

ChatGPT as a Tool in Developing Research and Language Skills in a Research Methodology Course

NOR FARIZA MOHD NOR *
Faculty of Social Sciences and Humanities,
Universiti Kebangsaan Malaysia, Malaysia
fariza@ukm.edu.my

JAMALUDDIN AZIZ
Faculty of Social Sciences and Humanities,
Universiti Kebangsaan Malaysia, Malaysia

ABSTRACT

ChatGPT has been utilised across various applications, such as language translation, content generation, and language modelling. This empirical study examines how this technological tool is used by a class of postgraduate students to develop their research and language skills. 36 participants, comprising MA, MPhil, and PhD students, were involved. Data was collected through a questionnaire survey and interviews. Results from the questionnaire indicated that the majority of participants agreed that ChatGPT assisted them in doing their research work. This assistance included generating initial ideas for the literature review, summarising past studies, synthesising information from multiple sources, summarising past research articles, exploring concepts and theories for the research, developing more precise questions, rewriting the problem statement and learning how to summarise and paraphrase. Results from the interviews revealed three themes on ChatGPT's function as a research tool: guidance, making inquiry and writing. Meanwhile, the participants reported in the interviews that they developed language skills such as summarising, paraphrasing, writing clearer sentences, knowing how to use synonyms and cohesive devices, using correct keywords, how to give opinions, suggestions and write a paragraph. These findings highlight the importance of understanding how technologies like ChatGPT can be integrated effectively into educational settings. The study concludes that ChatGPT proves to be a valuable tool for students in enhancing various research skills, from idea generation to writing refinement. Its use not only supports academic tasks but also helps improve language proficiency and critical thinking throughout the research process.

Keywords: ChatGPT; language skills; research tool; postgraduate students; research

INTRODUCTION

ChatGPT chatbox was introduced in November 2022 by OpenAI, an American company involved in research and development. The new chatbot utilises an enhanced method of guided learning and reinforcement learning, which are techniques for transferring and applying knowledge effectively. Crompton and Burke (2023) state that research on AI has shown that the tool is important in academia because AI can improve efficiency and develop personalised learning. Therefore, integrating AI generative tools, such as ChatGPT, in the academic context can assist the educational process (Baidoo-Anu & Ansah, 2023; Rudolph, 2018), such as facilitating the completion of tasks, hence, allowing students to focus on other areas of learning (Pitso, 2023). Roose (2022) further adds that ChatGPT is one of the best AI tools that has been introduced to the public. Nevertheless, despite the benefits of ChatGPT, Krugman (2022) believes that the use of ChatGPT may affect decision-making, as people may use the tool to produce automated responses that may affect decision-making. Amid this controversial discussion on the positive and negative

reactions to the use of ChatGPT on skilled workers, decision-making, and democracy, a concern among educators in the academic landscape nowadays is the use of ChatGPT for academic submissions and work. This may be a nightmare for lecturers as the last thing they may want is grading a submission that is generated by an artificial intelligence tool but claimed as the original work of a university student.

Leveraging vast amounts of data, ChatGPT tools have great potential to significantly transform how postgraduate students who are early researchers conduct their research. AI models have been integrated into research and academic settings, with great potential shown in performing tasks, especially literature review assistance, such as summarising findings, suggesting topics and suggesting gaps in research, among others, hence, transforming the field of research (Joublin et al., 2023). Nevertheless, the potential for students to use and perhaps even rely too heavily on the technology to provide immediate answers and solutions has created concern among educators, with many fearing students will use ChatGPT to cheat. There is a risk that students may become too reliant on ChatGPT and other AI tools, which could lead to a lack of critical thinking skills and independence in learning.

While a growing body of research explores the general use of AI tools like ChatGPT in academic settings, a significant gap remains in understanding their specific application for postgraduate research and language skill development. The novelty of this study lies in its focus on the underexplored role of ChatGPT in postgraduate students' research practices and the development of language skills. Although there is nothing inherently wrong about using tools that help, in a Research Methodology course where postgraduate students learn about research, develop research skills, and produce a research proposal, it is pertinent to find out how to leverage this generative AI to assist students who are embarking on a complete research work for the first time. As novice researchers, the students need assistance to write their proposals. Therefore, the present study provides empirical insights into how ChatGPT shapes the information-seeking process and supports this process.

The aim of this study is to investigate how generative AI can be leveraged in a postgraduate Research Methodology course to assist students in enhancing their research and language skills in the process of writing their research proposal.

The present study intends to answer the following research questions:

1. How did the postgraduate students utilise ChatGPT to facilitate research-related tasks for their research proposal?
2. In what way has ChatGPT helped the postgraduate students improve their language skills?

LITERATURE REVIEW

This section reviews relevant theories and the role of ChatGPT in education and its function as a research tool.

THEORIES

The two most relevant theories that this study employs are Vygotsky's Social Constructivist Theory (1930) and Cognitive Load Theory (Sweller et al., 1998). Vygotsky's Social Constructivist Theory fits the study because it emphasises learning through social interaction and scaffolding, which reflects how students use ChatGPT as a guided tool to explore ideas, clarify concepts, and

develop their research and language skills collaboratively with AI support. ChatGPT acts as a learning technological tool that helps learners move beyond their current abilities. Cognitive Load Theory is also relevant since ChatGPT assists in managing the complexity of research and writing tasks by helping students in tasks such as generating ideas, synthesising, summarising, and paraphrasing, thereby reducing extraneous cognitive load. This allows students to focus better on learning and language development tasks without being overwhelmed by information processing. Together, these theories highlight how ChatGPT can scaffold learning and optimise cognitive effort in research-related tasks and language skill development.

CHATGPT IN EDUCATION

U. A. Khan (2023) asserts that AI has fundamentally shifted the educational landscape, enabling customised learning environments. ChatGPT has garnered significant attention in life, spanning health, law, education and beyond (U. Khan & Alamäki, 2023), with its ability to generate human-quality text and facilitate meaningful dialogue across diverse fields. Since its launch, the tool has also been the subject of intense discussion. Previous research has explored ChatGPT's potential applications across academic disciplines that highlighted its significant contributions in medicine, public health education, language learning and others (Hassani & Silva, 2023; U. A. Khan, 2023; Radziwill & Benton, 2017). Thus, ChatGPT facilitates teaching, learning and research, rather than prohibition (Sharples, 2022). According to Kasneci et al. (2023), the tool supports diverse skills—including critical thinking, information analysis, and problem-solving—while assisting educators in lesson planning and assessment. The results of Kasneci et al.'s (2023) study highlighted a gap in empirical evidence, particularly concerning the use of generative AI on student learning outcomes and the potential for over-reliance on generative AI.

Despite the challenges and setbacks of ChatGPT, U. A. Khan (2023) asserts that ChatGPT has significant potential to transform the field of research. Graduate students in particular often face significant challenges in conducting research, including dealing with the overwhelming amount of information available and developing the ability to critically analyse and process data (Mohammed et al., 2023; Almousa & AbuSa'aleek, 2025). ChatGPT offers solutions by offering particular strategies to handle research tasks, such as summarising publications, identifying trends, and synthesising literature. It is therefore evident that research that moves beyond speculative claims to practical, evidence-based studies on tool integration is pertinent, which the present study intends to do.

CHATGPT AS A RESEARCH TOOL

In postgraduate education, AI helps students overcome language barriers and refine research topics, significantly elevating the quality of academic writing (Chauke et al., 2024). Recent studies demonstrate that AI-powered tools enhance research by improving knowledge accessibility, critical thinking, and data analysis (Huang & Tan, 2023; U. A. Khan, 2023) and increasing competence in developing research plans (Alshwiah, 2024). Chan and Hu's (2023) survey on 399 undergraduate and postgraduate students from various disciplines in Hong Kong shows how students recognised AI's potential for personalised learning, writing and brainstorming assistance, and research and analysis capabilities. Additionally, ChatGPT increases productivity by generating research ideas and hypotheses as well as identifying data patterns (Lund et al., 2023), while Khalif et al. (2023) report how students used ChatGPT to find research gaps. Monserrat et al. (2022)

found that AI's application can offer students individualised instructions, a flexible environment for learning, while simultaneously providing support for students with varying needs and characteristics.

In spite of encouraging findings, several studies highlight significant technical risks. G. Zhai (2023) and X. Zhai (2022) note that while AI excels at drafting, it lacks originality, necessitating a deeper understanding of how students critically engage with AI outputs. Additionally, ChatGPT's tendency for factual errors and its lack of a verifiable source trail require students to be trained on how to verify information (Joshi & Barve, 2023). Therefore, while the general utilisation of AI is well-documented, a significant gap remains in understanding its specific application for fostering research and language skills in postgraduate students. This study addresses this by examining how generative AI can be leveraged purposefully within a Research Methodology framework to develop competent researchers.

METHODOLOGY

This section describes the research design, which includes the sampling and data analysis process in detail.

RESEARCH DESIGN

This study adopted the explanatory mixed method methodology, which used quantitative and qualitative approaches. The mixed method design is a method that adopts the strengths of quantitative and qualitative research methods. The quantitative method used a survey questionnaire to collect data, while the qualitative method employed an interview as an instrument. The study adopted an explanatory sequential mixed methods approach. Questionnaires were administered to collect quantitative data, and the findings were used to inform the development and conduct of the qualitative interview phase. The questionnaire was distributed to all 36 students who were enrolled in the Research Methodology course. The students are enrolled in an English Language Studies Program at the Master's (MA) and PhD levels.

RESEARCH INSTRUMENT

A questionnaire, developed based on past studies (Ngo, 2023; Shoufan, 2023; Skjuve et al., 2023; Söderström et al., 2024), was adapted to fit the objectives of the present study. The questionnaires used in these past studies explored the various ways learners engage with these AI tools, including frequency of use, the kind of learning tasks that AI tools help them with, and the learners' perceptions of the benefits and challenges of AI-assisted learning. There are three sections in the questionnaire developed for the present study: (1) Demographic section where participants provided information about their name, age, gender, country of origin, academic level and technological skill; (2) 10 statements in section 2 on the use of ChatGPT to search for materials/literature, and (3) Five statements in section 3 on how participants integrate ChatGPT with the lecturer's teaching. The lecturer's teaching refers to the content of the Research Methodology course and the lecturer's teaching approaches. Additionally, the open-ended questions asked participants to report their frequency of ChatGPT usage and respond to two open-ended questions designed to explore their specific uses and perceived skill level with the tool. Participants ticked the relevant statements

based on a Likert-scale evaluation, ranging from 1 (totally disagree) to 4 (totally agree). To assess the internal consistency of the Likert-scale items, Cronbach's alpha was calculated. The resulting coefficient of 0.84 indicated acceptable reliability, as values closer to 1.0 signify greater internal consistency within the scale.

Interview questions were developed based on the findings from the quantitative phase of the study. Since the questionnaire focused on how generative AI is used to assist students in assisting them with research work, the interview questions were developed to provide information that can provide the researchers with more detailed information about the participants' usage of ChatGPT to find out how ChatGPT has assisted the students in developing research and language skills. Thus, the participants were specifically asked questions about how they used ChatGPT for academic work, focusing on research skills and language skills for the Research Methodology course.

Participants were selected for interviews on a voluntary basis. The interview participants comprised five Master's program students and four doctoral program students. Six questions were formulated, and additional questions were asked during the interview. The interview questions focused on the participants' knowledge about ChatGPT, the role of ChatGPT in academic work (research) and language development.

PARTICIPANTS

The participants targeted for this study were students between the ages of 25 and 42 who were at the time pursuing postgraduate education at a public higher learning institution in Malaysia. This group was chosen in order to focus on a population segment where the impact of AI tools like ChatGPT may have had significant implications for learning experiences, specifically in conducting research work. In total, all 36 students who were enrolled in this Research Methodology course participated in the study; hence, a purposive sampling technique was used. The rationale for this approach was to capture the experiences of the entire cohort (N=36). Furthermore, given that the Master's and PhD students were taught together in the same class, this group constituted the entire accessible population. While the sample size is numerically small, it represents the whole of the target population within this study. This approach aligns with the exploratory nature of the research, which seeks to provide an understanding of how generative AI assists in the development of research proposals rather than aiming for broad statistical generalisation (Creswell & Creswell, 2018).

DATA ANALYSIS

The survey questionnaire data were coded and processed manually because there were only 36 participants involved. Nine participants were interviewed. Since there are 36 participants, interviewing nine participants involved 24% of the population, which, according to Guest et al. (2006), is sufficient. Guest et al. (ibid) additionally suggest that interviews involve between 15% to 30% of the total population. Guest et al (ibid) also found that saturation of themes often occurs within the first 6–12 interviews, especially in homogeneous groups, which implies 15–30% of the sample might be sufficient in some contexts.

The open coding method was used to code the interview questions by labelling phrases and sentences. Words and phrases that appeared and were frequently mentioned by the participants were identified and coded as a theme. Open coding is often referred to as the first stage of

qualitative data analysis, where raw data (such as interview transcripts) is broken down into discrete parts to identify concepts, categories, and themes. Using the open coding process, the researchers in the present study assign labels or "codes" to parts of data that represent meaningful ideas or patterns. This process is exploratory and data-driven, allowing themes to emerge rather than being predefined (Charmaz, 2006). Charmaz (ibid) developed the constructivist grounded theory, in which she re-envisioned open coding as "initial coding." Charmaz argues that researchers are not objective observers but "construct" the codes based on their interactions with the data. Her approach is more flexible to keep the coding grounded in processes rather than static topics.

Example:

What did you use ChatGPT for, with reference to research work for this course?

*ChatGPT gives **guidelines to find information**, but I must give correct instructions.*

*I used ChatGPT for **guidance**. I used a lot for the literature review part, to give some perspective on how to analyse a paper.*

Open code: guidelines and find information

Theme: Guideline

- *ChatGPT gives **guidelines to find information**, but I must give correct instructions.*

RESULTS

Results from the survey questionnaire and interviews are presented in the section that follows.

DEMOGRAPHIC INFORMATION

36 participants were involved in the study, with 31 female (86.11%) and 5 male (13.89%). The participants' ages are between 25 and 42 years old. 17 participants (47.23%) are enrolled in the PhD program, while 19 (52.77%) participants are enrolled in the MA program. The participants come from various countries, with the majority of students from China, which is at 28 (77.77%), 4 are from Malaysia (11.11%), 3 from the Middle East countries (Iraq, Saudi Arabia and Palestine; 8.33%) and 1 from Pakistan (2.77%). Figure 1 below displays the participants' demographic information.

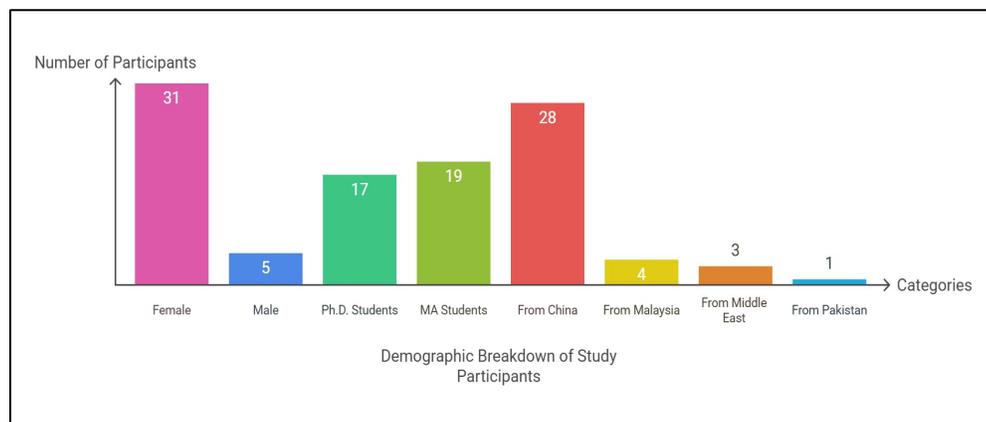


FIGURE 1. Participants' demographic information

QUESTIONNAIRE SURVEY: THE USE OF CHATGPT TO SEARCH FOR REFERENCES

Since this paper focuses on how the participants use to develop their research and language skills, only statements related to these two aspects are presented. Statements 1-5 are about research skills, and statements 6-10 are about language skills. Results from Likert scales 1 and 2 (totally disagree and disagree) are combined, and likewise for Likert scales 3 and 4 (agree and totally agree).

TABLE 1. Results for using ChatGPT for literature review

No	Statements	Agree/Strongly agree	Disagree/strongly disagree
1	ChatGPT helps me generate initial ideas for my literature review.	29 (80.55%)	7 (19.44%)
2	ChatGPT effectively summarises past research articles to support my literature review.	27 (75%)	9 (15%)
3	ChatGPT changes the way I search for information	33 (91.66%)	3 (8.33%)
4	ChatGPT assists me in exploring related concepts	34 (94.44%)	2 (5.55%)
5	ChatGPT assists me in exploring theories	34 (94.44%)	2 (5.55%)
6	ChatGPT helps me to synthesise information from multiple sources.	30 (83.33%)	6 (16.66%)
7	ChatGPT helps me to synthesise information from multiple sources for my literature review	26 (72.22%)	10 (27.77%)
8	ChatGPT is useful to help me formulate the problem statement for my study	31 (86.11%)	5 (13.88%)
9	I learn to formulate follow-up questions to get more information	32 (88.88%)	4 (11.11%)
10	I learn how to integrate several sources of information using ChatGPT	34 (94.44%)	2 (5.55%)

The results indicated that participants have predominantly positive views regarding ChatGPT. Specifically, where research-related tasks are concerned, the highest score was observed for ChatGPT in exploring related concepts and theories, with a score of 34 (94.44%). This was closely followed by participants' perception of how ChatGPT helped them on their information search strategies, scoring 33 (91.66%). For the development of language skills, positive responses were noted for ChatGPT's ability as a tool that can help participants develop more precise questions (32, 88.88%) and how the AI tool helped them rewrite the problem statement for their study (31, 86.11%). The participants also reported utilising ChatGPT for synthesising information from multiple sources, which means that they learned the skills of summarising and paraphrasing, with a score of 30 (83.33%). The lowest, though still positive, was recorded for how ChatGPT helped the participants develop summary writing skills with a score of 26 (72.22%). Figure 2 demonstrates the results with positive views about the use of ChatGPT to search for relevant literature.

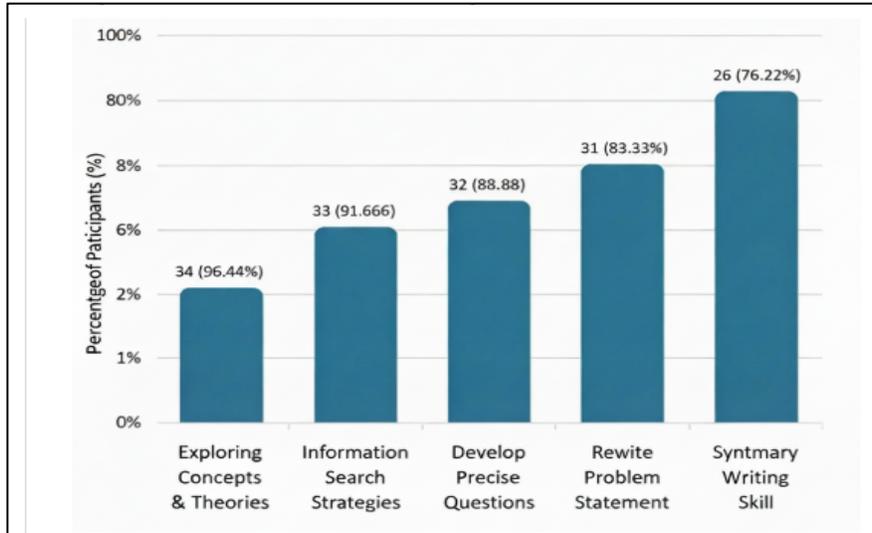


FIGURE 2. Participants' views on ChatGPT's functions as a research-related tool and language skills

While the overall findings indicated positive perceptions of ChatGPT, the dissenting opinions of participants should not be ignored. Specifically, 10 participants (27.77%) did not perceive ChatGPT as a tool that helped them with summary writing, and 9 participants (15%) did not consider ChatGPT as an effective tool for summarising prior research articles. Furthermore, 7 participants (19.44%) reported that ChatGPT was not helpful in generating initial ideas for literature reviews, and 6 participants (16.66%) expressed reservations regarding ChatGPT's ability to synthesise information from multiple sources. Figure 3 shows the result in graph form.

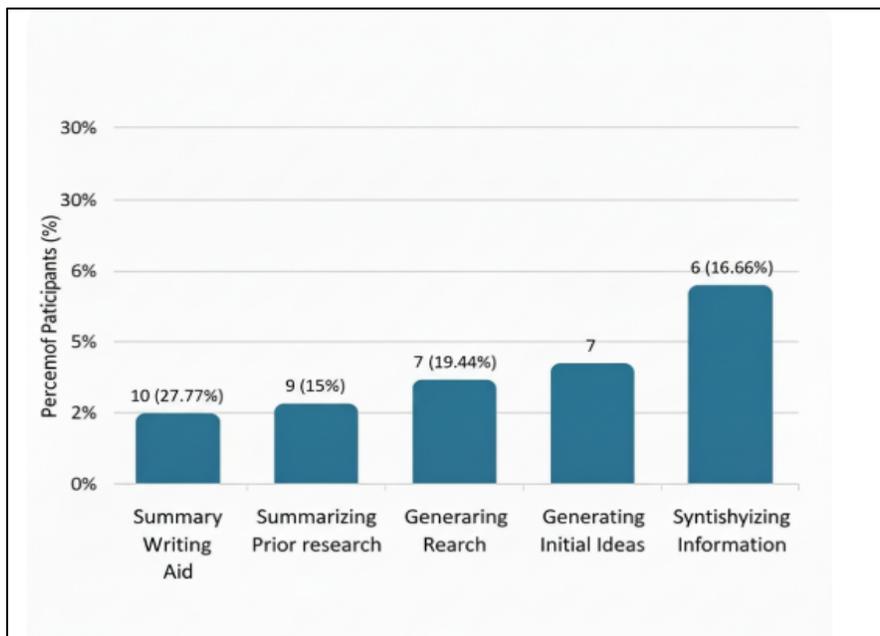


FIGURE 3. Unfavourable opinion about ChatGPT's effectiveness

RESULTS FROM INTERVIEWS

To reiterate, the interview questions used an open coding method to code the responses. Open coding is often referred to as the first stage of qualitative data analysis, where raw data (such as interview transcripts) is broken down into discrete parts to identify concepts, categories, and themes.

Nine students were selected for the interviews, with five students from the Master's in English Language Studies program (MA in ELS), three from the PhD in English Language Studies program (PhD in ELS) and one PhD in Linguistics.

Results from the interviews revealed how ChatGPT helps the participants to improve their language skills. Excerpts from the interview responses are presented along with a discussion in this section.

Interview question 1: What did you use ChatGPT for, with reference to research work for this course?

Theme 1: Guidance

- *ChatGPT provides **guidelines to find information**, but I must give correct instructions.*
- *I used ChatGPT for **guidance**. I used a lot for the literature review part - to give some perspective on how to analyse a paper.*
- *ChatGPT was used to **search** for topics related to my research. It guides me to find topics.*
- *I asked it to **get information** about the conceptual framework*
- *Get **information** about past studies and **search** for topics related to my research*
- *I can get some good **guides**, information and ideas about my topic*

The selected excerpts from responses to interview question 1 revealed that the participants used ChatGPT mainly to get guidance (guidelines for information, literature review, topics, and conceptual framework). This indicates that the participants use ChatGPT not just for content purposes, but are engaged in a process of developing and conceptualising the research, which is pertinent to developing research skills. They prompted the tool for structural guidelines and a relevant literature review.

Interview question 2: Can you tell me specifically how you used ChatGPT for different parts of the research proposal, for example, on the literature review or methodology?

Theme 2: Making inquiry

- *I **ask** [sic] ChatGPT to suggest past study. This helps me a lot because I can save time.*
- *I **ask** [sic] ChatGPT to give some theories for my study, but I have to choose the theories*
- *I **give questions** to ChatGPT to find literature review. I **give** ChatGPT my research topic.*
- *I **ask** [sic] it to suggest conceptual frameworks. Sometimes it gives me the frameworks, sometimes it does not [sic] understand my questions.*
- *ChatGPT can **search** for past studies and theories. It is very useful*
- *I use ChatGPT when I want to **ask questions** about a topic for my study, find literature and find theories*
- *ChatGPT can give information on how to write a research design*
- *I **ask** ChatGPT for the methods to apply*
- *I **ask** ChatGPT to suggest what methods I can use for my research*

The interview excerpts reveal that the participants utilised ChatGPT as a search tool rather than simply to generate data. The data demonstrated that ChatGPT serves as a tool that allows the participants to be involved in an initial discovery phase to a more structured information search for research (find literature review, research topic, conceptual framework, find topic and suggest methods/research design). The data also indicated that the participants make use of the tool to search for relevant theories, which suggests that the students are practising evaluative skills, which can lead them to become better researchers. This process also helps the participants to learn about proposal writing.

Interview question 3: Can you tell me how you use ChatGPT in the research proposal process?

Theme 3: Writing

- I use ChatGPT to show **the research proposal structure**
- ChatGPT, teach me how to **write a format for a proposal**
- I ask ChatGPT to suggest a format for **writing a research paper**
- I use ChatGPT to learn how to **write a research paper**
- I now know I can ask ChatGPT to suggest some **writing for research design**

The interview excerpts indicate that ChatGPT acts as a tool that provides information on how to write and how to format a research proposal. The participants find the process of writing a research proposal challenging because they have not been exposed to or learned in detail the writing process. The use of ChatGPT helps them learn the conventions required to produce a structured research paper within an academic context. Furthermore, writing a research proposal is often a challenging section for novice researchers. Using ChatGPT to explore different research design options allows students to see how various options are articulated in writing.

Interview question 4: Focused on writing and language skills: Does ChatGPT help you to develop or improve your language skills? If yes, can you explain/describe?

- I ask ChatGPT to **summarise** a paper for me. I learn to paraphrase, like use synonyms, use words like ‘in summary’, ‘therefore’, ‘while’.
- I **use it for writing** because it makes sentences shorter, like this sentence (the participant showed the researcher her writing) – *In a study conducted at a higher learning institution in XXX, with over 2000 students, the results show that the students are positive about using technological tools for learning.* The student learned how to paraphrase the sentence by replacing several words with a word and using conjunctions. Paraphrase sentence: *A study in a university in Malaysia found **that the majority of students agree that AI helps in learning.***
- My writing become clearer and shorter. I know how to use similar words to make fewer words. Example: The study used interviews, observations and a survey questionnaire to collect data. "I use *qualitative* for interviews and observations. I use *quantitative* methods for survey questionnaires."
- I **learn words** I can use to show results, additional information, differences, similarities, like *therefore, however, while, moreover, on the other hand* and many more. This makes my writing clearer to my lecturer.
- I learn to **use correct keywords** to find information.
- I get ideas on how to **start writing**, like how to **start a paragraph**, how to **write my opinion**, and how to **make a good sentence**.
- ChatGPT helps me **correct grammar mistakes**.

The interview data show that the participants used ChatGPT as a tool for overcoming the linguistic problems that they have in academic writing. They use the tool to refine their writing from unclear sentences to comprehensible sentences by using correct transitional discourse

markers, synonyms and reducing the number of words to a shorter paragraph. The language skills that the participants developed helped them to write with better syntactic clarity and conciseness, in addition to acquiring vocabulary and cohesive devices. It also contributes to the development of their academic writing skills.

DISCUSSION

To reiterate, this study examines ChatGPT as a learning tool in an academic context, specifically in a Research Methodology course offered to students at the postgraduate level. The students are required to submit a research proposal at the end of the course; hence, a study on how they leverage this technological tool is pertinent to find out their use of the tool and how the tool can be used to assist the students. The findings from the questionnaire and the interviews revealed ChatGPT's pertinent contribution as a tool in academic work.

Overall, the students reported positive views about ChatGPT as a learning tool, as reflected in the interviews about ChatGPT's role as a research tool and a writing tool (summarising, paraphrasing, indicating relationships between research). Results from the questionnaire survey concurred with the interview results. The interview data revealed three main themes, which are guidance, making inquiry and writing. Writing a research proposal is a daunting task for students; therefore, they mostly use ChatGPT in searching for information, such as exploring possible topics, concepts, theories and methodology, as found in studies by Chan and Hu (2023) and Tan (2023). The students seem to use the tool as a preliminary step to work on their research proposal, as the tool can assist them in generating ideas, which aligns with Rahman et al. (2023), who found ChatGPT to be an effective tool in generating initial ideas in academic scientific research. The students also found ChatGPT particularly useful in searching for past studies or for relevant literature, due to its ability to generate texts and summarise information from multiple sources (Derga et al., 2023; Kasumu & Agbarakwa, 2024). The summary of past studies on ChatGPT also revealed that the AI tool enabled students to have an overall picture of past studies on the topic or issue that they intend to research, which consequently assisted them in finding the gap and problem statement of their study (Chauke et al., 2024; Lund et al., 2023;).

Participants identified ChatGPT as an important tool that helped them overcome language problems in academic writing. In addition to using ChatGPT as a search tool, they engaged with it to decode the complexities of the academic writing genre. The interview responses clearly show that ChatGPT significantly helps postgraduate students develop and improve their language skills. Many participants highlighted how using ChatGPT to summarise papers taught them paraphrasing techniques, such as using synonyms and linking words like "therefore" and "while," which enhanced their writing coherence. Others mentioned that ChatGPT helped them write clearer and more concise sentences by reducing wordiness and improving sentence structure. The tool also introduced them to useful academic vocabulary and transitional phrases that made their writing easier to understand. Furthermore, students found ChatGPT useful in selecting correct keywords for research and generating ideas on how to start paragraphs, express opinions, and correct grammar mistakes. Overall, ChatGPT acts as an effective language learning aid, improving clarity, precision, and academic writing skills in ways that benefit students' communication and research abilities. However, they are aware that they have to provide correct and specific prompts to the tool because ChatGPT's ability to adopt a persona is limited based on the prompt it was given and does not exhibit other experiences outside of the prompt (Kristine Estanislao Arcenal et al., 2025).

Vygotsky's Constructivist Theory and Cognitive Load Theory strongly support these findings by explaining how ChatGPT facilitates learning. According to Vygotsky, learners develop skills through social interaction and scaffolding from more knowledgeable others; ChatGPT functions as a virtual 'teacher', guiding students as they explore research concepts, refine language, and structure their writing. This scaffolding helps students move beyond their current abilities by offering real-time feedback and suggestions. Meanwhile, the application of Cognitive Load Theory demonstrated how ChatGPT reduces the mental effort involved in complex tasks like summarising, paraphrasing, and idea generation. For instance, ChatGPT's ability to synthesise multiple sources of information reduces extraneous cognitive load, enabling students to focus more on understanding and critical thinking. Both theories illustrate why students find ChatGPT a valuable technological learning tool, as it scaffolds their learning while managing cognitive demands in an efficient, supportive way.

CONCLUSION

AI will continue to develop in ways that we may not be able to imagine. Technology is and will always be part of our lives, whether for business, personal, academic or any other aspects of life. It is undeniable that ChatGPT provides many academic opportunities for students and lecturers alike. ChatGPT provides a platform for students to search for various information on their academic work by examining different types of information from multiple sources. As educators, we cannot ignore this fact but learn to embrace this technological tool. We also must learn how to adapt it to our teaching and learning process, while keeping in mind the ethical concerns of our responsibility as educators. Thus, it is highly likely that students might find it tempting to use ChatGPT to generate their research proposals, which would neither help them learn nor develop their academic skills as researchers. Therefore, the integration of human instructions and information, and information generated by AI, is best combined to assist students in producing a research proposal written by them and not completely AI-generated.

The participants generally view ChatGPT as a convenient tool for novice researchers like them, but to use ChatGPT effectively, they need to know how to use it properly and effectively in order to get the information that they want (*convenient for researchers, but we have to master the technology*). ChatGPT is seen as a valuable resource to novice researchers who need guidance and information to assist them in their research. As a postgraduate student, they are aware that they should not rely on ChatGPT to do their work. Additionally, the students also found ChatGPT-4's ability to adopt a persona to be limited based on the prompt it was given, and it does not exhibit other experiences outside of the prompt. Instead, they must learn the skills of conducting research and produce an original thesis.

The present study acknowledges its limitation in that it was conducted only with a group of postgraduate students enrolled in a Research Methodology course at a higher learning institution in Selangor, Malaysia. Future research could consider involving a larger population of postgraduate students from various institutions in Selangor and include those enrolled in Academic Writing courses, with a specific focus on academic writing at the postgraduate level.

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