CHAPTER I

INTRODUCTION

In this section, this study presents the background of the research, research questions, research purpose, research significance, theoretical framework, previous study, and hypothesis.

A. Background

This study aims to ascertain how high school students' comprehension of vocabulary mastery can be improved through the use of augmented reality technology based on the Assemblr Edu application. Learning vocabulary is becoming more engaging and meaningful due to the growing popularity of technology in the classroom. Teachers frequently employ technology in the classroom, including mobile apps, PowerPoint, and other digital tools. This demonstrates how vital technology utilization is. According to Wang and Young (2014), learning vocabulary in English can be made more motivating for students by utilizing technology.

To support the mastery of English skills, it is essential to learn vocabulary. Lewis and Hill (1997) emphasize the importance of mastering vocabulary for students, as a lack of it can lead to ineffective communication and a preference for the native language. To help students with a limited vocabulary, interactive learning resources can be used, and teachers must identify learning media as a crucial component of Education.

The majority of learners have inadequate vocabulary mastery. Based on my observation, there are several vocabulary-related issues. The students still struggle with utilizing words depending on context and have trouble pronouncing words correctly, spelling, writing, and constructing sentences. Additionally, students' learning results for vocabulary comprehension remain poor. Students can only get vocabulary scores that are, on average, lower than the relevant minimum criteria.

Natalia and Fitriawati (2022) stated that a variety of factors, such as students, teachers, and the media, affected all of the current issues. Students are the root of the first issue. When it comes to expressing their thoughts and ideas, they lack confidence and are apprehensive about making mistakes. English teachers are involved in the second issue. Traditional approaches are used by English teachers. From the start of the class to its conclusion, the teacher simply explains the subject. Because of this, students become disinterested and unmotivated to learn. The media is the subject of the third issue. Textbooks backed by a whiteboard are the only media that are utilized. To inspire students to learn, teachers need to use their imaginations to come up with different ideas.

The researcher looks for practical ways to enhance the student's language competence to address such issues. In other research, techniques like word walls, scrabble games, comic strips, songs, word mapping, etc. are frequently employed (Natalia & Fitriawati, 2022). The optimal user experience was achieved in this study through the use of Assemblr Edu augmented reality media. This study believes that a more engaging learning environment in the classroom

can result from the use of Assemblr Edu augmented reality media in teaching vocabulary.

Assemblr Edu is one of the augmented reality media that can be used for learning vocabulary. Vedadi, Abdullah, and Cheok (2019) discovered that AR can enhance vocabulary learning and motivation in an ESL environment, particularly in vocabulary acquisition. AR is an effective tool to help EFL students acquire English vocabulary efficiently. Based on this reason, researchers used Assemblr Edu augmented reality media to see the development of students' vocabulary mastery.

Several appropriate studies investigate the application of AR in learning vocabulary. Hafidah, Yusuf, and Subagya (2022) use augmented reality flashcards to help children, ages 4 to 5, to become more proficient with English vocabulary. Tin-Chang, Liao, and Hsun-Hui (2023) investigate how AR technology can enhance learning. Tsai (2020) compares the effectiveness of traditional lecturing with the augmented reality technique in terms of students' learning of English vocabulary and their motivation to learn from the instructional materials. According to these three studies, utilizing augmented reality as a learning tool improves students' vocabulary comprehension.

The current study differs from other investigations. Only the effects and improvements before and after vocabulary learning with augmented reality have been the subject of prior research. Even so, this research is more advanced than the earlier studies. This study looks into the process of teaching vocabulary with

augmented reality as well as the vocabulary growth of the students. In addition, the research object employed in this study differs from that used in other investigations. Students in high school served as the objects of data collection in this study. This is not like earlier research that employed middle and primary school students as study subjects.

B. Research Questions

This study investigates the impact of Assemblr EDU augmented reality media in learning English on students' vocabulary mastery. Therefore, there are three formulated questions in this research, as follows:

1. What is the student's vocabulary mastery before using Assemblr EDU augmented reality media?
2. What is the student's vocabulary mastery after using Assemblr EDU augmented reality media?
3. How significant is the development of students' vocabulary mastery before and after being taught using Assemblr EDU augmented reality media?

The first question uses scores from a pre-test score to collect data to evaluate students' vocabulary mastery. To answer the second question, the researcher uses post-test scores of students to collect data designed to assess students' vocabulary mastery after applying Assemblr Edu augmented reality media treatment in the classroom. Finally, the final question was based on the entire outcome of the pre-test and post-test scores of the students' vocabulary mastery.

The statistical analysis using SPSS 25.0 version's employed to determine the significance of developing students' vocabulary mastery.

C. Research Purpose

This study contains three distinct objectives to justify the research background. The first one is to find out the student's vocabulary mastery before using Assemblr EDU augmented reality media. The second one is to identify the student's vocabulary mastery after using Assemblr EDU augmented reality media. The last one is to investigate significant the development of students' vocabulary mastery before and after being taught using Assemblr EDU augmented reality media. In short, this research aims to determine the effectiveness of using Assemblr EDU augmented reality media in improving students' vocabulary mastery.

D. Research Significance

This study examines how students may improve their vocabulary knowledge by using Assemblr Edu augmented reality media. Understanding how well Assemblr Edu's augmented reality learning resources enhance EFL students' vocabulary comprehension is critical. Furthermore, it is expected that the research's conclusions will have both theoretical and practical implications for the field of education.

The theoretical objective of this research is to clarify the part that education plays in examining the use of learning media. This research aims to provide guidelines for using Augmented Reality media, especially for vocabulary

development. Furthermore, this research is supposed to be one of the tools used in English language education to help students become more proficient with vocabulary.

This research has three practical implications. Initially, it is intended that this study would help students become more enthusiastic and motivated to learn, particularly when it comes to expanding their vocabulary. Second, by bringing engaging and practical new educational media into the classroom, it is believed that the use of Assemblr Edu augmented reality media would support teachers' learning. In addition, this study might serve as a theoretical foundation and source material for future academics working on comparable issues.

E. Theoretical Framework

The purpose of this study is to examine and illustrate the effects of Assemblr Edu augmented reality media on senior high school students learning vocabulary in English. This study is supported by several important ideas, including augmented reality (AR), vocabulary learning components, and a make-a-match model. After all, this research should result in a notable improvement in the usage of augmented reality media for vocabulary learning. This is the extent to which the theoretical framework is illustrated:

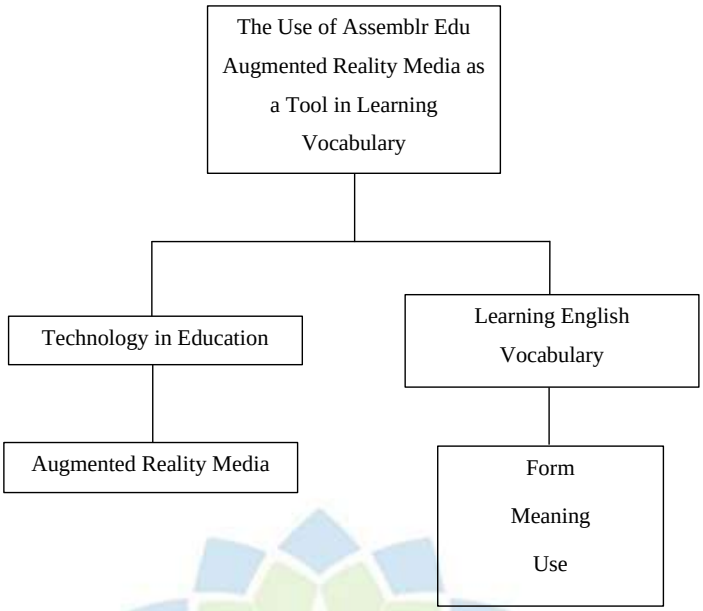

Figure 1.1 Theoretical Framework

The environment of English language instruction (ELT) has transformed due to technology. Solikhah (2023) stated that technology has given instructors additional tasks and duties as well as new chances to improve the interest, inventiveness, and productivity of ELT. The way that English is taught has changed dramatically as a result of the use of technology. The use of contemporary technology in the classroom facilitates vocabulary and language structure learning. Using current technological tools like computers, smart boards, and display displays improves students' language proficiency as well. Students may obtain information and access a variety of materials for language analysis and interpretation, as well as situations, through the use of smart boards, laptops, and display displays.

Augmented Reality is one of the technologies that can be utilized in the educational process. Augmented Reality has been used to solve problems in

education and provide an engaging learning environment that helps students learn and advance their knowledge and abilities. Jamrus and Razali (2021) portray that augmented reality or AR is one of the new technologies gaining traction in educational settings. It allows viewers to observe computer-generated items superimposed on real-world objects. By enabling users to position and interact with models and objects in the actual world, augmented reality technology illustrates the link between the real and virtual worlds (Djiril & Cakir, 2023). Due to the nature of augmented reality, users can interact with both real and virtual objects in the same area, resulting in new user learning experiences (Ersanli, 2023). In simpler terms, augmented reality is a technology that allows one's experience of the real world to be augmented with a layer of digital data or information (Jalaluddin, Darmi, & Ismail, 2021).

The component that connects the four language skills is vocabulary (Sadikin & Martyani, 2020). Having a large enough vocabulary is essential to language proficiency as it allows for efficient communication. In communication, vocabulary helps the speaker convey their thoughts, feelings, and opinions. According to Brown (2001), there are two categories of vocabulary. Both active and passive are they. When someone has to construct a spoken or written statement, their mind automatically fills in with words from their active vocabulary, also known as productive vocabulary. This can be done either orally or in writing. Conversely, people do not employ passive vocabulary, also known as receptive vocabulary.

Nation (2000) elaborated that there are several types of language knowledge and usage that fall under the categories of receptive and productive. These concepts encompass all the elements involved in word knowledge when they are applied to vocabulary. Form, meaning, and use are all part of understanding a word at its most basic level. Form includes spoken, written, and word parts. Meaning contains form and meaning, concepts and referents, and associations. Meanwhile, Use, includes grammatical functions, collocations, and constraints on use.

Learning vocabulary is essential to teaching and learning languages. Teachers put forth a lot of effort to help students overcome the difficulty of picking up, retaining, and using new terminology. The range, breadth, and complexity of lexical elements make it challenging to conceive about vocabulary acquisition or learning using a single theory or approach. Thus, educators' attention has been drawn to several language teaching methodologies. One type of instrument that can help with vocabulary acquisition in a target language is software. The lexical repertoire of EFL students is further enhanced by the communicational powers of computers, tablets, and smartphones (Ersanli, 2023). A viable approach is to employ augmented reality (AR) as a learning tool that teachers may use. Including engaging material in the classroom can help children learn more, particularly when it comes to vocabulary comprehension.

F. Previous Study

Some studies discuss the improvement of students' vocabulary mastery through Augmented Reality, with EFL learners in particular. First, Natalia and

Fitriawati (2022) were concerned with the average difference in Augmented Reality students' learning outcomes in improving language mastery and comprehension of describing animals. This research uses a quantitative research approach with pre-experimental methods. The results of the research show the post-test was higher than the Pretest value. This demonstrates that the student's vocabulary mastery at the pretest and posttest differed significantly. Apart from that, the N-Gains' value of 0.42 in the pre-test and post-tests is classified as normal. Furthermore, the results of the paired sample t-test indicated that the t-test (-7.010) is less than the t-table (- 2.060).

Hafidah et al. (2022) used augmented reality flashcards to help youngsters, ages 4 to 5, to become more proficient with English vocabulary. This study employs Kurt Lewin's three-cycle model of classroom action research. Planning, acting, observing, and reflecting make up each cycle. The very well-developed category's children's knowledge of English vocabulary grew from 35% at the end of cycle one to 85% at the end of cycle three, according to the data. Additionally, there was an increase in the number of words the kids learned, their ability to pronounce the target language correctly, and their capacity to discern between different word meanings.

Tin-Chang et al. (2023) investigated how AR technology can enhance learning. This study looked at the vocabulary acquisition results for English in a classroom setting using augmented reality and technology. Learning data, such as the pre-and post-tests for AR instruction (ARi), multimedia ppt instruction (MPI), and significant t-tests, were analyzed using the experimental

technique. The outcome showed that there was a significant difference in the degree of AR instruction ($p<.001$). When comparing the ARi and MPI groups, the AR instruction group's mean score on the post-test ($M=92.59$) was higher than the multimedia PPT group's ($M=84.86$). Regarding learning improvement, AR education had a greater improvement percentage ($I=23.1$) than multimedia PPT training ($I=14.24$).

Tsai (2020) compared the effectiveness of traditional lecturing with the Augmented Reality technique in terms of students' learning of English vocabulary and their motivation to learn from the instructional materials. An uneven pre-test and post-test experimental design was used in this study. The study's findings demonstrated that students taught with augmented reality (AR) had higher levels of motivation and performance when it came to educational materials than students taught with standard lecturing methods.

Ersanli (2023) looks at how well AR can help young students in the fifth grade learn and retain more vocabulary. 56 students in total, including an experimental group and a control group, participated in this study. The storytelling method was used to instruct both groups; the experimental group used augmented reality materials, while the control group used flashcards. Results from the pre-and post-tests revealed that both groups had significantly improved their vocabulary acquisition. Three weeks following the post-test, however, the experimental group—which made use of AR materials—showed a notable improvement in language retention when compared to the control

group. Furthermore, children who participated found the utilization of AR materials to be very interesting, which inspired them to learn.

Previous less above have focused on the effects and improvements that occur both before and after vocabulary acquisition with augmented reality. Still, compared to the previous investigations, this research is more sophisticated. This study examines how students' vocabulary grows and how augmented reality is used to teach vocabulary. Furthermore, the research object utilized in this study is not the same as the one utilized in previous studies. The study's data-gathering subjects were high school students. This research differs from other studies that used students from elementary and intermediate schools as study subjects.

G. Hypothesis

Quantitative research employs statistical hypotheses, which necessitate statistical testing before acceptance. The null hypothesis (Ho) and the alternative hypothesis (Ha) are the two statistical hypotheses that are put out in this quantitative inquiry.

Ho : There is no significant development of students' vocabulary mastery before and after being taught using Assemblr EDU augmented reality media.

Ha : There is a significant development in students' vocabulary mastery before and after being taught using Assemblr EDU augmented reality media.

The null hypothesis (Ho) is a statement that there is no difference or mutual influence between variables. To put it differently, the null hypothesis states a

difference equal to zero. So, this hypothesis will state, whether the null hypothesis hypothesis will be accepted or rejected.

The alternative hypothesis (Ha) states that there is an effect between the variables in this experiment. The alternative hypothesis opposes the contents of the null hypothesis, and there are differences like mutual influence between the variables studied. If there are deviations or differences between the variables, then the null hypothesis is rejected, while the alternative hypothesis is accepted.

The assumption of this research is to prove that the use of Assemblr Edu augmented reality media can effectively develop the student's vocabulary mastery. In other words, the null hypothesis is a statement that the researcher is trying to refute, while the alternative hypothesis is that the researcher is trying to prove.