

CHAPTER 1

INTRODUCTION

This chapter presents a description of the study. In this chapter, the background of the study and formulation of the problem will be explored to provide insight into the context and urgency of the issue under study. Following this, operational definitions, the aim of the research and its significance will be discussed, thus clarifying the research objectives and the benefits derived from this study.

A. Background of the Study

Artificial Intelligence (AI) represents a significant technological advancement in computer science. It is designed to simulate human intelligence processes through sophisticated algorithms and machine learning capabilities (Russell & Norvig, 2003). AI systems can process natural language, recognize patterns, learn from data, and make decisions based on complex algorithms. While AI offers numerous benefits such as increased efficiency, automated task completion, and enhanced data analysis capabilities, it also presents challenges including potential bias in algorithms, privacy concerns, and questions about the reliability of AI-generated content.

In education, AI has transformative potential. AI can provide personalised learning experiences, automate administrative tasks, and facilitate access to information. In particular, AI tools can support students' academic writing by providing advice on structure, grammar, and style. Research shows that AI-based educational tools can significantly improve students' writing ability by enhancing clarity and organisation (Kim & Kim, 2022; Krajka & Olszak, 2024). However, the use of these tools raises concerns regarding academic integrity and critical thinking skills (Habibah, 2024).

Perplexity AI, developed by Perplexity Labs in 2022, is drawing attention as a specialised AI tool for academic research and writing. Tools such as Perplexity AI that provide real-time academic support and guidance offer unique benefits and

challenges, making them an attractive focus for research in educational settings. Unlike general-purpose AI chatbots, Perplexity AI focuses on providing accurate information supported by citations and assisting users in their academic writing tasks through real-time feedback and suggestions.

There is a phenomenon in one of the universities in Tasikmalaya. Based on researcher's preliminary observation, the use of AI has significantly shown in English education students, particularly in their academic writing projects. The students mostly use an AI namely Perplexity as it can help them in organizing ideas and brainstorming in the academic writing course. The researcher found that the Perplexity has been helping students in various needs or problems. Therefore, the researcher interested to find out the students' perception towards the Perplexity AI used in the academic writing course, particularly how the Perplexity features help the students organize and elaborate their ideas in the academic writing process.

However, the integration of AI into academic writing also has some challenges and drawbacks. A major concern is hyperbolic dependency, where students may hyperbolically rely on the results obtained by AI, potentially reducing their critical and analytical abilities. Another issue is the risk of ethical violations, such as plagiarism, where users may submit content obtained by AI without proper acknowledgement. In addition, AI augmented sensing is not always accurate and can sometimes provide incorrect or biased results, resulting in misinformation or incorrect arguments in students' work. Accessibility and portability barriers further compound these challenges, as not all students have equal access to high-quality AI tools. Despite these drawbacks, the role of AI in academic writing is a promising area to explore.

Recent research conducted by Habibah (2024) shows that students are increasingly relying on AI tools such as Perplexity to support their academic writing, with benefits such as increased efficiency and improved writing quality. However, this increased reliance also raises concerns regarding students' academic integrity, development of critical thinking, and research reliability. More existing research has broadly investigated the general impact of AI in education (Chea & Xiao, 2024), but how specific tools such as Perplexity AI impact specifically on

academic writing processes and outcomes. Smith (2024) documented significant improvements in research efficiency, noting that students using Perplexity AI completed their literature reviews 40% faster than those using traditional methods.

Although previous research has extensively investigated the role of AI, there is limited research that specifically focuses on Perplexity AI and its application in academic writing. There is still a clear gap in understanding its impact on students. Therefore, this research aims to address this gap by investigating students' experiences and perceptions of Perplexity AI in the context of academic writing.

B. Formulation of the Problems

The research question of this study is “What are the benefits and drawbacks of using Perplexity AI in academic writing among university students?”

C. Operational Definitions

- 1. Students' perception** : Student perception refers to students' subjective views, experiences, and assessments regarding the use of Perplexity AI in academic writing. It includes aspects such as ease of use, benefits, and challenges perceived during the academic writing process using AI.
- 2. Perplexity AI** : Perplexity AI is an artificial intelligence-based research assistant developed by Perplexity Labs, launching in 2022. The system is specifically designed for academic & research purposes, offering features such as real-time news search, fact-checking, and citation generation. In this research, Perplexity AI facilitates students by providing credible informations, help shape argument structures, reference search, time efficiency, advance

mode in research writings, and summarizing features.

- 3. Academic writing** : In this study, academic writing is a type of writing used to communicate research findings, ideas, and arguments in an academic setting. Academic writing is characterised by a formal tone, factual language, and adherence to certain conventions and guidelines. In this study, the term ‘academic writing’ refers to the writing tasks that students complete as part of their coursework, such as essays and thesis.

D. Aim of the Study

This research aims to explore students’ perceptions of the use of perplexity AI in academic writing.

E. Significance of the Study

1. Practical use

On a practical level, this research provides insights to educators and academic institutions on how Perplexity AI can be used in academic writing environments to support students. By understanding students' perceived benefits and drawbacks, educators can make informed decisions regarding the adoption and implementation of AI tools for writing purposes. These insights can help educators identify students' unique support needs when using these technologies, enabling more targeted training, resource allocation, and integration strategies within academic programmes.