

CHAPTER 2

LITERATURE REVIEW

A. Theoretical Framework

1. Academic Writing

Academic writing is an important skill in higher education that is used to convey ideas systematically and responsibly. Akkaya and Aydin (2018), explained that academic writing is the part of the academic research process where people share their thoughts, observations, applications, and other stuff related to solving scientific problems they have identified. Additionally, based on Wirantaka (2016), academic writing is writing for academic purposes such as paper, journal article, thesis, and dissertation. This form of writing emphasizes clarity, precision, and systematic organization of ideas ensuring that the intended message is effectively communicated with the reader.

Unlike everyday writing, academic writing follows certain conventions that make it formal and structured. As noted by Aldabbus and Almansouri, (2022), academic writing differs from everyday writing because it has a specific format, contains more academic words and complex sentences, and its arguments must be developed logically. Developing academic writing skills involves mastering unique methods and techniques that ensure the originality and validity of the work throughout the process. This includes the proper use of sources, citation styles, and adherence to academic integrity. The purpose of academic writing extends beyond presenting opinions, it aims to solve problems through data-driven analysis and evidence-based reasoning (Utami & Winarni, 2023). The process of academic writing typically consists of five key stages (Dewi, 2021):

- a. Pre-writing: This stage involves brainstorming, researching, and outlining ideas.
- b. Drafting: In this phase, writers produce the first draft of their work, focusing on articulating their thoughts without worrying excessively about grammar or style.

- c. **Revising:** After completing the draft, writers review their work for content and structure. They may reorganize paragraphs, add new information, or remove sections that do not contribute to their main argument.
- d. **Editing:** This stage involves correcting grammatical errors, punctuation, and spelling. Writers ensure that their writing adheres to the appropriate academic style and formatting guidelines.
- e. **Publishing:** The final stage is sharing the completed work with others, which may involve submitting it for publication or presenting it in an academic setting.

In the academic writing process, each stage has an important role in producing a well-structured written work. However, this research focuses on the prewriting stage, especially on the brainstorming activity. Although the prewriting stage includes several activities such as brainstorming, researching, and outlining, this study highlights how ChatGPT helps students in the brainstorming process when they start developing initial ideas before moving to the next stage. Based on Wirantaka (2016), brainstorming is the initial step of writing and it is an idea collecting technique which functions as the organizer of thinking and idea collector. Furthermore, Wirantaka (2016), also said that brainstorming allows the writer to collect any possible ideas for the paragraph, which are subsequently sorted and organized. This process is important because it can help students generate relevant ideas, identify important points, and create an outline that guides the overall structure of their academic writing. In this context, ChatGPT helps to facilitate this process by providing prompts, suggesting related ideas, and assisting students in organizing their ideas before they begin drafting. This is in line with the focus of this research, which investigates how students perceive ChatGPT as a tool for organizing ideas in academic writing.

2. Organizing Ideas

Organizing ideas is closely related to the academic writing process. Based on Gomwalk et al. (2023), organizing ideas includes grouping related ideas into one theme, then arranging them in a clear order, so that they are easy for the

reader to understand. A well-structured text helps the writer communicate their message effectively, making it easier for readers to follow the intended meaning. Without clear organization, the writing can cause confusion and misunderstanding, reducing its impact. Clear organization here refers to an arrangement of ideas that is structured, logical, and easy to understand. A piece of writing with a clear structure will have an orderly flow, where each idea is arranged systematically and forms a coherent relationship between paragraphs and arguments.

Concerning the writing process, organizing ideas begins during the pre-writing stage especially in brainstorming activity. This stage is essential since it allows the writer to collect any possible ideas for the paragraph, which are subsequently sorted and organized (Wirantaka, 2016). In this context, ChatGPT aids students in presenting their ideas clearly and logically, enhancing the effectiveness of their academic writing.

3. ChatGPT

Artificial intelligence (AI) has experienced significant growth over the past few decades, influencing various aspects of society, including education, business, and healthcare (Chellappa & Luximon, 2024). One of the formidable AI-driven chatbots is ChatGPT. ChatGPT, developed by OpenAI, is an advanced natural language processing (NLP) system. Its primary function is to create conversations that resemble human interaction by interpreting the context of discussions and generating relevant, coherent responses (Deng & Lin, 2023). Technically, ChatGPT relies on deep learning algorithms to facilitate natural language interactions between humans and machines, enabling smooth and coherent discussions (Javaid et al., 2023). This capability makes it a valuable tool for both everyday communication and professional writing tasks.

Since its public release in November 2022, ChatGPT has gained substantial attention from educational institutions, which are exploring ways of adapting to this new technological development (Meron & Araci, 2023). In the context of organizing ideas, ChatGPT can help students organize and generate new ideas

by suggesting topics, themes, and perspectives they have never considered before (Imran & Almusharraf, 2023).

ChatGPT provides various features that can be used. One of the unique features of ChatGPT is its ability to generate conditional text based on input commands given by users (Sallam, 2023). With this feature, students can ask various questions and ChatGPT is able to generate complete responses that are in accordance with the requested context. This makes ChatGPT a flexible and useful tool in supporting the academic writing process. Moreover, ChatGPT's ability to generate language and understand human context makes it valuable in academic writing (Raheem et al., 2023). ChatGPT serves as an invaluable writing assistant by providing quick responses and assisting in the brainstorming process. Students can interact with this technology, convey their ideas, and receive contextually relevant suggestions to develop their topics (Bhatia, 2023). Furthermore, Bhatia (2023) asserts that this real-time collaboration helps overcome writer's block and encourages creativity. This function is crucial in the early stages of writing, when students often struggle to formulate initial ideas or determine the direction of their writing. By providing suggestions, creating outlines, or rephrasing complex sentences, ChatGPT provides cognitive support that helps students build momentum in their writing process. This level of support is especially useful for students who experience anxiety or lack confidence when starting to write.

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4. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is widely recognized framework for understanding technology acceptance. Two key components of TAM, perceived usefulness (PU) and perceived ease of use (PEU), are fundamental components that influence the acceptance and integration of learning technology (Yilmaz et al., 2023). Moreover, it has been observed that learners' perceptions of usefulness and ease of use have a positive influence their satisfaction with the learning process, thereby contributing to positive intention to continue using the technology (Granic & Marangunic, 2019). At the

end, these perceptions determine the extent to which users are willing to adopt, rely on, and integrate the technology into their academic practices.

In this study, the Technology Acceptance Model (TAM 1), developed by Davis (1989), is used to understand how university students adopt and use ChatGPT as a tool to help organize ideas in academic writing. TAM 1 emphasizes two key components that influence technology acceptance: perceived usefulness (PU) and perceived ease of use (PEU) (Lai, 2017). These concepts will help explain how ChatGPT is utilized and accepted by students to address challenges in academic writing, particularly in organizing ideas.

Perceived usefulness is defined as the degree to which an individual believes that using a particular technology will enhance their performance (Venkatesh & Davis, 2000). In the context of this study, PU reflects students' belief that ChatGPT can help them organize ideas more efficiently and produce structured academic writing. With the assistance of ChatGPT, students are expected to clarify unclear ideas and develop more coherent texts. For instance, students struggling to organize their thoughts can use ChatGPT to generate an essay outline or formulate stronger arguments. This aligns with findings suggesting that AI-based tools can enhance productivity and facilitate learning more effectively.

Perceived ease of use reflects the extent to which an individual believes that a technology can be adopted with minimal effort or difficulty (Na et al., 2022). In this study, perceived ease of use refers to students' views that ChatGPT is easy to access, understand, and integrate into their academic writing process. ChatGPT not only offers a user-friendly interface but also provides quick and relevant responses that help students organize, develop, and refine their ideas effectively. Its real-time interaction and immediate feedback make it a practical and convenient tool in academic settings. People are more willing to use technology if they believe that it will improve their learning process (Dahri et al., 2024). This ease of use plays a crucial role in technology acceptance, the simpler the technology, the more likely it is to be adopted over time. Students who find ChatGPT easy to use are more inclined to rely on it frequently for

academic tasks, which in turn reinforces their perception of the tool's usefulness (PU).

These two key components Perceived Usefulness and Perceived Ease of Use are applied to understand students perceive ChatGPT as a tool for organizing their ideas during academic writing. By directly linking Perceived Usefulness (PU) and Perceived Ease of Use (PEU) to students' experiences, TAM allows for a deeper understanding of the role of ChatGPT in organizing ideas. Through TAM, this study aims to understand how students' perceptions of ChatGPT as a tool for organizing ideas in academic writing. These perceptions are evaluated through two main aspects of TAM, Perceived Usefulness (how useful students find ChatGPT in helping them organize their ideas) and Perceived Ease of Use (how it is easy for them to use ChatGPT). TAM serves as a framework to identify how these perceptions influence students' acceptance and use of ChatGPT in the context of academic writing.

B. Studies of Relevant Research

Several recent studies have explored the use of ChatGPT as a writing assistant among students, providing valuable insights into their perceptions and experiences. For instance, Bibi and Atta (2024) conducted research to understand student engagement with ChatGPT, focusing on their views, experiences, and satisfaction regarding the tool. The findings revealed a generally positive opinion about using ChatGPT as a writing aid, with students feeling supported in various aspects of the writing process, from idea generation to sentence structuring.

Additionally, Herda et al. (2024) investigated student perceptions of ChatGPT in academic writing, particularly within the context of English as a Foreign Language (EFL). The study involved 334 respondents from Indonesia and the Philippines, utilizing closed questionnaires to gather data. Results indicated that students appreciated the integration of ChatGPT in their academic writing, noting improvements in confidence, reduced stress, and enhanced writing quality, which ultimately led to greater satisfaction with their writing outcomes. This research highlights ChatGPT's positive contribution to facilitating a better understanding of complex topics and suggesting relevant sources.

Hidayat and Sujarwati (2024) also analyzed English Education students' perspectives on ChatGPT, using qualitative methods and questionnaires to gain insights into students' attitudes toward AI in academic writing. The findings demonstrated a favorable attitude towards ChatGPT, with students acknowledging its ability to improve grammar, sentence structure, word modification, and idea development. These studies explain how ChatGPT is generally used in academic writing, such as correcting grammar, sentence structure, and word modification. Meanwhile, this research focuses on examining ChatGPT's role as a tool for organizing ideas in academic writing. This includes an exploration of how ChatGPT helps students create an outline and determine key points that will guide the overall structure of the text.