CHAPTER II

REVIEW OF THE LITERATURE

This section provides a review of the theoretical framework and previous studies that relate to this study. Theoretical frameworks contain all of the theories that are appropriate to this study. Which is divided into some points which presents a discussion of the theoretical framework the supports of mobile assisted language learning, the nature of Memrise application, Memrise application as a language learning system, vocabulary learning through application, Whereas, the previous study talks about empirical that would be considered reporting research findings.

2.1 Theoretical Framework

The theoretical framework is a wide variety of theories in many different fields of social and natural science (Vincent, Anfara & Norma, 2014). The theory allows a researcher to understand the phenomenon being studied in different ways that seem to be ordinary. It serves to guide and support our study that establishes a coherent explanation.

2.1.1 Mobile Assisted Language Learning (MALL)

Mobile-assisted language learning has become into life partner for many people (Godwin-Jones, 2017). Mobile learning is a type of learning activity that is possible for learners and does not require to be tied to a particular geographical location (Wu e al., 2012). Mobile Assisted Language Learning (MALL) is one of the subcategories that refer to the language learning context. For nearly 20 years,

Mobile Assisted Language Learning (MALL) has emerged that capabilities of mobile devices have improved.

Over a million applications are available for the users including in Apple iTunes, the app store, and Google Pay. Especially for mobile phones and smartphones, it used as tools involved in learning a foreign language (Klimova, 2018). Mobile learning is one of the most recent developments in the application of educational technology that emphasizes the affordance, experiences, and opportunities provided by the revolution of portable devices for learning ubiquitous and anytime (McQuiggan et al., 2015).

Thomas, Reinders, and Warschauer (2012) reveal that it is natural that mobile-assisted language learning has a role in the learning context because mobile technologies becomes grown widely and part of our everyday life. Thus, developments of those results, have increased interest between researchers and educators to excavate features of mobile-assisted language learning (MALL) (Alamar & Al-Khateeb, 2021; Lai, 2016; Wriggles-worth & Harvor, 2018).

In pedagogical MALL has been discovered to enhance teacher-student, student-student communication, speaking, and listening skills (Golonka, Bowles, frank, Richardson, & Freynik, 2014; Hwang, Chen, & Chen, 2011; Kondo et al., 2012; Toland, Mills, & Kohyama, 2016). Moreover, Mobile Assisted Language Learning has a large function and is constrained to a behaviorist, teacher-centered, and tutorial application (Burston, 2014; Kukulska-Hulme & Shield, 2008).

Kukulska-Hulme (2012) pointed out that mobile-assisted language learning (MALL) offers a specific advantage that allows interactions across different contexts. Moreover, Burston (2014) reveals that materials designs in the

app are based on behaviorist teacher-centered transmission of information. Thus, Mobile Assisted Language Learning (MALL) becomes attention and popular because it could facilitate language learning, especially for L2 vocabulary. After all, mobile technology creates a more authentic, context-sensitive, socially interactive, and individualized learning environment for language learning (Lin & Lin, 2019).

Furthermore, L2 vocabulary learning acquisition becomes attention and current MALL studies have been exploring it. Dealing Burston (2014) argued MALL could make contributions to improve language learning because by using mobile devices students could complete their tasks, especially in terms of language acquisition even in and outside the classroom. As well as, Zhang, Song & Burston (2011), mobile-assisted language learning (MALL) offers a convenient and approach that has a high frequency to combine various methods such as computer adaptive flashcards, and receptive or productive quizzing.

Mobile-assisted language learning has been used in education programs because it has made a great contribution in terms of the language learning basic process, specifically in vocabulary acquisition. The rehearsal of grammar, vocabulary, and phrases is easy to program and students could receive feedback automatically from the application. Include constructing students' confidence related to their listening and speaking skill to extensive listening and speaking. Shi et al. (2017) the most known outcomes encourage to use mobile assisted language learning as a convenient method because it motivates students to be more convenient speak foreign languages.

Thus, it means that mobile-assisted language learning (MALL) can be used in higher education as a preference for lecturers to teach L2 learning, especially in the classroom that does not have background knowledge about a second language. To deal with the implementation of mobile-assisted language learning in the educational context specifically the EFL context, Fujimoto (2012) revealed that the utilization of mobile devices has shown a positive impact namely increasing students' language skills specifically in the EFL context, including listening, reading, and vocabulary.

Moreover, in mobile-assisted language learning, the devices provide immediate access to the internet, and several applications enabling to learning by native speakers ubiquitous such as listening to the audio on the way, playing language games, and watching a short foreign video while traveling (Kukulska-Hulme, 2018). Besides increasing, language skills mobile assisted language learning has helped students to improve students motivation and attitudes toward learning the language (Esit, 2011).

Besides, adding gamification to MALL platforms has shown positive affect including student behavior, being bound or committed, and getting students' motivation (Huang & Soman, 2013). Dehganzadeh and Dehganzadeh (2020) highlighted that most studies have indicated increases in student motivation and engagement in gamified circumstances.

According to Kapp (2012), gamification involves game-based mechanics and engages people, and aesthetics motivates action, promotes learning, and solves problems. Numerous studies have conducted a review of gamification and

13

invented positive outcomes related to motivation, engagement, and enjoyment (Dehganzadeh et al., 2019).

As such, there are several merits of utilizing MALL. First, MALL enables students to access language learning materials easily and promptly. Second, the nature of digital technology facilitates students' language learning anytime and anywhere that allowing for rapid development of speaking, listening, reading, and writing skills. Third, mobile technology provides various resources and tools for language learning that stimulate learners to be more motivated.

According to the importance and benefits of MALL as assisting teachers and lecturers in improving the quality of their teaching, this study attempt to excavate one of the tools of MALL namely the Memrise application.

2.1.2 The Nature of Memrise Application

Since technology growing rapidly, the whole of the world including in education is turning to media. Many teachers considered utilizing technology to remove the restriction in learning. Moreover, mobile phones have become inseparable from students' academic life without looking at their ages and goals (Fathi, Jalil, Saeedian, 2018). Since the diversity of applications appearance that provided online that support teachers and students in learning vocabulary, many researchers distract them to do studies about the improvements in vocabulary acquisition utilizing mobile devices such as applications (Godwin-Jones, 2011; Heil et al., 2016).

One of the applications as a tool in facilitating students in vocabulary learning is the Memrise application. Memrise is an educational medium that is

available for mobile devices launched in 2010 and was established by Ben Whately, Greg Detre, and Ed Cooke. This app is an online language-learning platform that intends vocabulary learning that enables students to enhance foreign languages without a help of a teacher. In addition, this app offers 20 language courses such as English, Russian, German, Turkish, French, Swedish, Portuguese, Norwegian, Danish, Arabic, Italian, Polish, Dutch, Indonesian, Korean, Vietnamese, and Chinese (Karjo & Andreani, 2018).

For each unit in this application, there are 7 to 35 words available for users to learn. The standard learning faster is 5 words per learning session. The learners could customize their preferred learning in the settings accessed through the account icon at the top right corner of the home page. The words first present in the form of flashcards include audion pronunciation and it will repeatedly by four testing types such as multiple choice, listening, spelling, and rearranging. When the users complete six review tests, their new flower memories finish growing. However, when a test question is answered incorrectly, the site will automatically return the learner to the initial flashcard with the relevant vocabulary item for the learner to review and then return to the test circumstance to continue the learning process, including the flower will return become little flower.

Moreover, this app has a complete course that includes more than 5000 photographs as observable background knowledge, because it is easier to understand the meaning when heard sound by the objects in the scenes or pictures, as such the learners do not need any clarification in their mother tongue. Then, the most consistently used in this app are learners are asked to answer a task such as visual context cues with either spoken or written language.

In line with, the distinctive of Memrise from other standardized language learning software, which is typically utilized to complement course instruction and uses various games and tasks to exercise and learned material. The feedback, it would be given immediately in the form of a visual and musical code to show correct or incorrect (Abargoui & Taki, 2018).

This application also has several features such as a profile, setting include setting users' goals and schedules to learn, the history of our progress to know how many words or phrases we have learned, and class level. This app is also provided to download freely in Apple Store and Google Play.

2.1.3 Memrise Application as a Language Learning System

Memrise was founded in 2010 by Oxford University graduate and Grand Master of Memory, Ed Cooke and Greg Detre, a Princeton University computational neuroscientist, specializing in the science of memory and forgetting (Nicklas, 2017). Memrise describes a repetition system approach as combining science, fun, and community in vocabulary memorization, which must be noted equate to language learning.

According to Karjo and Andriani (2018), the Memrise application has some features that consist of visual, audio, and video. There are some challenging features in this app; they are word translation, the flashcard, a challenge for audio choices, a typing challenge, and phrase translation.

Zhang (2019) stated Memrise app has three principles. First, elaborate encoding to connect new words with the meaning by using "*mem''* (mnemonic, etymologies, amusing videos, photos, and example sentences. This term helps users to have last longer memories because it will stimulate user imagination,

senses, and emotions. Second, choreographed testing types to strengthen students' memory and engage students to keep learning. The last is scheduled reminders that will emerge or we could settle on what schedule reminds users to aid students to revisit the vocabulary or phrase that students have learned before the memory fades completely. This feature also provides the time and target that will be settled.

The most interesting thing is this app allows users to create their group and invite other users to join and learn together. For teachers or lecturers, it will be very helpful because they could handle and observe students in the learning process. Memrise app also includes a gamification app because every made or learning new words, the flower garden will a little bit grow to start from a plant with the seed as a symbol to learn new words whenever users do more rehearsal.

Several studies have utilized Memrise app in vocabulary acquisition. Fathi, Alipour, and Saedian (2018) proved the effectiveness of the Memrise app used as an innovative way of learning compared to the traditional way of learning vocabulary acquisition. Coupled with Walker (2015) found the Memrise application is effective to enhance students' vocabulary.

Besides, Nuralisah and Kareviati (2020) reveal that the Memrise app is recommended to be used as an alternative method to improve students' vocabulary acquisition effectively because this application provides two sessions that make students motivated and happier in learning particularly to memorize words. In the first session, the students will show vocabulary in a video that a native speaker talks about and the meanings. Then, students will memorize it. In the second

session, to retain students' new vocabulary, this app provides a diversity of rehearsals or quizzes that relate to the word they have memorized before.

Furthermore, Luczak (2017) indicates that the most significant merits of the Memrise app are the effective vocabulary learning system to build up memorization using techniques that will help language learners' increase and becomes long-term memory. In a process review of students' vocabulary, the Memrise system will remind learners by doing multiple choices and spelling exercises. Therefore, Memrise App can be a recommended tool or media to learn foreign languages, particularly for vocabulary acquisition, because this app is easy and enjoyable to use.

Moreover, this app is a gamification design that possible for the learner will not get bored in the learning process. In addition, this app presents varieties of challenges to build up long-term memory such as word translation, the flashcard to recall a word that students have learned, audio choices and typing challenge rehearsal listening ability, phrase translation, and practice to pronounce the word. Then, learner creates their courses to learn together and be able to know their progress, learning activities, learning units, and leaderboard ranking on the home page of the Memrise app.

2.1.4 Vocabulary Learning through Application

Language learning is one of the most essential aspects of individual life to development and growth. There is two main importance of learning vocabulary, namely vocabulary as the key to communication with others and as a central to learning content (Nation, 2017). Knowledge of vocabulary is known also as

receptive because it is related to a learner's ability to understand the word when listening or reading, and then applies it when speaking or writing (Schmitt, 2014).

As such, vocabulary knowledge is an essential component in learning a foreign language because vocabulary is the fundamental building block of students' four skills namely listening, speaking, reading, and writing skills (Kizil & Savran, 2018). More importantly, Alqahtani (2015) asserted that a limited vocabulary in a second language inhibits successful communication. Wilkins (1972) also claimed without grammar very little can be conveyed, without vocabulary, nothing at all can be conveyed (p.111).

However, a learner also has to learn many aspects of vocabulary such as its spoken and written form, association, and collocation (Nation 2013). Furthermore, Kayi-Aydar (2018) states that improve vocabulary knowledge is not sufficient because it has multi-faceted, including pronunciation, spelling, grammatical, properties, connotations, morphological options, and semantic associates. Those arguments illustrate that vocabulary learning is central to language acquisition because the basics of reading comprehension and language achievement are from vocabulary knowledge (Kieffer & Lesaux (2012); Notion, 2001).

Thus, language instructors have considered to developing effective and efficient pedagogies by using computer-assisted language learning. And rapid development with emerging technologies provide learners with a variety of educational tools to access educational content that creates flexible conditions for ubiquitous learning (Hirschel & Fritz, 2013; Hwang & Tsai, 2011) through mobile assisted language learning (MALL). Mainly capability and connectivity of

smartphones have increased the potential of creating language learning environments both inside and outside the classroom, a study by Wrigglesworth and Harvor (2018) examining how university students utilize smartphones for language learning. Moreover, students use a smartphone to create language learning circumstances.

In addition, mobile assisted language learning (MALL) is helpful to improve vocabulary retention and reading comprehension, students also can achieve better learning outcomes through MALL, and utilizing mobile-assisted indicated a high tendency to participate in vocabulary learning activities (Motallebzadeh & Ganjali, 2011; Mostafa & Zahra, 2014).

In this regard, significant improvement in the functionality of modern mobile or tablet devices alongside escalated access platform among students result in interest in researchers and educators to improve language learning through mobile-assisted language learning (MALL) (Burston & Giannakou, 2021; Hou & Aryadoust, 2021; Nazari & Xodabande, 2020,2021). As such, vocabulary learning through the mobile learning trend has resulted in numerous MALL studies that have investigated language learning. Second language learning is the most frequently selected skill that has been explored in the current MALL studies (Burston, 2015).

Various aspects of empirical studies including learners' different educational levels, L2 proficiency, age, and different approaches to the learning of the target words have been investigated with quantitative, qualitative, and mixed methods. The result of previous studies shed light on the impacts of mobile technologies in language learning and teaching indicating that the use of mobile

devices contributed significantly to language development in general (AbuSa'allek, 2014; Burston, 2013, 2014; Chow et al., 2018; Godwin-Jones, 2011; Golonka et al., 2014; Stockwell, 2013; Sung et al., 2015; Wong & Looi, 2011; Xodabande, 2017) and learning a second/foreign language vocabulary in particular (J.J. Lin & Lin, 2019).

As such, the increasingly speedy development of mobile technology refers to the language learning aspect being more visible. Numerous mobile apps especially language learning apps such as Memrise, Duolingo, Bussu, and Quizlet provide users with chances to get access to multiple functions for language learning within one app because this application is equipped with flashcards, games, audio, videos, and pictures. The most essential mobile apps are these apps quite helpful for vocabulary learning mainly for memorization and putting meaning and context into use.

In line with this, Kohnke (2020) pointed out that most students were satisfied with a mobile app for vocabulary learning, including undergraduate students who are increasingly using an app to enhance their vocabulary independently and to improve their ability for gaining employment. Moreover, this study found that in general, the students felt more productive, challenged to acquire vocabulary for their academic courses, and efficient in the learning process. This study also reported that pronunciation practice is the most beneficial and motivating feature.

Parallelly, Wu (2015) investigated the use of a mobile application for learning 1274 English words. The participants included 70 fourth-year college students. This study utilize a pre and post-test design, this study revealed that the

use of mobile applications contributed significantly to gains in vocabulary by participants in the experimental group.

In a follow-up study, Wu (2019), compared an experimental group that used the application with control and traditional learning materials in his study. The discovery revealed that the participant using mobile applications shows an 8.49% higher in the post-test. In conclusion, the findings from this study demonstrate empirical evidence for the effectiveness of self-directed and outside-the-classroom learning.

Another researcher researched and investigates the effectiveness of mobile-assisted learning with digital flashcards. The findings indicated that the utilization of mobile devices and vocabulary learning applications contributed extremely to developing English language vocabulary among participants in the experiment. This study also reported empirical support long-term effect of vocabulary knowledge development among EFL students. The limitations of this study are despite the experimental group being compared the procedures did not account for while interpreting the findings. Then, need to investigate issues in more detail with the different aspects of learning vocabulary with mobile devices

However, this study merely focuses on Memrise apps because the research conducted about these apps is still less. Memrise app is a vocabulary learning system that effectively helps build memorization due to the frequent revision technique (Luczak, 2017).

2.2 Previous Study

In recent years, the prevalent result of these studies has been tremendously positive towards learning by apps, particularly in terms of flexibility and convenience (Brown, Castellano, Hughes & Worth, 2012; Castaneda & Cho, 2016; Khaddage & Lattemann, 2013; Kim, 2013). Akdemir (2010) who conducted researched about comparison the effectiveness of learning vocabulary via mobile phones versus conventional flashcard with participants from 60 students in university. This study indicated positive impact from the participants the used mobile learning particularly in learning English vocabulary.

Another study contributed that the effectiveness of using smartphones and adopting gamification applications in the classroom will become the future of higher education and increases the productivity of students. For the past decade, numerous empirical studies are exploring the implementation of mobile devices as a learning system support in the teaching and learning process of English vocabulary without any limitation of time and location (Oberg & Daniels, 2013).

It shows that mobile learning has been considered as the integration or revolution in the teaching and learning process that enables studying tightly delimited physical locations. In line Mehdipour and Zerehkafi (2013) shed light on the mobile learning is a portative learning tool that supports teaching and learning. Therefore, Reynolds and Anderson (2015) stated the development of communication technologies has been considered a revolution in education.

For the past decade, numerous empirical studies are exploring the implementation of mobile devices as a learning system support in the teaching and

learning process of English vocabulary without tightly limited physical location and time (Chang & Hsu, 2011; Chen & Li, 2010; Oberg & Daniels, 2013). Moreover, in the learning process utilizing mobile learning provides opportunities for students to learn and improve their skills of students by determining various effective and efficient learning strategies by themselves. It is because mobile learning supports independent learning that allows learners to gather information and expand their knowledge (Mueller, Wood, De Pasquale, D & Archer, 2011).

Naishmit, Lonsdale, Vavoula, and Sharples (2004) pointed out that mobile devices known as handphones and tablets have been successful in providing users with internet connectivity 24/7. Parallelly, Gikas and Grant (2013) explored that mobile learning brings a positive impact on students' learning because it helps students to their learning to access, search and investigate any information or data in their learning process and circumstance.

Technological tools in education areas have extremely influenced technology and demonstrate new methods, and strategies in the field of language learning and teaching (Sulaiman, et. al., 2017). Hence, for the past decade, the variety of applications and programs in particular language learning and vocabulary have emerge and developed for use with the technology (Godwin-Jones, 2011; heil, Wu, Lee, & Schmidt, 2016; Stanley, 2013). Besides, Wang (2011), reveals that MALL-based instruction enables to inspire a student to learn continuously to become proficient in vocabulary, especially English because the applications are easy to use and understandable.

Some research has been studies related to applications, especially through the Memrise app such as Walker (2015) investigated students'

perceptions related to the impact of using Memrise in learning Latin vocabulary and long-term memory of words. This study found that using the Memrise platform for learning is convenient, easier, enjoyable, and quicker. Then, Abarghoui & Taki (2018) explored utilizing the Memrise app, this study measured the effectiveness of using the Memrise app on high school students' perception. Research showed that the Memrise app is an effective app for learning because this study showed significantly 55% preferred learning through this app. After all, it has strong interactive features and interactive learning.

In the Asian context, Nhu and Quyen (2021) have conducted research related to improving vocabulary learning with Memrise mobile application for EFL students in Vietnam, and it shows that applying the application in learning vocabulary is easier for most students felt the flexibility to be used anytime and anywhere. Moreover, this application has helped students to improve their vocabulary, and it proved effective by confirming through surveys and tests. Parallel, Reed, and Hooper (2018) researched students' perceptions of mobile learning of high-frequency vocabulary "Memrise Application" with the aim is to compare two classes of students in the university. Then, exceedingly the students elucidate positive responses toward learning a language using the Memrise application.

Further investigation literature related to Memrise app in Indonesia is still limited. Fadhilawati (2016) refers to learning and reviewing vocabulary using the Memrise app to improve students' vocabulary achievement. This study reveals that Memrise is capable to improve students' vocabulary because it helps students to have good vocabulary achievement and to review vocabulary material

effectively. Implications are discussed focusing on a similar study in another area and also suggested to English lecturers particularly in teaching vocabulary to use this application as a learning media.

In line with this, Izah (2019) reveals that the Memrise app has been justified as an effective media in language learning because it could be applying tightly delimited physical locations. In addition, this app has quicker access, is easy to use, and is flexible to learn. However, the main problem of this app is the limited internet that must have access. Parallelly, Aminatum and Oktaviani (2019) found that the Memrise application help students in learning and improve their vocabulary because it could be accessed without the tightly delimited time and physical location. Eventually, it supports students' independent learning skills and reinforces their English skills.

Rosydah (2018) has researched improving students' mastery of irregular verbs by using the Memrise application in the second grade of students in senior high school. She stated that treatments using the Memrise application were effective to improve students' mastery of irregular verbs.

Meanwhile, recent literature pertinent to the Memrise app, Nuralisah, and Kareviati (2020) admitted that the app is an effective media for increasing students' vocabulary mastery because the student could easily and happily in the learning process especially in memorizing words. The implication of this study is this app could be a reference learning strategy for teachers because the main problems of students are difficulties in translating English words and less varied strategies in teaching.

Based on those studies, most researchers elucidate positive results including the interesting and interactive features, and flexibility used to enhance students' vocabulary in fun learning.

Even though several researchers have conducted studies about the Memrise app it is still limited that relate to students' experience in vocabulary learning through this application, especially for students at university.