THE EFFECT OF ASSEMBLR EDU ON THE FOURTH-GRADE STUDENTS' VOCABULARY AT SDN LIRBOYO 2 IN ACADEMIC YEAR 2024/2025

SKRIPSI

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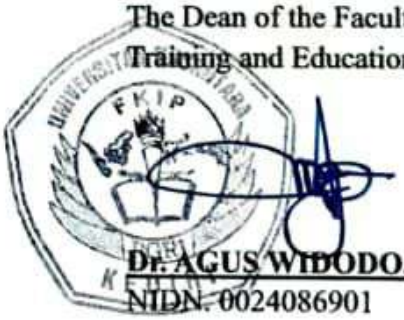

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MOTTO AND DEDICATION

MOTTO:

"With Great Power Comes Great Responsibility"

(Uncle Ben Parker)

DEDICATION:

I dedicate this thesis to my beloved family, especially my dearest mother, YayukWinarti, whose endless love, prayers, sacrifices, and unwavering support have been my greatest source of strength throughout this journey. This achievement would not have been possible without your encouragement and belief in me.

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ABSTRACT

Fery Satria Hutama. The Effect of Assemblr Edu on the Fourth-Grade Students' Vocabulary at SDN Lirboyo 2 In Academic Year 2024/2025, Skripsi. English Language Education Department, Faculty of Teacher Training and Education. University of Nusantara PGRI Kediri, 2026.

Keywords: *Assemblr Edu, Vocabulary Mastery, Augmented Reality, Young Learners*

Vocabulary mastery is one of the most important aspects of English language learning, especially for young learners. However, many elementary school students still experience difficulties in learning and retaining English vocabulary due to the use of conventional learning methods. Therefore, this study investigated the effect of Assemblr Edu, an Augmented Reality (AR)-based learning application, on the vocabulary mastery of fourth-grade students at SDN Lirboyo 2 in the academic year 2024/2025.

This research employed a quantitative approach using a pre-experimental design with a one-group pre-test and post-test design. The participants were 28 fourth-grade students of SDN Lirboyo 2 selected through purposive sampling. The research instrument consisted of vocabulary tests administered before and after the treatment. The treatment was conducted using Assemblr Edu, particularly the AR Viewer and Instant Presentation features, focusing on the topic "Things in the Living Room and Bedroom." The collected data were analyzed using descriptive statistics and the Wilcoxon Signed-Rank Test.

The results showed that the students' vocabulary achievement improved after the implementation of Assemblr Edu. The mean score increased from 70,36 in the pre-test to 90,73 in the post-test. Furthermore, the Wilcoxon Signed-Rank Test revealed that the significance value was 0,000, which was lower than 0.05. Therefore, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted.

It can be concluded that Assemblr Edu has a significant positive effect on the vocabulary mastery of fourth-grade students at SDN Lirboyo 2. The use of Augmented Reality technology provides interactive and engaging learning experiences that help students understand and retain English vocabulary more effectively.

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CHAPTER I

INTRODUCTION

A. Background of Research

English as an international language plays an important role in various aspects of global life from education and economics to technology making English proficiency an increasingly urgent need for Indonesia's younger generation (Ministry of Education, 2022). In addition, UNESCO (2021) highlights that foreign language proficiency, especially in English, is one of the essential competencies required in the 21st century, as it supports access to global knowledge, technological development, and intercultural communication. However, the reality on the ground shows that English language learning in Indonesia, particularly at the elementary school level, still faces various challenges that result in low student achievement, especially in vocabulary mastery.

One of the main problems lies in the limited competencies of teachers, both in terms of language proficiency and the teaching methods they use (Pertiwi et al., 2021). Conventional, teacher-centered learning methods, including lectures and rote memorization, tend to limit students' active participation in the learning process. Student-centered approaches, on the other hand, promote greater engagement, collaboration, and critical thinking among learners in English classrooms (Shafi & Masood, 2023). In fact, the characteristics of elementary school students—who tend to be active, easily bored, and have short attention spans—require interactive, visual, and contextual learning (Cameron, 2001). Furthermore, students still encounter various difficulties in mastering English vocabulary, particularly in understanding word meanings, retaining new words, and using English confidently in classroom communication (Ryan et al., 2024). This results in poor vocabulary mastery, even though vocabulary is a fundamental component of language proficiency that significantly determines success in other language skills (Nation, 2022). The integration of digital learning in primary education is frequently hindered by infrastructural limitations,

unstable internet connectivity, and limited access to digital devices and technological support (Ravendaran & Nasri, 2025). Furthermore, the learning materials used in English classrooms are sometimes not appropriate to students' needs and developmental levels because they provide limited visual support and lack meaningful real-world contexts (Tomlinson, 2013; Mayer, 2014). Consequently, learning becomes less engaging and fails to optimally enhance students' understanding.

Preliminary observation conducted by the researcher at SDN Lirboyo 2 revealed several problems in English vocabulary learning among fourth-grade students. Most students experienced difficulties in remembering English words, distinguishing the meanings of similar vocabulary items, and pronouncing new words correctly. During classroom instruction, students tended to rely heavily on the teacher's explanation and textbook activities, while only a few students actively participated in learning activities. Learning media were still limited to printed books and pictures, resulting in low student engagement and reduced motivation to learn English vocabulary. Consequently, many students obtained vocabulary scores below the school's minimum mastery criterion, indicating that vocabulary mastery remains a significant challenge that requires innovative instructional media.

Another issue is the limited use of innovative and interactive learning materials. Classroom learning is still frequently dominated by textbooks and conventional instructional media, whereas multimedia-based materials can enhance students' attention, understanding, and engagement in learning (Mayer, 2014). In the context of 21st-century learning, the use of technology is crucial for creating learning experiences that are more effective, engaging, and tailored to students' needs.

One solution that can be implemented is the use of Augmented Reality (AR)-based technology, such as the Assemblr Edu application. This technology enables students to interact with three-dimensional virtual objects, making learning more concrete, engaging, and meaningful for young learners (Lai & Chang, 2021). The use of Augmented Reality (AR)

in learning has been shown to improve students' motivation, engagement, and vocabulary learning performance (Lai & Chang, 2021; Rahmadani et al., 2024). This is supported by various Umar et al., (2025) found that the use of Assemblr Edu can significantly improve vocabulary mastery and retention among elementary school students. Carrión-Robles et al., (2023) also stated that the use of Assemblr Edu in EFL instruction can improve students' English language skills, including vocabulary, as well as increase motivation and engagement in learning. Furthermore, Arjulayana & Pujiati, (2025) as well as Rosyidah et al., (2023) demonstrated that this medium can enhance students' creativity, vocabulary mastery, and learning motivation. More recent research further reinforces these findings. Rizkina et al. (2025) found that the development of an Augmented Reality (AR)-based vocabulary learning application in Indonesia promoted more interactive and contextual vocabulary learning experiences for students. Furthermore, Rahmadani et al. (2024) found that the use of AR is significantly effective in improving English vocabulary mastery among young learners, particularly regarding meaning comprehension and retention. Other studies by Sagita et al. (2025) and Mursyida et al. (2023) reveal that AR-based learning provides an interactive and multimodal learning experience, thereby enhancing students' understanding and engagement. However, several studies also indicate challenges in implementing this technology, such as limitations in devices, internet access, and user readiness (Majid et al., 2023; Khoerunnisa, 2025).

Although various studies have demonstrated the effect of Augmented Reality in English language learning, several research gaps remain. First, most previous studies focused on general AR applications rather than specifically examining the educational features provided by Assemblr Edu. Second, many studies were conducted at junior high schools, senior high schools, or universities, while research involving elementary school students is still relatively limited. Third, previous studies primarily investigated students' motivation and engagement, whereas empirical evidence regarding vocabulary mastery improvement through Assemblr

Edu in elementary school contexts remains insufficient. Moreover, no previous study has specifically investigated the implementation of Assemblr Edu among fourth-grade students at SDN Lirboyo 2. Therefore, this study seeks to address these gaps by examining the effectiof Assemblr Edu in improving students' English vocabulary mastery in this specific educational context.

This study focuses on the implementation of Assemblr Edu by integrating its AR Viewer and Instant Presentation features into vocabulary instruction for fourth-grade elementary school students. While previous studies have generally examined the effect of Augmented Reality applications in language learning, this research specifically explores how these two features facilitate vocabulary acquisition on the topic of *Things in the Living Room and Bedroom*. In addition, the study is conducted in the context of SDN Lirboyo 2, where the use of Assemblr Edu in English vocabulary instruction has not previously been investigated. By examining the application of this technology in an Indonesian elementary school setting, this research provides empirical evidence and practical insights into the integration of technology-enhanced learning media to support young learners' vocabulary development.

To ensure a more focused study, this research focuses on the use of technology-based learning media, specifically Assemblr Edu, to improve students' English vocabulary mastery. The use of this application is limited to two main features: AR Viewer and Instant Presentation (PPT Mode). The AR Viewer feature is used to display vocabulary through three-dimensional object visualizations, while the Instant Presentation feature is used to present learning materials interactively. The learning material in this study is limited to the topic "Things in the Living Room and Bedroom," which includes vocabulary for objects such as table, chair, lamp, bed, pillow, and cupboard. This study was conducted with 28 fourth-grade students at SDN Lirboyo 2 during the 2024/2025 academic year. The research focuses solely on vocabulary mastery and does not cover other language skills such as listening, speaking, reading, and writing.

Given these limitations, it is hoped that this study will provide more focused and in-depth results regarding the effectiveness of using Assemblr Edu in improving elementary school students' vocabulary mastery, as well as contribute to the development of more innovative, engaging, and student-centered English learning methods in the digital age.

B. Formulation of the Problem

Based on the background and limitation of the study, the problems of this research are formulated as follows:

1. How is fourth grade students' vocabulary at SDN Lirboyo 2 before being taught using Assemblr Edu?
2. How is fourth grade students' vocabulary at SDN Lirboyo 2 after being taught using Asemblr Edu?
3. How significance effect of using Assemblr Edu on the fourth-grade students' vocabulary?

C. Purpose of the Research

In line with the formulation of the problems, the purposes of this research are as follows:

1. To find out the fourth-grade students' vocabulary score at SDN Lirboyo 2 before being taught using Assemblr Edu.
2. To find out the fourth-grade students' vocabulary score at SDN Lirboyo 2 after being taught using Assemblr Edu.
3. To find out significant effect of using Assemblr Edu on the fourth-grade students' vocabulary mastery at SDN Lirboyo 2.

D. Significance of the Research

1. For the researcher

This study will contribute to the existing body of knowledge regarding the effect of Assemblr Edu in improving vocabulary acquisition, particularly within the context of elementary English language learning.

2. For students

The researcher hopes that this study can improve students' vocabulary skills using Assemblr EDU and creating a more engaging learning environment through multimedia resources.

3. For Teacher

The study could provide teachers with significant information into bringing Assemblr Edu into their instructional approaches, potentially leading to better student learning results.

E. Definition of Key Terms

For readers to comprehend the study, certain key terms are defined. These are the definitions:

1. Assemblr Edu

   Assembler Edu is an Augmented Reality (AR) based application specifically designed to support educational needs, particularly in the teaching and learning process (Majid et al., 2023). This application enables teachers and students to visualize three-dimensional (3D) objects and learning materials interactively, making abstract concepts more concrete and engaging. Through features such as AR Viewer and Instant Presentation (PPT Mode), Assemblr Edu provides an innovative learning environment that promotes students' motivation and understanding.

2. Vocabulary

   Vocabulary refers to the set of words that a person knows and uses to communicate in a particular language. According to Nation (2022), vocabulary knowledge involves the ability to recognize, understand, and appropriately use words in both receptive (listening and reading) and productive (speaking and writing) forms. Mastery of vocabulary is essential because it serves as the foundation of language proficiency and communication.

3. Young Learners

   Young learners are children between approximately six and twelve years old who are in the elementary school stage. Cameron (2001) explains that young learners learn best when they are engaged in activities that are meaningful, visual, and hands-on, rather than through abstract explanations. Therefore, English instruction for young learners should be designed to suit their cognitive and affective characteristics, including short attention spans and a preference for visual and interactive learning.

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