A Comparative Study of Students' Vocabulary Achievement Between Those Who Are Taught Using Memrise and Using Quizlet

Filhmayanti E. Muthalib[1], Rohmana[2], Muh. Khusnun Muhsin[3]
filhmayanti@gmail.com
[1,2,3]*Halu Oleo University, Indonesia*

ABSTRACT

The purpose of this study is to find out whether there is or not a significant difference in vocabulary achievement between students who are taught using Memrise and those who are taught using Quizlet. This study is focused on the use of the website versions of Memrise and Quizlet to improve the vocabulary achievement of 2nd-semester students of the Sharia Faculty of IAIN Kendari in the academic year of 2022/2023. This study used a quantitative method with comparative research as its design. A purposive sampling technique was used to select the sample of this study, resulting in 22 students of HKI A chosen to be taught using Memrise and 22 students of HKI B chosen to be taught using Quizlet. The data of this study was collected through a pretest and a posttest and then was analyzed by using descriptive statistics (mean, minimum, maximum, and standard deviation) and inferential statistics (paired samples t-test and independent samples t-test). The results of this study show that in both HKI A and HKI B, the mean of the posttest scores is higher than the mean of the pretest scores (61.27 > 46.18 and 55.27 > 30.05, respectively) and the difference in these mean values is statistically significant when tested with the paired samples t-test, where the values of Sig. (2-tailed) of HKI A and HKI B are 0.002 and 0.000, respectively. However, when the mean of the NGain of HKI A is compared to the mean of the NGain of HKI B, the result of the statistical analysis indicates that there is no significant difference in students' vocabulary NGain scores for both classes as the value of Sig. (2-tailed) is greater than the alpha value (0.216 > 0.05). Therefore, it can be concluded that both the use of Memrise and the use of Quizlet website versions are equally effective in improving the vocabulary achievement of undergraduate students.

Keywords:
Memrise, Quizlet, Students' vocabulary achievement.

1. Introduction

Vocabulary can be simply defined as words that a language has (Hornby et al., 2005; McCarthy, 1990). Lehr et al. (2004) broadly define vocabulary as "knowledge of words and word meanings", while Neuman and Dwyer (2009) specifically identify vocabulary as productive and receptive words that one should cognize in order to have successful communication. Alternatively, vocabulary can be viewed as 'items' rather than 'words' (McCarthy, 1990; Ur, 1996) as there are items of vocabulary that contain two or more words yet they convey a single idea (e.g., post office, mother-in-law) (Ur, 1996).

As an item of language, vocabulary plays an important role in either acquiring or learning a language (Alqahtani, 2015). The two following illustrations will help to understand the importance of vocabulary in language acquisition and language

learning contexts. First, a one-year-old American girl grabs her father's hand and points to the bunch of things on the table while saying "Doll!". The father knows that the girl wants him to take the doll, and therefore he takes the doll and gives it to her. Second, an American tourist got lost after going shopping in one of the traditional markets in Kendari. She then met a student passing by and asked the student how to get to 'Hotel Z' in English. The student understood the meaning of the question, yet he answered it mostly in Indonesian due to his limited vocabulary in English, and eventually, the tourist did not get the point of what the student saying. From the two illustrations, it can be seen that even with a single word, people can understand what others mean (Text Inspector, 2020), yet inadequate vocabulary will obstruct effective communication within a language (Alqahtani, 2015). Thus, vocabulary is very important in language contexts as it helps people to communicate with one another.

As it is mentioned that vocabulary is very important in language contexts, it is also revealed that vocabulary plays a more important role than grammar in the language context. Akdogan (2017) argues that as a compound of form and meaning, vocabulary plays important role in communication rather than grammar as people can still communicate without grammar, yet without vocabulary, it is difficult to communicate effectively; which this is in line with Wilkins (in Thornbury, 2002, p. 13) who stated that "without grammar, very little can be conveyed, without vocabulary, nothing can be conveyed." Furthermore, it is also noticed that even though learners have excellent grammar and pronunciation learning, it is almost impossible for them to communicate effectively in the target language if they do not have enough vocabulary to express themselves (Manguntara et al., 2023; McCarthy, 1990). In this case, people can still communicate and understand each other without being correct in grammar, yet it will be hard to do so without having vocabulary.

Vocabulary can as well affect the performance of the four language skills, as Richards and Renadya (2002) note that one's ability in listening, speaking, reading, and writing is determined by the vocabulary one possesses. For instance, in the listening and reading skills context, people will find it difficult to comprehend the meaning of a spoken and/or written text when they have never seen or heard the vocabulary used within the text. Besides, in the speaking and writing skills context, people can express their thoughts easily in both their speech and writing as they have a rich vocabulary (Text Inspector, 2020). These examples show that vocabulary undeniably determines how well the language proficiency one has; as the more vocabulary someone masters, the better language skills he or she has.

Regardless of the importance of the vocabulary aforementioned, there are still problems found in the vocabulary learning process in EFL classrooms. Some students of the Sharia Faculty of IAIN Kendari admitted that they still had some difficulties in learning English including difficulty in understanding reading texts, difficulty in translating texts, difficulty in memorizing vocabulary, and difficulty in pronouncing the vocabulary. The problems with the vocabulary learning process have also been noticed by Rohmatillah (2014) who stated that in learning vocabulary, some students still struggle with difficult pronunciation, different grammatical forms, the various meanings of certain vocabulary, and how to use the vocabulary appropriately based on a particular context. Additionally, the memorization method that teachers

commonly use to teach vocabulary is not quite effective and tends to make the students lack the motivation to learn (Akdogan, 2017; Alberth et al., 2024).

Since there are still some problems that exist in the vocabulary learning process, it is then necessary to find ways that are effective to increase students' motivation to learn vocabulary and improve their vocabulary achievement. One of those effective ways is the use of digital flashcards. Digital flashcards can be viewed as the reproduction form of the paper-based flashcard, by which the users of digital flashcards, in general, are enabled to make their flashcards by adding words and pictures, to study and review the flashcards, as well as send the flashcards to other users (Green & Bailey, 2010). Of all websites and smartphone apps that have digital flashcards as their main feature, some of them can help students achieve better vocabulary, including Memrise and Quizlet.

Memrise is a language learning application that offers different learning from a textbook (Memrise, n.d.). To help its users better learn a language, Memrise provides the basic translation of words and phrases in users' source language as well as the exact use of those words and phrases in a real-life context (Memrise, n.d.). Moreover, Memrise extends features for better learning such as mems (picture as a mnemonic tool to remember vocabulary), spaced repetition, skill tests (video, audio, and speed review), leaderboard, and also a reminder (Fadhilawati, 2016; Fisher, 2020; Rosydah, 2018; Shellenbarger, 2015). Some previous research conducted shown that Memrise is effective as an instructional resource (Abarghoui & Taki, 2018) and its use can improve students' vocabulary achievement as well as increase students' motivation in learning (Fadhilawati, 2016; Fadhilawati & Sari, 2018; Rosydah, 2018).

Meanwhile, Quizlet is a study tool that emphasizes the use of flashcards (Quizlet, n.d.). As a study tool, Quizlet helps its users, especially students, to learn a new concept or new vocabulary by allowing its users to create their own study sets of learning material and to review the learning materials in various modes, including flashcard, learn, write, spell, test, match, etc. (Blackwell & Kane, 2014; Setiawan & Wiedarti, 2020; Vargas, 2011). The various features that Quizlet offers let its users learn not only languages but also some other courses such as science, math, social science, arts, etc. (Quizlet, n.d.). Some studies have shown that the use of Quizlet has brought a positive effect on vocabulary improvement (Atmasari, 2019; Vargas, 2011) and has resulted in increased motivation (Setiawan & Wiedarti, 2020) and engagement of students (Anjaniputra & Salsabila, 2018).

So far, there has been a large body of research addressing the use of either Memrise (Fadhilawati, 2016; Fadhilawati & Sari, 2018; Rosydah, 2018) or Quizlet (Atmasari, 2019; Setiawan & Wiedarti, 2020; Vargas, 2011) to improve students' vocabulary achievement. However, there are only a few types of research conducted on how undergraduate students' vocabulary achievement can be affected by comparing the use of Memrise and Quizlet website versions. Furthermore, considering that Memrise and Quizlet have pretty similar functions and that some students of the Sharia Faculty of IAIN Kendari still have problems learning vocabulary, this present study is therefore set to compare the effect between the use of Memrise and Quizlet websites in improving vocabulary achievement of 2nd-semester students of IAIN Kendari.

2. Methods

In carrying out this study, the researcher employed a quantitative method with comparative research as its design. Sugiyono (in Onibala et al., 2017) suggests that comparative research is used to compare the state of one or more variables in two or more different samples, or at two different times. Thus, in this study, the researcher administered pretest and posttest to two different classes with treatments in between. The first class was given a pretest, a treatment using Memrise, and a posttest, whereas the second class was given a pretest, a treatment using Quizlet, and a posttest. The researcher then compared the scores gained by students in each class to see whether there was a significant difference between the use of Memrise and Quizlet websites in improving students' vocabulary achievement.

The population of this study was all the 2nd-semester students of the Sharia Faculty of IAIN Kendari in the academic year of 2022/2023, with 160 students in total. To select the sample, the researcher employed the purposive sampling technique, resulting in 22 students of HKI A being chosen to be taught using Memrise and 22 students of HKI B being chosen to be taught using Quizlet.

To collect the data, the researcher first prepared the instrument, which the instrument used was a vocabulary test with the contents focused on the vocabulary of law. The vocabulary test itself consisted of 4 parts with 45 items in total. Once the instrument was ready, the researcher then piloted the test to students of the Sharia Faculty of IAIN Kendari who were not selected as the sample of this study. After making sure that the test used was valid and reliable, the researcher then administered the pretest to students of HKI A and HKI B, which the pretest lasted for 75 minutes. When the students were done doing the test, the researcher then explained to the students of HKI A and students of HKI B how to make a new account on Memrise and Quizlet websites, respectively. After that, students were asked to join the course or the class the researcher had created on both websites. Following the pretest, the researcher started carrying out the treatments, which for HKI A, the researcher taught vocabulary by using Memrise, while for HKI B, the researcher taught vocabulary by using Quizlet. The treatments for both classes lasted for 3 meetings, with 150 minutes lasting in each meeting. After giving treatments, the researcher administered the posttest to both classes, which the posttest had the same duration and the same structure as the pretest.

Furthermore, to analyze the data in this study, the researcher first scored the results of students' pretest as well as posttest by using the following formula:

$$\text{Score} = \frac{Acquired\ Score}{Maximum\ Score} \times 100$$

After scoring the results of the students' pretest and posttest, the researcher inputted the scores into SPSS 26 in order to employ descriptive statistics (to describe mean, minimum, maximum, and standard deviation), conduct normality (to examine whether the data was normally distributed or not) and homogeneity tests (to examine whether the data was homogenous or not), and employ inferential statistics (paired samples t-test and independent samples t-test). Afterward, the researcher described the outputs from SPSS by interpreting the data and drawing a conclusion.

3. Result

In this section, the researcher presents and describes the results of descriptive statistics and inferential statistics of the collected data. The results of the descriptive statistics can be seen in the following table.

Table 1. Descriptive Statistics of Students' Pretest and Posttest Scores on Both Classes

	N	Mean	Minimum	Maximum	SD
Pretest HKI A (Memrise)	22	46.18	19	70	13.556
Posttest HKI A (Memrise)	22	61.27	35	96	17.016
Pretest HKI B (Quizlet)	22	30.05	8	53	10.408
Posttest HKI B (Quizlet)	22	55.27	16	89	20.983

Based on Table 1 above, it can be seen that in HKI A, the mean of the pretest is 46.18, while the mean of the posttest is 61.27. Meanwhile, in HKI B, the mean of the pretest is 30.05, whereas the mean of the posttest is 55.27. Apparently, there is a difference in the means of the pretest and posttest of HKI A as well as in the means of the pretest and posttest of HKI B, in which the means of the posttest in both classes are higher than the means of the pretest. To determine whether the difference is statistically significant or not, it can be seen in the results of the paired samples t-test shown in the table below.

Table 2. Paired Samples Test

		Paired Differences					
		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	Posttest HKI A – Pretest HKI A	15.091	19.914	4.246	3.554	21	.002
Pair 2	Posttest HKI B – Pretest HKI B	25.227	17.315	3.692	6.834	21	.000

It can be seen in Table 2 above that there are two pairs, Pair 1 and Pair 2. Pair 1 shows the comparison between the posttest and pretest scores of HKI A (using Memrise), while Pair 2 shows the comparison between the posttest and pretest scores of HKI B (using Quizlet). The output of Pair 1 shows that the value of Sig. (2-tailed) is 0.002, which is less than 0.05. Similarly, it can be seen on the output of Pair 2 that the value of Sig. (2-tailed) is also less than 0.05, which is 0.000. Since both of the outputs of Pair 1 and Pair 2 in Table 2 show the values of Sig. (2-tailed) that are less than 0.05, then it means that there is a statistically significant difference within HKI A (taught by using Memrise) and HKI B (taught by using Quizlet) in the vocabulary achievement before and after using the learning platform. In other words, both Memrise and Quizlet website versions are effective in improving students' vocabulary achievement.

Furthermore, to examine whether there is or not a significant difference in vocabulary achievement between students who are taught using the Memrise website and those who are taught using the Quizlet one, an independent samples t-test is employed. The results of the independent samples t-test can be seen in the following table.

Table 3. Independent Samples Test

		Levene's Test for Equality of Variances					t-test for Equality of Means	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
NGain Score	Equal variances assumed	1.127	.295	-1.257	42	.216	-.12638	.10058
	Equal variances not assumed			-1.257	36.367	.217	-.12638	.10058

Based on Table 3, it can be seen that the value of Sig. (2-tailed) in the output of Equal variances assumed is 0.216, in which it is greater than the alpha value (0.05). Since the value of Sig. (2-tailed) is greater than 0.05, then it means that there is no significant difference in vocabulary achievement between students of HKI A who are taught using Memrise and students of HKI B who are taught using Quizlet. Thus, it can be said that both the effectiveness of Memrise and Quizlet website versions are on the same level, one is not more effective than the other.

4. Discussion

In this study, the uses of the website versions of Memrise and Quizlet were compared with regard to their effectiveness in improving students' vocabulary achievement. To compare the effectiveness of Memrise and Quizlet websites, the researcher collected the data needed and then processed and analyzed the data using statistical tests, especially the paired samples t-test and the independent samples t-test.

From the results of the paired samples t-test, the researcher found that both the website versions of Memrise and Quizlet are effective in improving students' vocabulary achievement. It can be seen from the output of Pair 1 (Posttest – Pretest HKI A) which shows the value of Sig. (2-tailed) that is less than the alpha value (0.002 <0.05), and the output of Pair 2 (Posttest – Pretest HKI B) as well shows a Sig. (2-tailed) value that is less than the alpha value (0.000 < 0.05). The results of this paired samples t-test indicate that there is a statistically significant difference within HKI A (using Memrise) and HKI B (using Quizlet) in the vocabulary achievement before and after being taught using the learning platform, or in other words, both Memrise and Quizlet are effective in improving students' vocabulary achievement. This finding is in line with the previous studies which state that Memrise (Fadhilawati, 2016; Fadhilawati & Sari, 2018; Rosydah, 2018), as well as Quizlet (Atmasari, 2019; Vargas, 2011), are effective in improving vocabulary.

One of the reasons that make Memrise and Quizlet effective in improving students' vocabulary achievement is that both are learning platforms that emphasize the use of flashcards. The use of flashcards itself is beneficial in improving the vocabulary of the users as learning and reviewing vocabulary through flashcards repeatedly over a certain period of time can cause the vocabulary saved in the user's long-term memory. Some students in both HKI A and HKI B stated that the frequently repeated vocabulary in either Memrise or Quizlet made it easier for them to memorize the vocabulary and consequently the number of vocabularies they had was increased.

The statement of those students is in line with Murray et al. (2018) who stated that the use of flashcards enables the users to do spaced repetition, and therefore the information they learn from the flashcards repeatedly can be saved in their long-term memory. Additionally, because Memrise and Quizlet are digital flashcard tools, their users can easily learn and review vocabulary through them at any time and place as long as they have a device to access their Memrise or Quizlet account. This is supported by Murray et al. (2018) who pointed out that digital flashcards can be reviewed by users easily on a smartphone or tablet at any place.

Besides the paired samples t-test, the researcher also employed the independent samples t-test to examine whether there is a significant difference in vocabulary achievement between students who are taught using the Memrise website and those who are taught using the Quizlet website. From the results of the independent samples t-test, the researcher found that there is no significant difference in vocabulary achievement between students who are taught using the website version of Memrise and students who are taught using the website version of Quizlet. It can be seen from the output of Equal variances assumed which shows the value of Sig. (2-tailed) that is greater than the alpha value (0.216 > 0.05). Thus, based on the results of the paired samples t-test and the independent samples t-test, it can be inferred that the Memrise website and the Quizlet website are equally effective in improving students' vocabulary achievement, in which one is not more effective than the other.

The findings of this present study appear to be different from the results of the research conducted by Rosydah (2018) which revealed that using the application version of Memrise is more effective than the application version of Quizlet. One factor that might have caused the difference in these findings is that the Memrise website and the Quizlet website used in this present study were non-subscription versions and eventually, not all features of Memrise and Quizlet could be accessed by the students. It is likely that using a different version will cause different findings too.

5. Conclusion

Based on the results of the statistical analysis presented in the previous section, it can be concluded that both the use of the website versions of Memrise and Quizlet are effective to improve the vocabulary achievement of undergraduate students. It is proved by the results of the paired samples t-test, in which the values of Sig. (2-tailed) in both Pair 1 (using Memrise) and Pair 2 (using Quizlet) are less than the alpha value (0.05), which are 0.002 and 0.000 respectively. Furthermore, the results of the independent samples t-test show that there is no significant difference in vocabulary achievement between students who are taught using the Memrise website version and students who are taught using the Quizlet website version, which it can be seen from the value of Sig. (2-tailed) that is greater than the alpha value (0.216 > 0.05). Thus, based on the results of the paired samples t-test and independent samples t-test, it can be said that the use of Memrise and Quizlet website versions are equally effective – the effectiveness of both are on the same level, one is not more effective than the other. However, the results of this present study are influenced by the version of the Memrise and Quizlet websites used, which are the non-subscription versions. Hence,

it is suggested that future researchers use the paid versions to see if there is any difference in findings compared to this study.

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