Implanting Vocabulary for Long Terms Memory through Memrise and Quizlet Applications

Dian Fadhilawati[1*], Bahrul Ulum[2], Dwita Laksmita Rachmawati[3] (iD)

[1,2] English Education Department, Balitar Islamic University, Blitar, Indonesia
[3] Economic Department, Universitas Merdeka Pasuruan, Pasuruan, Indonesia

A B S T R A K

Kemampuan siswa dalam memahami dan menggunakan kosakata akademik dan penelitian kurang. Oleh karena itu, penelitian ini mencoba untuk meningkatkan penguasaan kosakata siswa dengan menerapkan Aplikasi Memrise dan Quizlet. Penelitian ini menerapkan Penelitian Tindakan Kelas dengan menggunakan empat prosedur yaitu Perencanaan, Tindakan, Observasi, dan Refleksi. Peneliti memperoleh data dari tes dan angket. Hasil penelitian menunjukkan bahwa penanaman kosakata melalui aplikasi Memrise dan Quizlet meningkatkan prestasi belajar siswa. Selain itu, siswa juga menunjukkan sikap positif terhadap penerapan Memrise dan Quizlet untuk pembelajaran kosakata. Dosen atau guru dapat menggunakan Aplikasi Memrise dan Quizlet sebagai media untuk memotivasi siswa dan memberikan pembelajaran yang menyenangkan dan mandiri. Prestasi kosakata siswa meningkat setelah mempelajari kosakata menggunakan aplikasi Memrise dan Quizlet dari hasil yang disajikan di atas. Mayoritas partisipan dalam penelitian ini juga menyukai penggunaan aplikasi Memrise dan Quizlet untuk menanamkan kosakata. Oleh karena itu, peneliti menyarankan agar para guru atau dosen yang mengajar kosa kata menggunakan aplikasi Memrise dan Quizlet sebagai media alternatif untuk menanamkan materi kosa kata kepada siswa dalam memori jangka panjang.

A B S T R A C T

The student's ability to understand and use academic and research vocabulary was lacking. Therefore, this research tries to enhance the students' vocabulary achievement by applying Memrise and Quizlet Applications. This research applies Classroom Action Research using four procedures: Planning, Action, Observation, and Reflection. Researchers obtained data from tests and questionnaires. The results showed that vocabulary planting through the Memrise and Quizlet applications increased student achievement. In addition, students also showed a positive attitude towards the application of Memrise and Quizlet for vocabulary learning. Lecturers or teachers can use the Memrise and Quizlet Applications as a medium to motivate students and provide fun and independent learning. Vocabulary achievement improved after learning vocabulary using Memrise and Quizlet applications from the results presented above. This study also used the Memrise and Quizlet applications to instil vocabulary. Therefore, the researcher suggests that teachers or lecturers who teach use the Memrise and Quizlet applications as alternative media to instil word material in students in the long term.

1. INTRODUCTION

Understanding academic and research vocabulary is essential in language learning especially for the students who want to write a thesis. Vocabulary is a vital sub-skill for learning English as a foreign language (Alqahtani, 2015a; Waluyo & Bakoko, 2021). Without having appropriate and sufficient vocabulary, the students will have problems using English for written or oral communication (Hamer & Rohimajaya, 2018; Tovar, 2017). Furthermore, the origins of new words are highlighted a lot in books or schools, so vocabulary is an essential element in studying foreign languages (Alqahtani, 2015b; Hamer & Rohimajaya, 2018). Vocabulary also becomes the key to success in learning English in which by having adequate Vocabulary, the students will learn the targeted language quickly, especially in speaking, writing,

*Corresponding author
E-mail addresses: dianfadhilawati@yahoo.com (Dian Fadhilawati)

reading, and listening (Fakhruddin et al., 2021; Indriyani & Sugirin, 2019). Around thirty percent of L2 research in the previous twelve years has focused on vocabulary learning in diverse situations (Stroud, 2014). Many of empirical research has discovered substantial links between students' receptive vocabulary capacity and their writing, speaking, reading, as well as listening abilities (Robertson, 2015; Sage et al., 2020; Sanosi, 2018; Setiawan & Wiedarti, 2020; Shokrpour et al., 2019; Tran, 2016). Nevertheless, students have always found it difficult to learn L2 vocabulary, and their success is typically determined by the amount of their language learning autonomy (Hyso & Tabaku, 2011; Nakata, 2011; Nejati & Jahangiri, 2018; Okkan & Aydin, 2020; Platzer, 2020). The research stated that almost all of the students studying English in a foreign language setting had difficulty in pronouncing the words, writing and spelling the words, differencing the grammar of a term called inflections, selecting the appropriate meaning of the words, using the words in context, and finding idiomatic phrases and expressions (Alqahtani, 2015b; Rohmatillah, 2014). Self-directed learning does not emerge on its own, as essential as it may seem, and it is dependent on educators' assistance in teaching learners the way to learn independently in the early steps of language learning.

Learning media is one way that can make students learn Mandarin. Learning media can help students learn (Anindyajati & Choiri, 2017; Fakhruddin et al., 2021). Other research findings also state that learning media can help students understand and memorize English vocabulary (Fidiyanti, 2020; Hamer & Rohimajaya, 2018; Taharyanti, 2017). Teachers can use learning media to assist students in learning. Learning media is very important to be used by teachers in independent learning. Recently, some applications in internet websites have been used to assist the development of students' vocabulary learning autonomy. Memrise and Quizlet appear to be the two of the powerful applications (Alam & Mizan, 2019; Lam et al., 2018; Lander, 2016; Łuczak, 2017). Nonetheless, several empirical research promoting the usage of internet websites that build gamification tools like Memrise and Quizlet for improving students' vocabulary learning autonomy is still limited. Moreover, the effect of the utilization of online applications and students' outcomes is still scant. As a result of this urgency, the present research uses a classroom action research methodology to investigate learning using vocabulary lists that is assisted by Memrise and Quizlet. Learning a language through the list of vocabularies was chosen because it is believed to enhance students' learning autonomy, meanwhile gamification via Memrise and Quizlet was preferred since it has the capacity to encourage student vocabulary learning outside of the school environment (Esmaeili & Shahrokhi, 2020). Teachers can use this application in teaching English vocabulary to students. Through this application, teachers can create engaging English learning media for students. The investigators hope to gain scientific data of how the assistance of online applications impact students' vocabulary learning results and promotes self - directed learning by using a classroom action research in which students experience both with and without the aid of the online tools. The purpose of this study is to analyze the increase in students' vocabulary mastery by implementing the Memrise and Quizlet Applications at a private university in East Java, Indonesia.

2. METHOD

The researchers applied Classroom Action Research (CAR). In this research, the researchers used Classroom Action Research by following Kemmis and Taggart Procedures (Kemmis et al., 2014). They stated that within one period of Classroom Action Research, there are four essential steps, namely planning, acting, observing, and reflecting. The first step of Classroom Action Research is planning. In planning, the researchers should plan the teaching and learning strategy to solve the students' problems. In planning, the researchers conducted many activities, they are developing lesson plan, preparing vocabulary lists that the students should learn through Memrise and Quizlet applications, creating vocabulary course in Memrise application, creating vocabulary course in Quizlet application, designing post-test, preparing the questionnaire form, finally deciding the criteria of success of the research. The second step of classroom action research is acting. The researchers conducted a teaching-learning process online by applying Memrise and Quizlet, especially learning academic vocabulary and research vocabulary. In acting, the students learned academic words in Memrise application at https://app.memrise.com/course/5750272/vocabulary/ as described in Figure 1.

The students also learned words/phrases about research in the Quizlet application at https://quizlet.com/id/511341129/research-vocabulary-flash-cards/. In acting, there were four meetings in every cycle. In this case, two sessions for learning academic vocabulary by applying Memrise application, which covers two levels of learning, and two sessions for learning research vocabulary by using Quizlet, which covers the eight modes of discourse, they are 5 ways of study which covered Flashcard, Learn, Write, Spell, and Test; and 3 Modes of Play which covered Match, Gravity, and Live. The third step of Classroom action research is observing. In the observing phase, the researchers administered a post-test to the

research participants to obtain the score after learning Academic Vocabulary on Memrise application and research vocabulary on Quizlet Application. The students' post-test was a multiple-choice test. The total Post-test was 100 items. In this case, the researchers conducted a post-test online by applying the Quizizz Application. After completing the post-test, the researchers administered the questionnaire to gain the students' responses about implementing Memrise and Quizlet application for learning Vocabulary. The questionnaire consisted of 10 statements about the students' opinion in learning Vocabulary by applying Memrise and Quizlet Applications and five options of Likert Scales, namely AA: Absolutely Agree (Scored 5), A: Agree (Scored: 4), N: Neutral (Scored; 3), D: Disagree (scored 2), and AD: Absolutely Disagree (Scored 1).
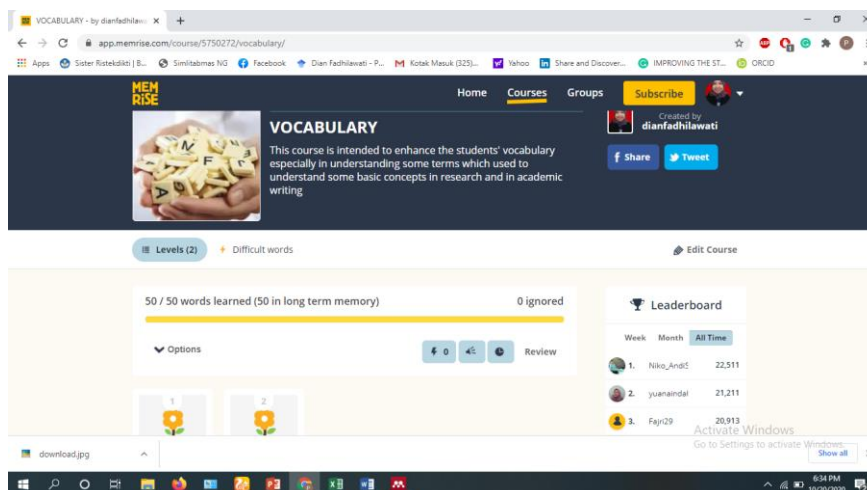

Figure 1. Vocabulary Course in Memrise Application

Furthermore, to analyze the students' post-test results, the researchers downloaded and investigated the students' post-test reports directly from the Quizizz application. In this case, the researchers paid attention to the students' reports to know the individual achievement and the class report to determine the average class score after Memrise and Quizlet implementation for learning Vocabulary. Then, to analyze the students' questionnaires, the researchers calculated the percentage of the data gained from the questionnaires. After calculating the percentage of the students' questionnaire responses, the researchers consulted the result to know the students' answers with the following criteria of score interpretation. The following criteria is based on Ary et al. (2010) in Table 1.

Table 1. Score interpretation criteria

Interval Score	Interpretation
0% – 20%	Very bad
21% – 40%	Bad
41% – 60%	Moderate
61% – 80%	Good
81% – 100%	Very good

The last step in classroom action research is reflecting. In reflection, researchers consulted the data findings with the specified criterion of the research success that they had planned before. The researchers would stop the process of improvement on cycle one if 1) every student achieved ≥ 75 in the post-test, and 2) the average students' score was ≥75.00 in the post-test. If the research result did not reach the study's success criterion, the researchers would continue to the next cycle.

3. RESULT AND DISCUSSION

Result

The difficulty in learning vocabulary is faced by the students in the university. On the pre-test result, the students' vocabulary achievement, especially in pronouncing, writing, defining, and using the research vocabulary and academic vocabulary, was unsatisfactory. The students' mean score was (55.62). The students' achievement in the pre-test was under the standard minimum mastery required in the university (75.00). This research consisted of 2 cycles of action. After two cycles of activities, the students' vocabulary achievement increased. Based on data analysis shows that the students' achievement in cycle 1 increased

from 55.62 in the Pre-Test to 77.08. From the data Pre-Test in cycle 1, we know that the student's average score was 77.08, which means an improvement. However, there were still three students who did not pass the minimum criterion mastery (75). Therefore, the researchers continued to cycle 2. In cycle 2, the researchers asked the students to focus on terms or phrases of Academic and Research vocabulary that was still difficult for them and gave them additional time to review the materials in the applications. After implementing Memrise and Quizlet in cycle 2, the students' achievement increased to 89.54 in the post-test, and all of the participants pass the targeted criterion mastery 75. After the researchers conducted a post-test in cycle 2, the researchers administered the questionnaire to gain information about the students' attitude to implementing Memrise and Quizlet application for learning Research and Academic Vocabulary in Table 2.

Table 2. The Result of Students' Perception of the Implementation of Memrise and Quizlet in Learning Vocabulary

STATEMENT	AA 5	A 4	N 3	D 2	AD 1	TOTAL SCORE	%	CRITERIA
I am motivated to learn vocabulary through Memrise and Quizlet.	8	4	1	0	0	59	91	Very good
Learning Vocabulary through Memrise and Quizlet is fun and interesting	10	3	0	0	0	62	95	Very good
Learning Vocabulary through Memrise and Quizlet is easy	7	5	1	0	0	58	89	Very good
I can review vocabulary materials in Memrise and Quizlet anytime and anywhere I want	7	6	0	0	0	59	91	Very good
I can memorize the Vocabulary well after learning through Memrise and Quizlet	6	6	1	0	0	57	88	Very good
I like the eight discourse modes for learning and playing Vocabulary in Quizlet	8	5	0	0	0	60	92	Very good
Learning Vocabulary through Memrise and Quizlet is cheap	7	5	1	0	0	58	89	Very good
I like the rank (Leaderboard) embedded in Memrise	6	7	0	0	0	58	89	Very good
I got better achievement in my test after studying Vocabulary through Memrise and Quizlet	9	4	0	0	0	61	94	Very good
Learning Vocabulary in Memrise and Quizlet is like playing game	8	4	1	0	0	59	91	Very good
AVERAGE						59	91	Very good

Note: AA: Absolutely Agree; N: Neutral; AD: Absolutely Disagree; A: Agree; D: Disagree

From the result presented in Table 2 above, we can conclude that most participants are engaged in learning Academic and Research Vocabulary via Memrise and Quizlet Applications. Memrise application has some features to arouse the students' motivation to learn Vocabulary. Memrise application applies the Memes method, Choreographed Testing and Planned Alert, 1) Memes Method; in Memrise, the students can create their Meme to remember the word they learned. They can add a picture, video, text, etc., which makes them motivated to learn. 2) Choreographed Testing: Learning through Memrise application will make the students have fun ways in memorizing or recalling the vocabulary, 3) Planned alert: In learning Vocabulary through Memrise, the students will have an alert to remember the Vocabulary that they should know. Memrise uses a set a combination of technology and science that turns the students' minds to life. Reading endless lists of terms and phrases is tedious, and our brain knows it. Memrise can facilitate the students to use Vocabulary that they learn in a variety of ways. Besides, Quizlet also provides eight discourse modes that arouse the students' motivation to learn Vocabulary. The students are encouraged to learn Vocabulary in Quizlet because they enjoyed the learning modes offered in Quizlet. For instance, learners can display their rank position and score in the matching game and reattempt to achieve a higher score. Further, when studying vocabulary, they do not get bored quickly.

In this case, Quizlet Application provides eight discourse modes that can help the students review their lessons by applying the appropriate mode for them. The eight discourse modes in Quizlet are: 1) Flashcards: In this mode, the students can review terms and definitions as they are plying flashcards. 2) Learn: In the Learn mode, the student personalized study mode based on how well they know the study set's information. 3) Write: In the Write mode, the students are given the questions they must answer by writing. 4) Spell: In the Spell mode, the students listen to dictating the terms or definitions they should type what they heard. 5) Test: In the Test mode, the students can test themselves on how well they know or understand the material in a study set. 6) Match: in the Match Mode, the students do a time-based game where they must match terms with the provided definitions as fast as possible. 7) Gravity: In the gravity mode, the students can play a level-based game to answer the questions before being hit by an asteroid. 8) Play: The students can play vocabulary games lively with other competitors in the play mode.

Discussion

Most of the students believe that learning Vocabulary through Memrise and Quizlet is fun and engaging. They also agree that learning Vocabulary through Memrise and Quizlet is an essay. It is in line with other research stated that additional advantages of Memrise are faster access, ease to operate, and flexibility (Izah, 2019; Pham, 2018; Walker, 2015). Furthermore, it is also in line with Fadhilawati and Sari (Fadhilawati & Sari, 2018). They stated that one of the advantages of applying Quizlet is the students can access the Quizlet at home or wherever they go. Most of the students agree that they can review vocabulary materials in Memrise and Quizlet anytime and anywhere they want. In this case, the students can use their smartphones or laptops to access the vocabulary materials, learn them, and review them in a fun way. Memrise is an online program used to understand the language on smartphones, tablets, computers, and apps easily to construct long-term vocabulary memory through rigorous and regular vocabulary testing (Walker, 2015). Furthermore, by implementing "Memrise," students will add a new word/ phrase in their brains and remember them like planting a new seed in their memories. Whenever they plan to revisit that terms or phrases, Memrise expands like a bit of flower. Memrise continues to grow by examining at the appropriate time as soon as possible, and the students have a beautiful garden of memory about the vocabulary they learned (Fadhilawati, 2016; Fathi et al., 2018).

The students can memorize the vocabulary well after learning through Memrise and Quizlet.

Memorizing Vocabulary for long-term memory is a challenging task for most students in our classroom. However, by applying the appropriate applications such as Memrise and Quizlet, the students' ability to memorize vocabulary becomes better. That result is in line with research that Memrise has a feature called spaced repetition (Hasan Affandi & Syafi 'i, 2018). After the students do their learning and review the terms that should be learned, they will have the flower bloom up as the sign to the words or phrases they have learned many times. Memrise uses memes produced by or commonly called community-based memory devices (mnemonics and memory aids) (Fadhilawati, 2016; Fathi et al., 2018). The Memrise Meme could be in etymology, mnemonics, funny pictures, videos, phrases, or text to assist the students in connecting to what they learn. Using Memes for the student's learning allows them to get long terms of memory and promotes intricate coding, strengthening their brain's creativity.

The higher the student's brain reminds the word, the more they remember it. Furthermore, Memrise has a feature called Choreographed testing. Memories recalling is essential to students. We have a deep and efficient memory in our brains to recall experiences. Memrise lets students remember what they have learned in an enjoyable process. The higher memory the minds recall, the stronger the memory will be. Besides, Memrise has a feature called Scheduled Reminder-In vocabulary instruction, the students must have a timeline for teaching and learning and evaluating the lessons (Fadhilawati, 2016; Lam et al., 2018; Tran, 2016). The memory would steadily diminish over time without developing a love for studying and reviewing lessons daily and regularly. It is also necessary for the students to revisit the vocabulary to get long-term memory of their studied materials. In this situation, the Memrise application would inform the students which one the term needs to review. The students can exercise and recall the content, estimate the stage at which they will lose it, and keep studying to be more productive and successful. Furthermore, this research result also in tune with other research who revealed that implementing Quizlet application in learning vocabulary made the students memorize the vocabulary easily and quickly (Hikmah, 2019; Sanosi, 2018).

Moreover, the students also argue that they like the eight discourse modes for learning and playing Vocabulary in Quizlet. Quizlet has eight modes of discourse that can enable the students to analyze the vocabulary lessons, such as 1) Flashcards: In this mode, they will check the words and meanings when they connect a flashcard. 2) Learning: The student adapts studying to their knowledge of research facts in the learning style. 3) Write: The students have to write in Writing Mode to address their questions. 4) Spell: the students should type the words or meaning based on what they heard in Spell mode. 5) Test: the students

will test their knowledge or comprehension of the subject matter in a study package. 6) Match: students must do a time-based game in Match Mode, in which words must match the meanings they have at the earliest opportunity. 7) Gravity: In the mode of gravity, students will play a level game to answer appropriately before an asteroid reaches them. 8) Live: Students can play Vocabulary with other participants in live mode. All the discourse modes in the Quizlet application include input and error corrections that render autonomous learning highly efficient (Enayati & Gilakjani, 2020; Esit, 2011; Sanosi, 2018). Besides, Quizlet users have more choices for using each discourse mode, such as addressing terms or meanings, turning on the audio or not, and deciding to learn all words or particular phrases.

Next, most of the students stated that they like the rank (Leaderboard) embedded in Memrise. Lastly, the students very agree that learning vocabulary in Memrise and Quizlet is like playing a game. That result is in line with other research who stated that learning vocabulary through Memrise makes the students enjoy learning vocabulary (Anjaniputra & Salsabila, 2018; Fadhilawati, 2016). Besides, they can use their learning and recalling vocabulary time to be an excellent playtime for studying. So, studying and recalling vocabulary through the Memrise application can become the favorite playtime for the students (Köse et al., 2016; Setiawan & Wiedarti, 2020). Moreover, by learning Vocabulary through Quizlet, the students will also have excellent playtime activities. reported that Quizlet is an application that enables learners to access the site and study vocabulary for flashcard collections using the various game of learning modes.

Vocabulary instruction is very daunting. Teachers and students should take into account the strategies to learn Vocabulary in effective and efficient ways. Vocabulary acquisition needs strategies that involve students in learning actively (Indriyani & Sugirin, 2019; Zou et al., 2019). In teaching Vocabulary, people must use engaging media to make the students interested in our lesson and review the lesson independently outside of the classroom. Memrise application is a free instructional program that maneuvers the greatest learning and blends it with a fun, quick, and prevalent word-learning interface. It uses modern cognitive science to encourage students to learn up to five times quicker (http://www.prnewswire.com). Moreover, the Quizlet application is an online vocabulary-study tool that lets users build or use other learners' flashcards (Esmaeili & Shahrokhi, 2020; Gorjian et al., 2011; Wright, 2016). Through Quizlet, people can create vocabulary material for our students easily. The students can access the vocabulary materials through their smartphones or the web. This application assists the students in learning vocabulary and any knowledge they need through learning resources and games. There are some advantages of using Quizlet in the teaching-learning process; for example, Quizlet Application can help the teacher differentiate the students' material review (Lam et al., 2018; Sanosi, 2018; Tran, 2016).

Using Quizlet in the teaching-learning process gave many advantages: 1) Quizlet lets the learners read the word and meaning aloud, improving learners' comprehension of pronunciation; 2) Quizlet offers targeted pronunciation feedback; 3) Quizlet offers adaptive instruction to assist the learners in concentrating on the most challenging things; 4) Quizlet creates adjustable unplanned assessments for the learners to enhance their memory; 5) Quizlet creates immersive games to help learners research the content of the course; 6) The learners can learn through Quizlet at home or on the go; 7) The learners can produce paper handouts, flashcards, or games in Quizlet; 8) The Learners can transfer or switch up different card sets to make a customized ornament; 9) Teachers can make a Quizlet "class" for the learners and monitor their learning progress; 10) If learners are acquainted with Quizlet.com, they will encounter millions of other user-made flashcards; 11) Learners could distribute Quizlet card sets and use them on other applications or sites (Anjaniputra & Salsabila, 2018; Fadhilawati & Sari, 2018).

Furthermore, some researchers proved the effectiveness of Memrise for teaching and learning vocabulary. The research found that Memrise positively impacted the students' learning language for long term memory, especially Latin vocabulary (Fathi et al., 2018; Walker, 2015). Moreover, other research stated that Memrise is an effective media for the teaching-learning process (Abarghoui & Taki, 2018). However, they highlighted that Memrise could not replace direct language teaching and learning, but it can support language teaching and learning. Some previous researchers stated that students showed a positive attitude toward three aspects: the utility, the ease to use, and the desire to use Quizlet (Dizon, 2016). Therefore, he supports the adoption of Quizlet application for learning foreign languages.

Students in the class using gap-filled application flashcards performed better and somewhat greater on tests with new content for the same vocabulary (Barr, 2016). Moreover, other research claimed that Quizlet could generate students' autonomy, persistence, focus, and attention, as well as engagement (Anjaniputra & Salsabila,2018). Furthermore, the research stated that the conventional method for studying informatics terms made the students passive and bored with the lessons (Hikmah, 2019; Rachmawati et al., 2021). Therefore, the researcher tried to propose Quizlet for teaching and learning Informatics terms to the students at Nurul Jadid University, Paiton Probolinggo. In this case, the researcher designed learning activities based on the menus covered in Quizlet, for example, Flash Cards, Leexampleller, and Test. By

applying Quizlet, the teaching-learning process became more interesting. The researcher reported that Quizlet was more interactive and provided the learners with instant feedback as they go through the activities within a set of terms. Furthermore, the researchers suggested the students pay attention to the terms that need to review and make a regular schedule to learn those terms. Moreover, the researchers only used limited vocabulary to understand research and academic writing because of time limitations. Therefore, the researchers suggested that future researchers examine the effectiveness of Memrise or Quizlet for Learning all the Academic Words List.

4. CONCLUSION

The students' vocabulary achievement increased after learning vocabulary using Memrise and Quizlet applications from the result presented above. The majority of the participants in this research also favored using Memrise and Quizlet applications to implant the vocabulary. Therefore, the researchers suggest that the teachers or lecturers who teach vocabulary use Memrise and Quizlet applications as an alternative media to implant the vocabulary materials to the students in long-term memory.

5. ACKNOWLEDGMENTS

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