CHAPTER 1

INTRODUCTION

1.1   Background of the Research

Technological developments in education have been one of the key factors in the transformation of learning and teaching around the world. In recent years, these advancements have not only increased the accessibility of education but also enriched students' learning experiences through various innovations. One technological innovation that is increasingly gaining attention is the use of artificial intelligence (AI) applications in learning (AI; Bonk & Wiley, 2020 as cited in Celik, Dindar, Muukkonen, & Jarvela, 2022). In the context of foreign language learning, especially English, Al applications offer various tools and resources that can support the learning process in a more interactive and personalized way. In the ever-growing digital era, technology has become an integral part of everyday life, including in the field of education. One technological innovation that has begun to be utilized in education is artificial intelligence (AI). AI applications provide various tools to improve learning, one of which is vocabulary enhancement learning in English.

Vocabulary is a fundamental component of language learning, serving as the foundation for effective communication and comprehension. According to Schmitt, N., & Schmitt, D. (2020) Vocabulary plays an important role in various aspects of language use, including reading, writing, listening and speaking. Alahmadi, A., & Foltz, A. (2020) revealed that students' vocabulary acquisition closely related to their ability in reading comprehension and speaking. This suggests that vocabulary acquisition is critical to academic success in school and in

everyday communication, making a focus on vocabulary development an important area of focus in language education. AI-based tools are an important innovation in English vocabulary learning as they offer a personalized and interactive approach. The most popular AI tool for learning English vocabulary is Duolingo.

Duolingo is a favourable language acquisition application developed by Luis von Ahn and Severin Hacker, accessible on web, Android, and iOS platforms. It provides a game-based system that enables language acquisition more enjoyable and engaging. Duolingo has demonstrated efficacy in enhancing vocabulary mastery; 90% of students claimed that the software helped the development of their English vocabulary, while 70% affirmed it contributed to improved word memory (Safrina et al., 2024). The application provides extensive functionalities to quickly develop reading, writing, listening, and speaking abilities. Duolingo used the principle of "learning through play" via interactive games that substantially enhance student participation and learning outcomes. The software employs a system of points, levels, and awards to enhance students' motivation for learning while maintaining educational performance.

Furthermore, Duolingo is one of the most popular artificial intelligence-based learning platforms that has proven its effectiveness in improving language vocabulary. Various previous studies have demonstrated that Duolingo significantly impacts the vocabulary learning process. Based on experimental research conducted at Al-Hussein Bin Talal University in Jordan, the use of Duolingo showed significant improvement in English vocabulary acquisition compared to traditional learning methods, with equivalent results for both male and female learners (Abu Qbeita, A. A., 2024). According to Anggraini, A., & Faisal,

F. (2024) This platform leverages AI technology to create a conducive and personalized learning environment, where learners can practice according to their proficiency level, vocational needs, or interests. Duolingo is one example of an AI-based language learning application that is popular among learners (Akila et al., 2024).

The use of Duolingo in English language learning has shown significant potential to improve students' language skills, including vocabulary acquisition. These platforms can adapt to students' styles and needs, creating a personalized learning path for each learner. In addition, study by Fitri et al. (2023) found that students using Duolingo showed significantly higher post-test scores in vocabulary mastery compared to control groups, attributing this success to features like gamification, pronunciation practice, and motivational challenges. Similarly, Wahjuningsih and Andayani (2020) reported that students taught using Duolingo achieved better vocabulary skills than those using traditional methods like flashcards. Nevertheless, it is important to note that the effectiveness of the use of Duolingo in vocabulary mastery still requires further research, especially in terms of students' perception and preferences towards the use of Duolingo in vocabulary mastery.

Investigating student perception of technology implementation, such as Duolingo, is absolutely crucial in the today's digital era. Knowing about students' perception of the efficiency of these apps will be useful for educators and technologists to improve technology-driven teaching methods. This additionally helps in evaluating whether Duolingo really helps successful in learning vocabulary or if there are limitations within it. As more students participate in technology-based

self-paced language learning, it is important to evaluate how applications such as Duolingo can effectively achieve their goals, especially in terms vocabulary mastery, which is crucial to language proficiency.

This study aims to investigate students' perception of using Duolingo in vocabulary mastery at SMAIT Al Ghozali Jember. This study aims to investigate students' perception of Duolingo for vocabulary mastery, focusing on their interactions, attitudes, and experiences on Duolingo. The results of this research will provide educators, educational technology developers, and curriculum designers with an extensive knowledge of students' experiences and preferences related to vocabulary acquisition supported by Duolingo.

1.2   Problem of the Research

Based on the background of study above, the research problem in this study was: "How are students' perception of the use of Duolingo in vocabulary mastery at SMAIT Al Ghozali Jember? "

1.3   Objectives of the Research

Based on the above research problem, the purpose of this study is to investigate eleventh grade student perception of the effect of Duolingo as an Artificial intelligence tools on their vocabulary mastery. This research aims to provide an in-depth insight into students' perception of the use Duolingo as an artificial intelligence in improving their English vocabulary.

1.4   Operational Definition of the Terms

1. Students' Perception

Students' perception refer to their interactions, attitudes, and experiences of learners regarding a particular subject or phenomenon,

specifically how students see, understand, and evaluate the use of Duolingo AI tools in their learning process.

2. **Duolingo apps**

Duolingo apps is an artificial intelligence-based language learning platform and the most widely used in the world. A platform that offers online courses via smartphone. It is flexible to use and provides useful feedback for continuous learning improvement. In this research "Duolingo" has a position as a medium for learning English vocabulary.

1.5   Significance of the Research

This research enhances the comprehension of Duolingo as an AI technology's efficacy in language learning, specifically in vocabulary acquisition. By identifying students' perception, this research contributes to the development of language learning theories that are more responsive to students' needs.

1.6   Scope of the Research

This research will be conducted in Jember, more specifically at SMAIT Al Ghozali Jember for eleventh grade students. The dependent variable used is students' vocabulary mastery, while the independent variable used is the use of Duolingo as an artificial intelligence tools to contribute to the improvement of students' vocabulary skills.