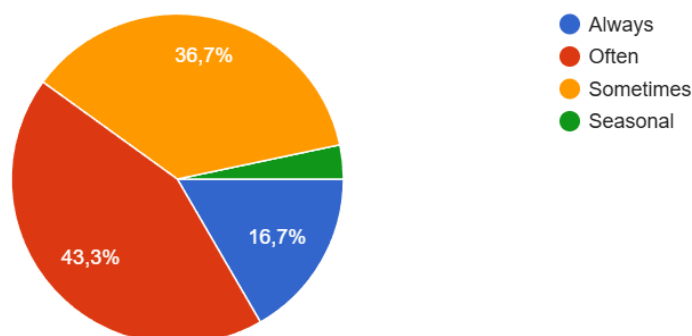


Figure 2 shows the frequency of using ChatGPT when students were assigned to write academic writing tasks after each lesson by the lecturer. It can be seen that the majority of students often apply ChatGPT in their writing, taking a count of 43.3%. In particular, 16.7% of students find themselves always utilizing this tool. 36.7% sometimes consider using its Chatbox. Meanwhile, only 3.3% of students admit to using it seasonally. There are no students who have never used ChatGPT during their academic program. In summary, it was pretty popular and convenient for all respondents to use ChatGPT for academic writing.

Table 2

Positive impacts of ChatGPT to students' critical thinking to academic writing assignments

Extremely	Very much	Moderately	Slightly	No impact
3.3%	51%	39.0%	6.7%	0%

Figure 3

Increasing critical thinking abilities via using ChatGPT

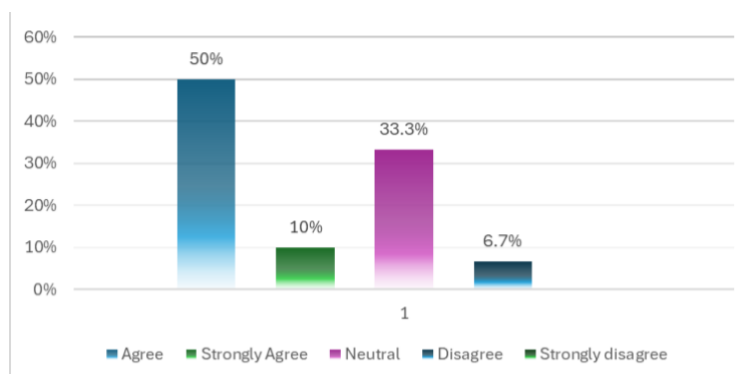
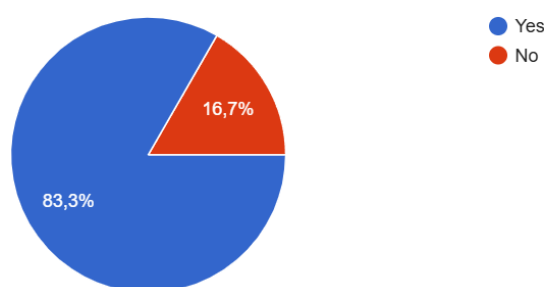


Table 2 and Figure 3 explore the positive influences on students' critical thinking skills when integrating ChatGPT into their academic tests. The result shows that 51% of students agree that ChatGPT can bring “very much” while 3.3% feel “extremely” positive impacts on their critical thinking. At the same time, some find their cognitive competence moderated (39%) after using this tool. Among these, no one denies the positive sides of this tool. The collected data reveals that more than half of the group confirmed that using ChatGPT is helpful to their academic texts, specifically enhancing their critical thinking.

The pie chart also presents data on the percentage of stages of critical thinking abilities that postgraduate students in English linguistics at IUH agree on. Overall, opinion "agree" made up one-half of the chart; after that, "neutral" accounts for 33.3% of the total number of votes of the group. Moreover, there is not anyone who voted for "strongly disagree". This chart shows that postgraduate students agreed that ChatGPT can increase critical thinking abilities.

Figure 4

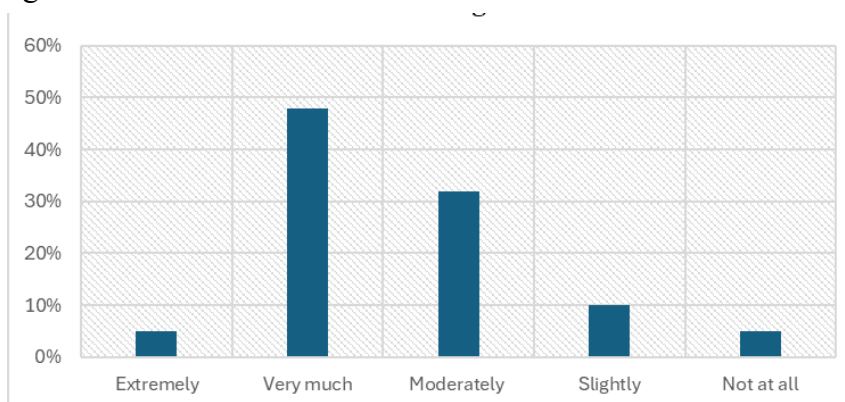
The enhancement of critical, creative, analytical, and cognitive thinking in academic tasks when applying ChatGPT



This graph displays the findings of question number 5. The data of this pie chart shows the respondents' potential view that ChatGPT can enhance their critical and creative thinking skills. A huge majority (83.3%) responded “yes”, signifying their belief in the positive impact of such technology. In contrast, 16.7% answered “no”, signifying they hold a different view on its effectiveness. These results reflect the validity of applying ChatGPT to critical and creative thinking abilities.

Figure 5

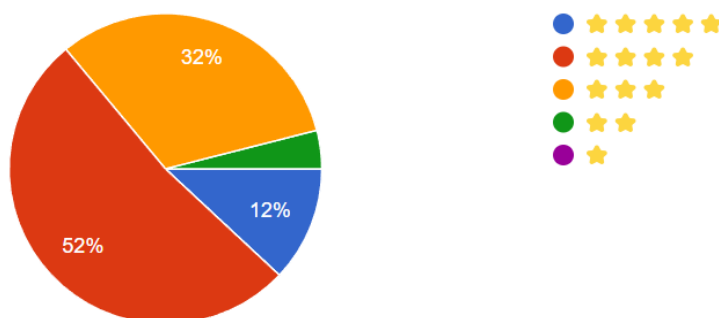
ChatGPT usage in finding reliable information and resources on specific topics to improve critical thinking



This figure illustrates the usage of ChatGPT to find reliable information and sources on specific topics, which is a critical factor fostering critical thinking skills. It can be easily seen from the chart that the percentage of ideas with "very much" tended to be 48% while the ideas with "extremely" and "not at all" were at the lowest point at 8%. Furthermore, several students chose "Moderately" and "slightly", maintaining 32% and 10%. In conclusion, half of the students often concur that they receive reliable information and sources on specific topics dramatically when using ChatGPT. However, there are a few cases where they still gain unreliable information and sources.

Figure 6

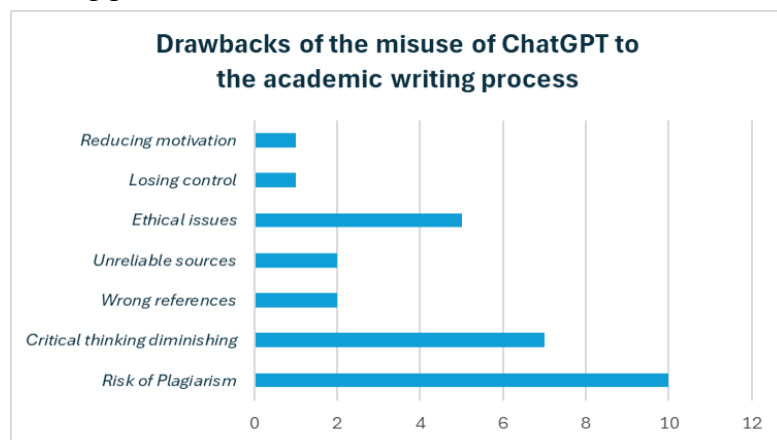
Evaluating the effectiveness of ChatGPT in assisting critical thinking in students' academic writing



This pie chart presents the level of agreement with the effectiveness of using ChatGPT in enhancing critical thinking in students' academic writing. 05 stars (12%) equal "Strongly agree" while 04 stars (52%) mean "Agree" among the participants. Besides, 32% of 3 stars stating "Slightly agree", 12% (02 stars) disagree with ChatGPT's performance and 1-star relatives, and 4% of respondents feel "neutral". In short, most postgraduate students admit that ChatGPT utilization effectively impacts their critical thinking.

Figure 7

Students' responses to limitations and drawbacks of the misuse of ChatGPT in the academic writing process.



It can be seen clearly from the chart that each participant has a diverse perspective on ChatGPT's reliability in academic writing. According to the students' sharing, most respondents confirmed that over-using ChatGPT might bring the "Risk of plagiarism" to a high level while "Critical thinking diminishing" also ranked as the second issue. These students also agree with "Ethical issues". Furthermore, "unreliable sources and wrong references" are reported as considerable issues among participants. Lastly, the challenges regarding "Reducing motivation and losing control" are moderately mentioned. Overall, students might tackle the negative impacts of over-dependence on the use of ChatGPT when learning academic writing skills.

Qualitative data

The researchers chose 10 students to conduct the interview questions. The tables and charts below present interview results.

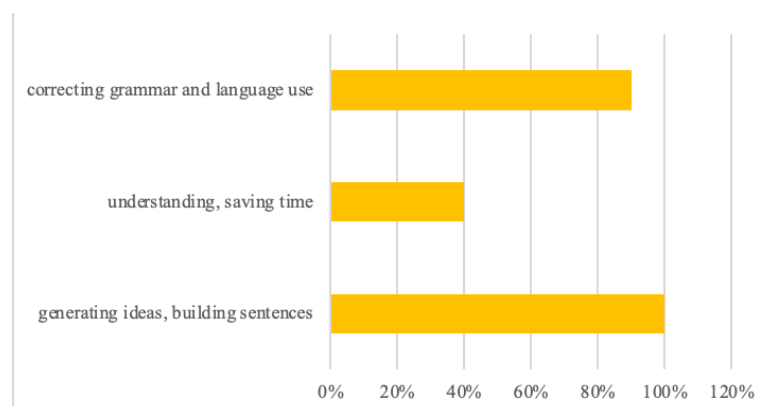
Question 1: Should Master of Arts students use ChatGPT in academic writing?

The ten interviewed respondents agree that students should use ChatGPT in academic writing. They agree that ChatGPT is a beneficial and convenient tool for students, especially in academic writing. For example, student U mentions that "ChatGPT should be used because it helps to create many useful ideas."

Question 2: Share your perspectives on ChatGPT's influence on academic performance.

Figure 8

Students' perspectives on ChatGPT's influence on academic performance



The findings show that ChatGPT positively influences their learning process. A large majority of students agree that ChatGPT helps them generate ideas and build sentences. 85% of them confirm that it assists in correcting grammatical errors and language use. A smaller proportion of students (40%) believe ChatGPT aids in understanding the material and saves time. This result might indicate that ChatGPT is widely regarded as an effective tool for academic performance.

Question 3: Do you feel that Chat GPT use provides you with more diverse ideas and perspectives rather than your current way of thinking?

Question 4: ChatGPT can help you get a better understanding of sophisticated ideas and concepts when writing up. Do you agree or disagree?

Table 3

ChatGPT helps students generate diverse perspectives and understand sophisticated ideas and concepts

Diverse ideas and perspectives	It introduces new perspectives.
	A variety of sources of ideas and references from the internet.
	It has a vaster amount of input than human thinking based on the validity of information.
Get a better understanding of sophisticated ideas.	It can simplify complex concepts and present them more easily, aiding comprehension.
	It paraphrases or gives more transparent information about ideas or concepts.
	I can get detailed feedback elaborating on my writing tasks with ChatGPT's assistance.

Question 3 and Question 4 provide valuable insights into the respondents' opinions. Regarding the ideas and perspectives, three of the interviewed students (TH, HU, and PH) confirm using ChatGPT can provide them with a variety of ideas and new perspectives rather than their own way of thinking. More importantly, they can quickly gather useful information and deliver quality writing projects based on ChatGPT's assistance.

In terms of understanding sophisticated ideas and concepts, interviewees say that Chatgpt has excellent potential to make complex concepts easier to understand. Interviewee T points out, "ChatGPT can simplify difficult concepts and present them in a more digestible way, aiding comprehension". Another interviewee adds to the answer: "ChatGPT gives me explanations for the ideas it provides.". From their point of view, it is concluded that ChatGPT's utility is a helpful tool to foster students' varied viewpoints and insights into new concepts and be a time-saving and useful assistant for their writing tasks as well.

Question 5: How does ChatGPT affect your creative and critical thinking in academic tasks?

Statistics gleaned from ChatGPT's effects on students' critical thinking are presented in Question 5. Participants believe that utilizing ChatGPT positively and negatively affects their

critical thinking. Interviewee NT states that: “There are both good and bad influences. It depends on the users. If users have their own ideas and use ChatGPT as a tool to develop their ideas, they will enhance their creativity because they can find out what they are lacking. However, if students steal ChatGPT’s ideas, their ability for critical thinking is increasingly weakening”. Opinions of the positive side of ChatGPT include the fact that this Chatbox can give helpful ideas to make the task smoother and more precise. At the same time, 07 interviewees agree with this opinion in their interviews. Nevertheless, the rest of the students find ChatGPT negatively affects their critical thinking competence in academic tasks. In conclusion, the effects of ChatGPT on students’ critical thinking are perceived as both beneficial and detrimental, depending on how it is utilized.

Question 6: If long-term use of ChatGPT, do you think your critical thinking in your academic writing has declined with its explanations?

It can be seen obviously that 99% of the interviewed students had the same idea that their critical thinking and creative abilities had been limited when using ChatGPT for a long time. HG, TN, BU, HN, HT, etc., describe that they might become “lazy in generating ideas and be easily dependent on the help of this Chatbox if engaging it for long-term use”. Others explain that “Inaccurate information can lead to undermining critical thinking during a long period of time” and “Being addictive for long-term using this tool”. In short, most students believe that prolonged use of ChatGPT negatively impacts their critical thinking and creativity. This highlights the need for balanced AI use in academics to maintain cognitive skills.

Discussion

In response to research question 01, the study states that most participants admit that their way of thinking, cognition, and analysis competencies in academic writing courses are enhanced significantly by using ChatGPT- the state-of-the-art technology in the era of 4.0. These 28 Master of Arts students enjoy ChatGPT's advantages (Table 1). In addition, the online survey results reveal that the varied responses to the frequency level of ChatGPT usage patterns take up to 60% among participants, signaling its considerable impact on students' learning behaviors (Table 2). This research finding matches with Shoufan (2023), which affirms that students feel a high interest in the integration of ChatGPT while the majority of postgraduate students come to the same conclusion that adapting ChatGPT in the academic writing context can motivate their critical thinking skills (Table 4). Remarkably, it is believed that participants’ feedback in this study aligned with other researchers’ standpoints, particularly, learners' critical thinking is developed and improved effectively with the power tool ChatGPT (Emran et al., 2024). Additionally, as confirmed by Durratul & Badilatil (2024), 66,5% of students' analytical ability in academic writing is positively impacted with the assistance of ChatGPT.

The quantitative results show that not only does ChatGPT provide a large majority of students with recognizing grammatical errors in writing assignments, lexical improvement improving but also helps them create various perspectives and ideas. Therefore, ChatGPT can be considered as the superpower AI tool in the field of language process, which enhances learner's language learning activities effectively and fosters critical thinking, innovation, and the ability to approach subjects from multiple perspectives as well. This finding matches with Rudolph et al., 2023, mentioning that ChatGPT enables the study of the same subject from several angles; it may be a valuable tool for improving critical thinking abilities. Grassini's (2023) previous study also emphasizes the good sides of AI technologies to learners' innovative and critical analytical skills when they are appropriately applied to the field of language education that

meets their needs.

Meanwhile, the tool is seen as effective and motivating; students raised concerns about over-reliance, ethical issues, and the potential decline in critical thinking with long-term use. Adeeb (2023) stated that users may struggle with ethics and plagiarism problems due to a lack of knowledge of identifying unknown sources and data when using ChatGPT. The study's results have the same perspectives as other scholars, such as Alshater (2023) and Cotton et al. (2023), who acknowledge the promise of ChatGPT in educational contexts but also stress the importance of addressing its ethical and practical challenges. In terms of critical thinking restriction, this highlighted finding aligns with Chatare (2024), albeit with advantages; ChatGPT also had potential disadvantages that affected learners' critical thinking. These insights emphasize the need for a balanced integration of AI tools like ChatGPT in education, ensuring that learners benefit without compromising their cognitive development.

Although students acknowledge ChatGPT's drawbacks, they have to recognize its sustainable benefits as an effective AI-assisted tool that promotes their soft skill competence on the road to becoming masters of academic writing assignments.

Conclusion

The researchers conducted this study to explore the two faces of Master's students' perceptions of how ChatGPT influenced critical thinking in academic writing at IUH. Through this research paper, the researchers proved that utilizing ChatGPT remarkably enhanced students' critical thinking abilities in academic writing outcomes. Students who usually adopt ChatGPT point out that there is a more positive trend to its impacts rather than a negative trend. Participants reported dramatic effects on their critical thinking skills; specifically, it offers a lot of ideas for language learning, supporting learning based on learning goals, and real-time language help helps increase learners' autonomy. (Abdelghani et al., 2024). Particularly ethical concerns and moral values such as plagiarism if students constantly depend on using ChatGPT. These issues underscore the critical role that educators, especially the instructor, need to pay more attention to in helping master students use AI tools more carefully and responsibly with their own writing. They may increase their teaching roles by providing learners with clear AI guidelines, regulations, and detailed training sections so that learners can mitigate and control the risk of plagiarism. It is noticeable that diverse experiences with AI can lead to a loss of human connection when acquiring a new language, which can be a significant concern to human roles in an innovative society. In order to address this issue, it is suggested that educators should endeavor to create an inclusive and diverse environment between technology deployment and human interactions. In short, ChatGPT could bring positive benefits, such as giving creative ideas and academic sentence structures for master students who need to complete their tasks, but it still has disadvantages that need to be paid more attention to. AI tools like ChatGPT must be maximized to its strength, reducing the opposing sides.

Despite these insights, the study has several limitations. The small sample size of 28 Masters students in Applied Linguistics restricts the generalizability of findings. Additionally, the lack of research on ChatGPT's impact on critical thinking in academic writing makes it difficult to draw clear and reliable conclusions. The survey and interview questions lacked complexity, which may have constrained the depth of the responses. Future research should adopt experimental designs with pre-tests, posttests, and structured training sessions to provide stronger empirical evidence on AI's role in academic writing.

In conclusion, ChatGPT offers valuable support for Master's students, but it must be used

thoughtfully and responsibly to maximize its advantages while minimizing drawbacks. As AI becomes more integrated into education, further research is needed to create clear guidelines and training to help students use AI tools ethically and effectively.

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