

CHAPTER I

INTRODUCTION

A. Background of the Problem

Vocabulary plays a major role in the development of learners' reading, writing, speaking, and listening abilities; it is an essential component of learning English as a foreign language (EFL). According to Zeng *et al.* (2025), students' communication abilities and access to increasingly difficult academic content are determined by their vocabulary proficiency. This is in line with Biseko (2025), who refers to vocabulary as the core of communicative competence in the EFL context. Therefore, frequent participation in listening, speaking, reading, and writing activities contributes to vocabulary development (Chiriac, 2021). Thus, mastering vocabulary is a continuous process that goes beyond simply memorizing word definitions to include meaningful involvement. In EFL classes, vocabulary is even the main stepping stone to effective language skills (Wang *et al.*, 2025), consequently teaching methods must be designed to build deep understanding, not just short-term memorization.

Although it is very important, vocabulary learning still faces various challenges, particularly among students at the junior high school level. A lack exposure to English in everyday life makes it difficult for many students to develop new vocabulary naturally, thereby hindering the acquisition of

low-frequency words (Chen, 2025). In addition, Traditional teaching methods, including word-list memorization and repetitive drills, or the use of word lists only help with short-term retention but are not effective for long-term understanding (Ganesan *et al.*, 2025). Mujaddid *et al.* (2025) also refers to memorization as a boring and unproductive method for students. Other studies show that vocabulary learning is often not interactive and still heavily relies on textbooks, making learning monotonous and uninteresting Syamsinar *et al.* (2025). This results in students becoming passive, having difficulty retaining new vocabulary, and experiencing problems with pronunciation and language interference (Rahmi *et al.*, 2025). This condition suggest that vocabulary instruction needs more visual, contextual, and engaging media.

At State Junior High Schools 20 in Bengkulu City, findings from researchers' observations during Field Practice (PLP) in October 2024 showed that the Eighth-grade students continued to struggle with vocabulary. Challenges in comprehending English texts and applying vocabulary appropriately in both spoken and written communication are faced by many students. Thus, the teaching methods used by teachers are still conventional, namely asking students to memorize vocabulary, write it down in a diary, or simply state the meaning of words orally. As a result, students often

become passive, forgetful, and unmotivated. Using technology-based instructional media, especially interactive ones, remains minimal, making learning monotonous and uninteresting. Consequently, Students find it challenging to fully comprehend the meaning of words and become less motivated to study when learning tactics are not varied.

Currently, the integration of information and communication technology (ICT) in the learning process is an inevitable necessity in educational development. The use of educational technology is realized using interactive learning media design to support the teaching and learning process more effectively. Interactive media can provide an authentic, repetitive, and meaningful learning experience, thus that students are more active in the learning process (Liu *et al.*, 2025). Furthermore, the use of technology in learning allows teachers to deliver material in a more relevant manner that suits students' learning needs (Akram *et al.*, 2022). Technology based media also provides easy access to learning, increase interactivity and allows for the adjustment of material based on the needs, preferences and learning speed of each student (Huang & Sun, 2023). Through the use of educational technology, student can learn in a more flexible, independent and personalized manner, thus that the learning process is no longer limited to the classroom or conventional methods. Therefore, innovations in educational technology play an

important role in improving the quality of English language learning, especially in vocabulary mastery.

In practice, teachers have utilized various digital and multimedia application in learning. Game-based application such as Kahoot have been proven to increase enjoyment, engagement, motivation and the usefulness of leaning for student (Altawalbeh & Irwanto, 2023). Using gamification platforms including Wordwall, Kahoot, Blooket, and Quizizz has also been proven effective in improving students' vocabulary learning (Villacres *et al.*, 2024). The teachers commonly integrate digital learning resources, namely; YouTube, digital textbooks, Microsoft PowerPoint, Google Slides in delivering material, as well as Google Classroom and Quizizz in managing and accessing learning (Juhari & Zakaria, 2024). Mobile technology also provides discussion, chat, and collaborative game features that encourage the use of vocabulary in real contexts (LĂPĂDAT, 2023).

Amidst the various technology-based learning media that can facilitate learning of English, the current study specifically determines the implementation of Assemblr Edu application. Assemblr Edu was developed as an educational application that utilizes Augmented Reality (AR) to support the learning process through the visualization of 3D objects, labels, and interactive animations integrated with the real environment. Assemblr Edu utilizes Augmented Reality (AR)

technology, which works by adding digital elements such as three-dimensional models, labels, and interactive animations to the user's real environment, thereby creating an immersive learning (Adeola Esther *et al.*, 2025 in Hafiz *et al.*, 2025). Through learning experiences, the application of AR has been proven to assist learners understand abstract concepts more effectively through 3D visualization and interactive animations, to enhance student motivation,

Evidence from previous research suggest that AR contribute positively to language learning. Ngo & Vo (2025) emphasize that visual, auditory, and kinesthetic learning styles can all be supported through AR, consequently it can be used inclusively in English language learning. Ji & Wang (2024) state that AR can significantly increase student motivation, achievement, and engagement. Fithrotul 'aini *et al.* (2025) found that the use of AR has produced positive educational outcomes, including increased learning motivation and improved vocabulary achievement among seventh-grade students. Furthermore, in ESP contexts, AR creates a more engaging learning environment that contributes to students' vocabulary mastery. Hwang *et al.* (2025) reported that AR at the elementary school level can increase enthusiasm and vocabulary retention, while Milad & Fayez (2025) reported that, at the higher education level, AR can influence favorable opinions about the growth of academic writing abilities.

However, although previous research evidence shows the effectiveness of AR, there are several important gaps. To begin with, the existing literature mainly discusses AR, not the use of specific applications such as Assemblr Edu. Additionally, the researcher's PLP experience shows that the conventional teaching method implemented by teachers have not effectively improve vocabulary mastery. This confirms the need for research that assesses the effectiveness of using specific AR applications in a real classroom context, by comparing learning results prior to and following the use of interactive media utilizing a quasi-experimental study methodology.

Therefore, focusing on eighth-grade students at State Junior High School 20 in Bengkulu City, this research explored the effect of the Assemblr Edu application on vocabulary mastery during the 2025–2026 academic year. This study is expected to demonstrate the effectiveness of Assemblr Edu application are successful at improving students' vocabulary knowledge and may be used as an innovative learning alternative to overcome monotonous conventional methods.

B. Identification of the Problem

Based on the background of the study, the problems identified in this research are:

1. Eighth-grade students at State Junior High School 20 Bengkulu City still experience difficulties in mastering English vocabulary, particularly in understanding.
2. Vocabulary learning is still dominated by conventional methods, such as memorization, writing vocabulary, and stating word meanings orally, which may cause students to become passive and less motivated.
3. The use of interactive and technology-based learning media in vocabulary instruction is still limited.

C. Limitations of the Study

The scope of this research is confined to the use of Assemblr Edu in improving the vocabulary mastery of eighth-grade students during the 2025-2026 academic year. In terms of learning materials, this study only covers English vocabulary included in the eighth-grade junior high school curriculum

D. Research Question

Based on the problem identification and background, the researcher formulated the following question:

Is there an effect of using the Assemblr Edu application on the vocabulary mastery of eighth-grade students at State Junior High School 20 Bengkulu City in the 2025–2026 academic year?

E. Research Objectives

According to the research question, to determine whether the use of the Assemblr Edu application affects the vocabulary mastery of eighth-grade students at State Junior High School 20 Bengkulu City in the 2025–2026 academic year.

F. Significant of Research

Theoretically, this research is expected to contribute to the development of English language learning studies, particularly in relation to vocabulary mastery, and to add to the references on the use of Augmented Reality-based learning technology through the Assemblr Edu application.

Practically, this research is expected to benefit teachers as an alternative innovative learning medium, students in increasing their motivation and English vocabulary mastery, especially in ecosystem material, and schools in supporting the implementation of technology-based learning. In addition, this research is expected to be a reference for future researchers to develop similar research with broader coverage, different material, or other research approaches.

G. Definition of key Terms

1. Vocabulary Mastery

Vocabulary mastery is the level of a student's ability to understand, remember, and use English words

appropriately in oral and written communication. In this study, students' vocabulary mastery was measured through vocabulary tests before and after the implementation of learning media, namely the Assemblr Edu application.

2. Assemblr Edu Application

Assemblr Edu is a technology-based educational application that uses the concept of Augmented Reality (AR) to make learning more interactive and visual. Assemblr Edu is a part of the platforms develop specifically for education needs, thereby its features are tailored to classroom teaching and learning activities. This application allows teachers to create, manage and share AR based learning content, while student can access and interact directly with the material through devices such a s smartphone. Assemblr edu display 3D objects, text, images, animations and audio that appear on the device screen as if they were appear in the real environment. Through these features, students not only see the material on two dimensions as in a books or pictures, but can also rotate, zoom in, zoom out, and observe objects from various angles.