CHAPTER I

INTRODUCTION

1.1. Background of the study

Vocabulary is essential in language learning; its deficiency inhibits good communication development. Hence, in the school environment, children with good academic performance in English have good vocabulary knowledge and classroom management (Alqahtani 2015, 22). One of the most common challenges in English class at School X is a lack of interest in looking up word definitions. As a result, students fail to expand and deepen their vocabulary, which is crucial for developing solid foundations in the English language and obtaining knowledge independently. Aside from that, learning English is becoming increasingly popular in Indonesia as it is a language used in science and technology and to access the international community, where the Internet and its knowledge resources are predominantly in English (Lie 2017, 71–72).

Because children's mental development is rapid, education is essential for shaping and growing their character and personality. It is during these years that they develop linguistic, emotional, and cognitive abilities that will be useful later in life in a variety of situations (Sari 2019, 32). Their childhood, which lasts from the ages of 6 to 12 years (Olivares 2019, 2–4), and adolescence, ages 13 to 18, are full of changes (Mastrotheodoros et al. 2018, 846). During those years, significant neural progress occurs at the cognitive level, which is connected to hormonal changes; some parts of the brain develop, such as the limbic system, which handles

emotional responses, and sleep regulation, and the prefrontal cortex, which is responsible for executive functions (Spear 2013, 153).

These children require means to supplement school activities, satisfy their personal and cognitive interests, achieve cognitive independence, encourage self-learning, and develop skills for collaborative and cooperative work, as well as a healthy competitive spirit (Ramos and Maya 2022, 567). This is where the teacher comes in, helping students identify their motivational, emotional, and cognitive engagement and how they influence their learning. To accomplish this, teachers must learn methods for improving students' self-esteem, confidence in their abilities, and the development of positive and realistic expectations (Carmona 2021, 31).

We live in a time when applying neuroscience knowledge to various professions is unavoidable. Cognitive neurosciences invite us to a unimodal paradigm shift, that is, to move away from the conventional expository method as the dominant teaching method, in which the infant is merely a passive receiver of information (e.g., the infant playing alone on his tablet), which harms motivation and learning, to a multimodal paradigm in which infants learn on their own with the help of a media mentor. In a TED Talk in 2014, Lisa Guernsey proposed "media mentoring," defined as a relationship in which a person with more experience or knowledge about neuroeducation, from the scientific to the practical, assists in guiding a person with less experience or expertise (Guernsey 2014). Every child requires a media mentor, as do every parent and family, and every educator must be a media mentor (Donohue 2017, 13).

Furthermore, the success or failure of any academic institution is not only determined by the academic results of students, according to Narad and Abdullah (2016, 13), but it is also said to be the pivot around which the whole educational system revolves. Aside from academic performance, we know that besides completing study activities, it is important to build, among other types of complex cognitive systems, specialized skills that generate learning strategies and techniques. Students must efficiently obtain, process, retrieve, and transmit information or knowledge to complete the various study activities, with the use of learning methods being a significant help.

Using new methodologies in the classroom is gaining significance because of an increase in developing technologies in the educational area, one of which is augmented reality (AR), which is considered an educational resource. Similarly, the day-to-day learning process has become a complicated phenomenon, owing in large part to the demands placed on today's students by society. Because of these issues, teachers are compelled to develop and implement new learning strategies and innovative teaching methods in the classroom in accordance with social reality. For these reasons, teaching innovation is aided using information and communication technologies (ICT) (Varguillas and Bravo 2020, 220).

According to Moreno and Leiva (2017, 84), AR may be defined as the merging of two environments, the virtual and the real; it is about "the combining of digital information and physical information in real-time using diverse technological devices." We can use this technology to add material such as text, images, audio, video, and three-dimensional (3D) models, which can help increase an individual's understanding of what is going on around them.

Taking these challenges into consideration, and to give a tool to meet them, it has been observed that AR boosts motivation and reinforces learning (Chang et al., 2019, 21-22). In reality, employing AR in education allows for the development of material that would otherwise be impossible, allows tasks to be completed at home, and fosters interactivity, play, and cooperation (Blázquez 2017, 28).

The vast amount of material that is constantly being developed by diverse online users makes the use of AR in education possible. Most of the accessible software is open source, and the technological needs are within the grasp of any educational institution, so the initial investment is minimal. As a result, at this time, numerous key uses of AR in education may be described, including instructional games, books, and other teaching materials (Redondo et al. 2019, 151).

Therefore, the present work aims to investigate the possible pedagogical effect of students' motivation, emotions, and cognitive engagement on English vocabulary learning moderated by augmented reality implementation at School X, Jakarta.

1.2. Problem Identification

Currently, there are issues in the educational field that education experts do not know how to successfully address. Many of the solutions to these challenges are as simple as including aspects of emotions, motivation, and cognitive engagement in the curriculum (Gutiérrez and Expósito 2015, 43). These variables have a major effect on academic accomplishment, which directly affects learning. Any intervention in the educational area must be founded on regularity and predictability, yet you cannot erase the emotional, cognitive, or motivational factors that accompany this process. As a result, it is advocated that to attain improved

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efficiency and quality in the teaching-learning process, it is necessary to incorporate these areas into the collection of all those dimensions that interfere with the said process. The rationale for this is that when these characteristics are incorporated into education, the results are far superior to those gained from that impersonal procedure devoid of all emotional, cognitive, and psychological attributes (Pacheco, Villagrán, and Guzmán 2015, 202).

A study was carried out to examine the impact that these factors may have in the educational area, and part of the results are collected by Pulido and Herrera (2015, 29), where the correlations between emotions (Fear) and emotional intelligence (IE) were contemplated. The emphasis of this research was on the impact of the variables on academic performance, the variable most representative of the educational sector in which it is engaged (Pulido and Herrera 2015, 29).

Similarly, this study will look at whether variables such as motivation, emotions, and cognitive engagement have an impact on academic success in English vocabulary learning using AR at School X. The "academic performance" will be understood as the evaluation that the students and the teacher make of their vocabulary knowledge. In sum, the identified problems are

1). The students' deficiency in English vocabulary affects their reading comprehension capacity.

2). There is an absence of motivation and interest in expanding their vocabulary by looking up definitions of words.

3). The traditional teaching system does not allow knowledge to be linked to an emotional experience in which textual and static information is not given in animated, interactive, and three-dimensional content,

which would facilitate the transmission of concepts and their understanding.

4). Students' cognitive engagement in learning English vocabulary is low, and they make little effort to truly understand the meaning of a word.

5). There are still a limited number of augmented reality apps focused on learning English vocabulary.

1.3. Problem Limitation

Various factors, such as the student, teacher, parent, and school factors, can all influence academic achievement, but this study only focuses on the student component.

Furthermore, AR is an innovative aspect of the educational field since a large part of this tool is in the experimentation phase, and the studies conducted are very recent.

1.4. Problem Statement

The main arguments presented below and previously exposed provide explanations for the problem of this study. First, the importance of motivational, emotional, and cognitive aspects and their influence on the lexical development of the English language has led this research to search for potential predictors of these factors in students of School X. Likewise, considering that the academic context makes up a key space for the socialization and integral development of the student and that low academic success has been considered a consequence of low levels of the factors already mentioned, it is especially interesting to know how implementing an application aimed at learning vocabulary in English can influence academic success. Considering this academic achievement not only as a grade

achieved but also as the consequence of the commitment, effort, and perseverance of the students, their motivation to learn English vocabulary.

With all the above, it shows a current need to implement new methodologies and resources, such as AR, in primary and secondary education classrooms to curb demotivation and poor academic performance. Thus, in the present study, the following questions have been elaborated as part of the objectives of this research:

1) Does motivation positively affect the students' English vocabulary learning at School X?

2) Do emotions positively affect the students' English vocabulary learning at School X?

3) Does cognitive engagement positively affect the students' English vocabulary learning at School X?

4) Does the use of AR positively affect students' motivation on learning English vocabulary at School X?

5) Does the use of AR positively affect students' emotions on learning English vocabulary at School X?

6) Does the use of AR positively affect students' cognitive engagement on learning English vocabulary at School X?

1.5. Purpose of the Study

A school is an important place for children's socialization and growth (Verhoeven, Poorthuis, and Volman 2019, 36). The relevance of motivational, emotional, and cognitive factors in the lexical development of the English language has prompted this study to look for potential predictors of these variables in students at School X. All of this points to the present need to apply innovative approaches

and resources, such as augmented reality (AR), in elementary and junior high school classes to develop a better expansion of the students' English vocabulary.

Implementing this technology will make learning more optimal and creative, promoting good attitudes and school achievements by stimulating the development of cognitive engagement, motivation, and emotions. Furthermore, it improves the quality of children's English vocabulary learning and, as a result, their academic performance (Hartanti and Kurniawan 2022, 3104).

The primary goal of this study is to the effect of students' motivation, emotions, and cognitive engagement on English vocabulary learning moderated by augmented reality implementation at School X, Jakarta.

1.6. Benefits of the Study

The investigation will help to understand these crucial learning elements of the students at School X mentioned above in the investigation's purpose. Similarly, the study's findings will help raise awareness among parents, teachers, school directors, principals, school founders, students, and researchers about the advantages of using AR over traditional forms of education.

1.7. Organization of the Study

The following writing systems are used in this research study: The first chapter provides background information and the reasons for conducting this study. Using the background information, the problems are then identified. The limitations are identified and developed for the research to determine the limitations by six research questions. The study's benefits are stated at the conclusion of Chapter I, followed by a study organization.

Chapter II is a review of the study's literature based on several academic resources. The researcher defines the variables used in this research and their features. Following that, it addressed earlier research relevant to this subject to support and show the relevance of this study today. The conceptual framework of the study is then depicted, and it gives the research hypotheses at the end of Chapter II.

The research approach employed in this study is covered in Chapter III. The framework of the research technique is provided first, followed by the study design. Then comes the location, timing, and population of this research. Following that, the population and research techniques are described. This chapter also explains the data gathering process and instruments adopted. Following the instrument design, detailed data analysis is addressed, and this chapter concludes with the hypotheses provided and the research model for this study.

Chapter IV contains an explanation of the data analysis and an interpretation of the study's findings. This chapter addresses the effect of each independent variable on the dependent variable and the moderating variable based on the data examined and the ideas researched.

Chapter V contains the study's results, which address the research questions based on the hypotheses examined. The implications of the findings are then described and utilized as the foundation for the recommendations made. The fifth and last chapter of this research will be Chapter V.