

Effective Prompting Strategies in Utilizing ChatGPT for Final Year Thesis Writing: A Systematic Literature Review

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ABSTRACT

The rise of generative artificial intelligence (AI), particularly ChatGPT, has influenced academic writing in higher education. This study conducted a systematic literature review using the PRISMA framework, analyzing 10 studies published between 2023 and 2025 in Asia, Europe, Africa, and the Middle East. The findings show that structured and context-specific prompting strategies help improve idea generation, proposal organization, and draft refinement processes. The benefits include greater efficiency, creativity, and clarity, while challenges remain regarding academic integrity, over-reliance, and digital literacy. This review concludes that prompting is not only a technical skill but also an academic practice that requires guidance from experts. To maximize its benefits, higher education institutions must integrate AI literacy and prompt design training into their curricula. Universities also need to establish clear institutional policies to ensure the ethical use of ChatGPT in thesis writing. By embedding these practices, academic communities can benefit from the potential of generative AI while safeguarding academic standards and student's independence.

Keywords: ChatGPT; prompt; PRISMA; thesis writing

INTRODUCTION

Since its launch in late 2022, ChatGPT has rapidly become a global phenomenon among academics and students worldwide. As a tool based on generative artificial intelligence, it has changed the way people interact with technology and introduced new challenges for higher education (Dwivedi et al., 2023). Many students now rely on ChatGPT to generate research ideas, paraphrase texts, check grammar, and draft thesis outlines. This trend has sparked wide discussions on the effectiveness, integrity, and ethics of the academic use of generative AI. Within this debate, growing attention has been directed to the role of prompting strategies, which strongly influence the quality of ChatGPT's output and thus directly affect students' writing experiences and academic outcomes (Diyab et al., 2025; Schulhoff et al., 2025).

The development of AI can be traced back to the introduction of the term AI by John McCarthy at the Dartmouth Conference in 1956. Since then, AI has advanced rapidly and has been applied across multiple sectors, including education (Zawacki-Richter et al., 2019). Popular applications such as Google Duplex, FaceApp, and educational robots (Retto, n.d., 2017) highlight the potential of AI in human-machine interaction. In education, early applications began with Computer-Aided Instruction (CAI) and gradually evolved into Intelligent Tutoring Systems (ITS) capable of providing adaptive feedback to learners (Bettayeb et al., 2024; Chassignol et al., 2018; Issaiy et al., 2024).

In higher education, generative AI such as ChatGPT has created new opportunities for academic writing. Students used it for idea development, paraphrasing, grammar checking, and drafting proposals. Prior studies have examined its effectiveness and student perceptions in various contexts, including Indonesia, South Africa, India, and Ghana (Tlili et al., 2023; Wang & Fan, 2025). However, most of these studies focused on the general use of ChatGPT in writing rather than on the specific strategies needed to maximize outcomes. Yet, the quality of ChatGPT's responses is largely

shaped by the quality of prompts designed by users (Lee & Palmer, 2025; Mahbub & Nuha, n.d.; Zhai, 2022). In the Indonesian context, studies highlight both the opportunities and ethical challenges of AI adoption in higher education while also showing that students' digital literacy and critical attitudes toward AI play a decisive role in determining how effectively they can use ChatGPT in academic settings (Erna Widyasari et al., 2024; Selasih, 2024).

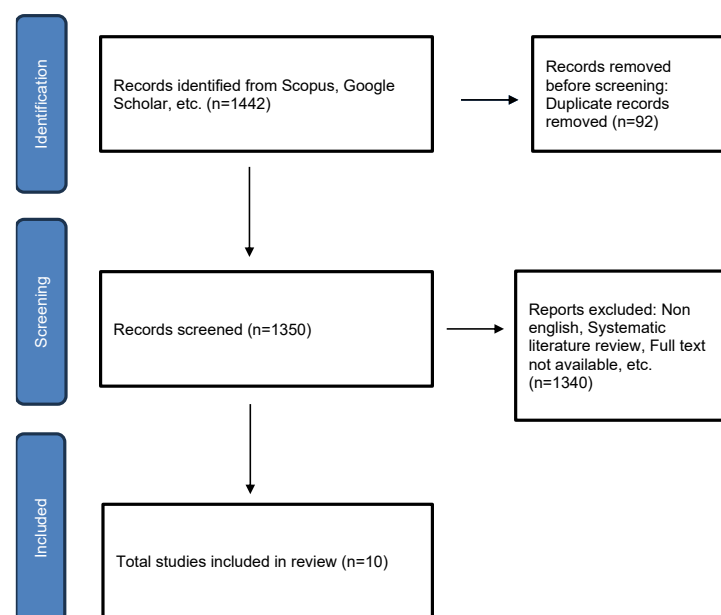
The existing literature shows that research on AI in education has mostly emphasized issues of ethics, plagiarism and academic integrity (Abbas et al., 2024; Popenici & Kerr, 2017; Wood et al., 2023). Few studies, however, have directly investigated effective prompting strategies in the context of thesis or dissertation writing. This represents a significant gap, as without an adequate understanding of prompting, students risk generating inaccurate content or violating academic ethics (Triyanti et al., 2024). To address this gap, this study aims to conduct a systematic literature review based on the PRISMA protocol, identify effective prompting strategies used by students and supervisors, and present practical implications for students, supervisors, and institutions in managing the ethical and productive use of ChatGPT in thesis writing. AI in education signals a paradigm shift. ChatGPT is not only a helper but also a disruptor. Unlike simple grammar checkers, it can generate long and complex texts. This ability blurs the line between student authorship and AI support. Prompting becomes a key practice that connects student creativity with AI capability.

METHODS

This research adopts a library-based study in the form of a systematic literature review, designed and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. PRISMA ensures that the process of searching, screening, and reporting findings is systematic, comprehensive, and transparent (Page et al., 2021). Literature searches were conducted across leading academic databases to identify empirical studies, case reports, and conceptual analyses relevant to prompting strategies and ChatGPT or generative AI in thesis or dissertation writing. The databases searched included PubMed, Scopus, and Google Scholar. The flow of the literature selection is presented in Figure 1.

Figure 1

Systematic Literature Review Flowchart



To strengthen validity, backward and forward citation searches were also used. This helped identify works not captured in the initial query. Two reviewers extracted data independently and resolved differences through discussion. A coding scheme was tested on a small set of studies before full analysis. This improved reliability and reduced bias.

Identification

The search process covered PubMed, Scopus and Google Scholar using two sets of keywords. The first set was related to technology (ChatGPT, generative AI and prompt engineering). The second set was linked to academic contexts (thesis writing, dissertation writing, final-year project and research proposal).

Screening

The initial search produced 1.442 potentially relevant articles. After removing 92 duplicates, 1.350 articles proceeded to screening. Titles and abstracts were examined against the inclusion and exclusion criteria, and irrelevant studies were excluded.

Inclusion and Exclusion Criteria

The inclusion criteria were peer-reviewed journal articles published between 2022-2025, written in English, and based on empirical methods. Only studies that explicitly discussed the use of ChatGPT or large language models (LLMs) in thesis, dissertation, final-year projects, or research proposal writing were included. Moreover, the articles had to address prompting strategies or forms of interaction between students or supervisors and ChatGPT in academic writing.

Table 1

Inclusion and Exclusion Criteria

Inclusion	Exclusion
Peer-reviewed academic journal articles published between 2022-2025	Articles published before 2022
Scholarly articles that have undergone a Peer-reviewed process	Non-peer-reviewed literature
Articles written in English	Articles written in languages other than English
Empirical studies addressing the use of ChatGPT in thesis, dissertation, final year project, or research proposal writing	Theses, dissertations, final year projects without full text
Articles explicitly discussing prompting strategies or interactions between students/supervisors and ChatGPT in final year academic writing	English language articles focusing only on general academic writing without specific relation to thesis writing or prompting strategies

Eligibility and Final Inclusion

From 1.350 screened articles, most were excluded for not meeting the inclusion criteria. At the eligibility stage, 10 articles met all the criteria and were included for further analysis.

Data analysis

Data from the included studies were extracted into a table covering: the author and year, title, research purpose, method, type, and context. To summarize the evidence, a thematic analysis was conducted, focusing on identifying how prompting was applied, the benefits it provided, and the challenges it posed for academic writing. The analysis was conducted in the following stages:

1. Careful reading and re-reading of each article to gain familiarity with the data
2. Generating initial codes from relevant excerpts

3. Grouping the codes into broader themes reflected the study findings: opportunities, benefits, and challenges
4. Reviewing the themes against the dataset to ensure consistency and accuracy
5. Refining and naming the final themes to reflect the contribution of prompting strategies to thesis writing
6. An analytical report was developed that connected the themes with the research questions and highlighted practical implications for students, supervisors, and higher education institutions.

RESULTS AND DISCUSSION

This section presents the findings of a systematic review of effective prompting strategies for using ChatGPT for thesis writing. The reviewed studies collectively demonstrate that prompting has evolved from a simple interactional skill into a pedagogical, cognitive, and cultural practice shaping how students engage with generative AI in academic contexts. One common finding was the value of iteration. Students who refined prompts step by step achieved better results than those who used one-shot prompts. Prompting also showed cultural variation. In collectivist settings like Indonesia and China, prompts often took collaborative forms, while in Western contexts they reflected individual exploration.

The methodological approaches varied, including qualitative studies (case studies, interviews, autoethnography), quantitative surveys, and conceptual/editorial analyses. Across these methods, prompting emerged as a recurring theme, explicitly studied as a skill or implicitly as a part of idea generation and structuring. Here is a summary of the reviewed articles on prompting strategies in ChatGPT for thesis writing.

Table 2

Reviewed Articles

Year	Author(s)	Title	Research Purpose	Method	Type	Context
2025	Joranger et al.	Evaluating a Large Language Model's Ability to Synthesize Health Science Master's Thesis	Examine a capability to generate full thesis	LLM Case study (qual & quant)	Journal	Developed country (Norway)
2025	Ren et al.	Navigating Cognitive Dissonance: Master's Students' Experiences with ChatGPT in Dissertation Writing	Explore students' psychological conflicts in using ChatGPT	Grounded theory (28 interviews)	Journal	Developing country (China)
2024	Triyanti et al.	Exploring Students' Experiences in Writing Thesis Proposal with ChatGPT	Investigate ChatGPT support in thesis proposal writing	R&D qualitative (interviews)	Journal	Developing country (Indonesia)
2023	Schwenke et al.	Potentials and Challenges of Chatbot-Supported Thesis Writing: An Autoethnography	Explore potentials and limits of ChatGPT in thesis writing	Autoethnography	Journal	Developed country (Germany)
2025	Bani Amer et al.	Exploring ChatGPT as a Tool for Thesis Writing: Perspectives of EFL Supervisors	Examine supervisors' views on ChatGPT in EFL contexts	Quantitative survey (47 supervisors)	Journal	Developing country (Jordan)
2024	Rababah et al.	Graduate Students' ChatGPT Experience and Perspectives during Thesis Writing	Analyze students' perceptions of ChatGPT in thesis writing	Quantitative survey (80 students)	Journal	Developing country (Jordan)

Year	Author(s)	Title	Research Purpose	Method	Type	Context
2023	Anik et al.	Embracing AI Assistants: Young Researchers' Journey with ChatGPT in Science Education Thesis Writing	Investigate young researchers' use of ChatGPT in thesis writing	Case study (semi-structured questionnaire)	Journal	Developing country (Bangladesh)
2023	Cronjé	Exploring the Role of ChatGPT as a Peer Coach for Developing Research Proposals	Assess ChatGPT as peer coaching tool for research proposals	Desk study (GROW framework)	Conference paper	Developing country (South Africa)
2023	O'Leary	Using Large Language Models to Write Theses and Dissertations	Discuss ethical implications of LLM in thesis writing	Editorial / opinion	Journal	Developed countries (UK/USA)
2025	Winarti et al.	Exploring EFL Students' Attitudes of AI as a Tool for Writing English Thesis Proposals	Examine students' attitudes and risks of dependency	Descriptive qualitative (survey & interview)	Journal	Developing country (Indonesia)

Beyond individual study characteristics, it is also important to observe broader publication trends and authorship patterns. Table 3 presents the distribution of first authors' countries, highlighting the geographical diversity of research contributions, while figure 1 outlines the yearly distribution of publications to capture the temporal growth of this field. These data provide a quantitative foundation for understanding the global scope and developmental trajectory of ChatGPT's related research in academic writing.

Table 3.

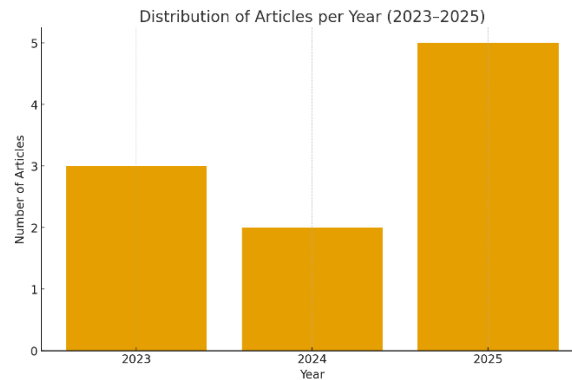
Distribution of First Authors' Country

Country	Number of Articles
Indonesia	2
Norway	1
China	1
Germany	1
Australia	1
Jordan	1
Bangladesh	1
South Africa	1
United States	1

This figure visualizes the geographical distribution of first authors' countries. The data reveal that Asia dominates the field, led by Indonesia, China, Jordan, and Bangladesh, which collectively contribute over half of the reviewed studies. This concentration highlights how developing countries are not merely consumers of AI technology but active participants in shaping pedagogical practices around it. European contributions, notably from Norway and Germany, tend to focus on ethical frameworks and automation in academic supervision, while United States and Australia emphasize professional development and instructional design. The presence of research from Africa adding perspectives from African higher education contexts.

Figure 2.

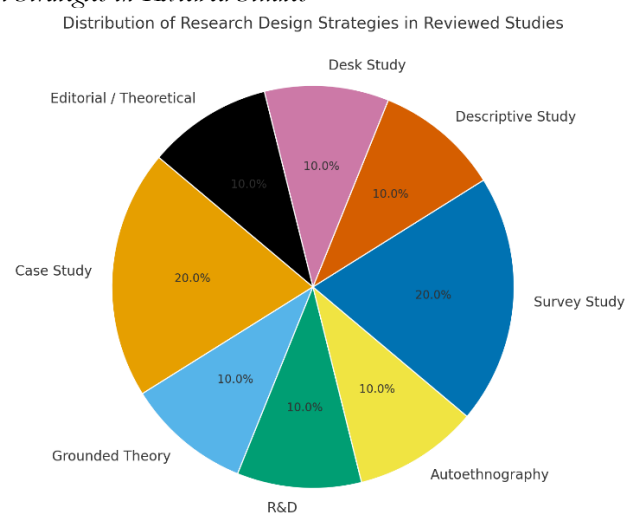
Distribution of Articles Yearly



The figure illustrates the yearly distribution of the reviewed articles, showing a modest yet consistent growth in scholarly attention toward ChatGPT prompting in thesis writing. The year 2023 marked the initial emergence of research interest, with three pioneering studies that explored foundational potential and ethical implications of using AI in academic writing. In 2024, the number slightly decreased to two publications, suggesting a transitional phase as researchers refined methodological approaches and identified more focused problem areas. By 2025, the number rose sharply to five articles, indicating that ChatGPT prompting had evolved into a distinct and legitimate research topic within higher education and applied linguistics. This upward trajectory signifies an increasing global acknowledgement of prompting as a critical component of digital academic literacy. While the number of publications has steadily increased, variations in research design reveal the different ways scholars have sought to understand the educational implications of ChatGPT use in thesis writing. Figure 2 displays the distribution of research design strategies used in the reviewed studies, illustrating the methodological diversity among scholars investigating ChatGPT-assisted thesis writing.

Figure 3

Distribution of Research Design Strategies in Reviewed Studies



The reviewed articles employed a wide range of research designs, reflecting the evolving methodological landscape of ChatGPT's related studies. Two studies (Joranger et al., 2025; Anik et al., 2023) adopted a case study approach, emphasizing detailed contextual analysis of individual or group experiences in using ChatGPT for thesis writing. Similarly, two studies (Amer et al., 2025; Rababah et al., 2024) implemented survey designs, focusing on measuring attitudes and perceptions among students and supervisors in diverse educational contexts. The grounded theory study by Ren et al. (2025) sought to construct theoretical insights from interview data, while Triyanti et al. (2024) utilized an R&D approach to explore and develop instructional models integrating ChatGPT support. Schwenke et al. (2023) adopted autoethnography, highlighting personal reflections on the researcher's own interaction with AI tools in thesis writing, whereas Winarti et al. (2025) used a descriptive qualitative approach to portray students' attitudes and dependency risks. Cronje (2023) applied a desk study framework using the GROW model to conceptualize ChatGPT as a peer coach, and O'Leary (2023) contributed a theoretical editorial, discussing ethical dimensions rather than conducting empirical analysis.

The dominance of case study and survey designs (each representing 20% of all studies) suggests that researchers are still in the exploratory phase of understanding this phenomenon. They appear to be balancing the pursuit of in-depth qualitative insights with efforts to obtain measurable quantitative trends. The relatively limited use of experimental or longitudinal methods indicates that the field remains descriptive and interpretive, reflecting its current developmental stage in educational and linguistic research.

Opportunities in Prompting

The review identified several opportunities for using prompting strategies for thesis writing. Cronje (2023) showed that prompts can position ChatGPT as a peer trainer. Well-framed questions guide the system to provide accurate and constructive feedback. This role is valuable because it encourages the mentoring process that students expect from supervisors. Triyanti et al. (2024) discovered that prompting supports idea generation and helps students organize the structure of their proposals. The process acts like scaffolding, where guidance is offered step-by-step until students become more confident in forming their work.

Joranger et al. (2025) demonstrated another opportunity by showing how effective prompting allows ChatGPT to synthesize complex materials into coherent drafts. Students frequently struggle to manage large volumes of literature, and carefully designed prompts help reduce this difficulty. Through prompts, ChatGPT can organize scattered information into summaries and outlines that are easier to further refine. Together, these studies illustrate the prompt as a gateway to better academic support. It encourages clearer content development, more systematic organization, and a smoother path toward completing the thesis writing.

Benefits of Prompting

Beyond opportunities, prompting strategies provide concrete benefits to students' academic writing. Schwenke et al. (2023) depicted how iterative prompting supports brainstorming and revision, allowing students to efficiently refine their drafts. Anik et al. (2023) further stated that prompting helped clarify methodological explanations, enabling young researchers to articulate their research designs with greater precision. Rababah et al. (2024) discovered that prompts also reduced writing anxiety and increased students' confidence, as ChatGPT offered timely linguistic and structural support during the thesis writing process. These findings suggest that prompts increase productivity and clarity. It also reduces psychological barriers in academic writing.

The reviewed studies also point to the wider academic benefits. Prompting increases productivity by helping students break complex tasks into smaller, more manageable steps. It improves clarity by guiding ChatGPT to produce focused and relevant responses. It reduces psychological barriers because students no longer feel isolated when they experience writing difficulties. Instead, they gain a sense of partnership with the tool, which keeps them inspired throughout the writing

process. These combined effects suggest that prompting can transform ChatGPT from a passive tool into an active learning partner that strengthens both the process and product of thesis writing.

Challenges in Prompting

Despite its potential, prompting presents significant challenges. Ethical risks were raised by O'Leary (2023). He argued that prompting could enable unsanctioned thesis generation and blur the boundaries of authorship. As a result, uncertainty is created about who should be credited for the work, the student or the machine. The need for universities to set clear policies was highlighted by such risks, particularly to define acceptable practices when generative AI is used in academic writing.

Ren et al. (2025) highlighted another challenge, namely cognitive dissonance among students. Conflicted feelings were experienced by many when AI prompts were used, as efficiency was difficult to balance with established norms of academic integrity. While the practical benefits of ChatGPT were recognized, students also questioned whether originality and independent scholarship could remain compatible with heavy reliance on AI. Feelings of guilt, doubt, and reduced academic confidence were often produced by this tension.

In the EFL context, Amer et al. (2025) observed that supervisors worry about reduced student autonomy. It was feared that independent thinking would be weakened by repeated use of prompts, since students could depend on ChatGPT rather than construct their own reasoning. Winarti and Kholid (2025) further noted risks of dependency and plagiarism, as students may overuse ChatGPT for organization and content creation. These issues highlight the importance of balancing AI assistance with ethics, autonomy, and critical oversight. Without such a balance, prompting may shift from a helpful aid to a source of academic vulnerability.

Prompting strategies in academic writing present opportunities and risks. When applied effectively, scaffolding is provided to help students generate ideas, structure arguments, and refine content. Lower writing anxiety, improved language quality, and sustained motivation throughout thesis writing are also supported by such strategies. At the same time, concerns related to integrity, dependence on automated outputs, and ethical dilemmas of authorship and originality are raised by this practice.

To address these complexities, AI literacy must be strengthened by integrating prompt design into academic skill building in future research and educational practice. Transparent documentation of prompting processes should be encouraged so that accountability and academic standards are upheld. In addition, clear definitions of acceptable prompting boundaries in thesis writing must be established by institutional policies, ensuring that learning is supported rather than undermined by the use of ChatGPT.

CONCLUSION

This systematic literature review examined effective prompting strategies for using ChatGPT for final-year thesis writing. Ten studies published between 2023 and 2025 were analyzed in diverse educational contexts in Asia, Europe, Africa, and the Middle East. The findings highlight that the writing process of students can be significantly enhanced by structured, interactive, and context-specific prompts. Prompts were shown to support idea generation, help organize proposals, clarify methodological explanations, and refine drafts into more coherent and polished output. These results confirm that prompting should be seen not as peripheral but as central to the academic use of ChatGPT. Greater efficiency, more creative exploration of ideas, higher clarity of language, and lower levels of writing anxiety are offered as clear benefits to students by such strategies.

At the same time, the review emphasizes that prompting is having some risks. The challenges include academic integrity, plagiarism, and the potential for overreliance on AI generated content. Students with limited digital literacy or low confidence in academic were found to be more vulnerable to using ChatGPT, either by depending on it excessively or by failing to critically evaluate its outputs. Concerns were also expressed by supervisors that reliance on prompting could reduce student autonomy and weaken independent critical thinking. The importance of treating AI as support rather

than substitution for student effort is therefore highlighted by these challenges. Without such a balance, the promise of ChatGPT may be overshadowed by risks that weaken both academic quality and ethics.

Concrete actions are pointed out by the implications of this study for higher education institutions. AI literacy and prompt design training should be embedded into curricula so that students understand not only how to use ChatGPT effectively but also how to do so ethically. Universities must develop clear institutional policies to safeguard academic integrity and establish transparent guidelines for acceptable use. For future research, more empirical studies are needed to investigate prompting strategies in different cultural and disciplinary contexts, along with longitudinal studies to examine long-term impacts on academic independence. By addressing these gaps, the academic community can fully harness the potential of generative AI while ensuring responsible and ethical integration into thesis writing. Prompting should therefore be understood as both a skill to be taught and a practice to be regulated bridging human creativity with machine intelligence in a way that enhances learning rather than replacing it.

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