# EFFICIENCY OF THE 'MEMRISE' MOBILE APPLICATION IN VOCABULARY LEARNING OF EFL STUDENTS

**[1]Nguyen Phuoc Bao Chau[*]; [2]Vo Thi Lien Huong**

[1]Nguyen Tri Phuong Lower Secondary School, Hue; [2]University of Foreign Languages, Hue University

*Received: 28/07/2020; Revised: 22/10/2020; Accepted: 26/04/2021*

**Abstract:** The study looked at the efficiency of the Memrise vocabulary learning tool in EFL students' lexical resource through reading comprehension performance, in this case, the third-year students, Department of English, University of Foreign Languages, Hue University. This is an experimental research with the participation of 40 third-year EFL students who were equally divided into the experiment and the control groups. The study was conducted within three months during which participants took totally four tests. Data were quantitatively analyzed with the assistance of the SPSS (Statistical Package for the Social Sciences) software. The results showed that there was a significant difference in students' lexical resource in the experiment group using the Memrise app compared to the control group, who only learned in the traditional way. The study suggests that Memrise could be used as an assistant tool in both learning and teaching vocabulary.

**Key words:** Memrise, vocabulary, experiment, reading-comprehension skills

## 1. Introduction

The role of vocabulary is undoubtedly the key to language learning, as Wilkins (1972, p.11) put it: "[…] while without grammar very little can be conveyed, without vocabulary nothing can be conveyed." In learning a foreign language, particularly English, students' academic progress significantly depends on their command of vocabulary, alongside with mastering the grammar system. Hence, the learning of vocabulary must be done regularly and persistently since the number of words is almost countless and is constantly expanded. Besides, in this 4.0 era, the powerful influence of technology on the efficiency of human's work is actually undeniable. In addition, one of the most important impetuses for utilising technology in the process of language learning is its ability to solve the time boundary problems between instructors and their students (Salleh, 2010). In this regard, it is strongly believed that students can apply technology, mobile applications in particular, to support the process of self-study and self-improvement in terms of vocabulary. Regarding 'Memrise', Izah (2019) explicitly defined this app by listing five multimedia features that are utilized for challenging the users namely word translation (designed in multiple choice format in review section), the flashcards (used for learning new words), challenge for audio choices (used for review section also, there are three options in each question), the typing challenge (used to train learner's listening and comprehension ability) and phrase translation (used for review section also). Since there are a great number of superiorities of Memrise such as generating motivation, according to Ayu (2019) and Kent and Sherman (2013), encouraging self-study and self-assessment as mentioned by Macaro (2001) and Hobbs (2017), this app need to be explored for further utilisation.

[*] Email: npbchau1424@gmail.com

Therefore, this research was conducted to establish whether there is a significant progress in students' performance of vocabulary in general and reading skills in particular with the assistance of Memrise. In particular, the study seeks answers to the following Research Questions:

1. What are the effects of Memrise on EFL students' vocabulary knowledge?
2. To what extent does Memrise assist EFL students in learning vocabulary through reading comprehension performance?

## 2. Theoretical framework

With regard to the application of Mobile Assisted Language Learning (MALL) in Vietnam, it is claimed by Doan (2018) in her study about into the influences on smartphone adoption by language learners that regardless initially being education-orientedly designed, smartphones have numerous built-in features that can facilitate language classrooms. She also cited Mahmoud and Khrisat's (2013) conclusion that the participants were engaged in using smartphones to note down newly introduced linguistic items, to record news and lectures in the target language for later self-study, to use dictionary applications as well as to search online for authentic learning materials. Moreover, Doan (2018) argued that there is a strong need to increase self-management skills among language learners as MALL has remained excluded in formal education. In consequence, this research allowed students to experiment a mobile app as an assistant tool for self-learning at home.

In a questionnaire survey, Ekinci and Ekinci (2017) hold the comparable belief that there were various positive perceptions from the participants about the utilisation of the application Memrise, along with others. Especially, one of the most significant findings of their study is the effects of Memrise app on the participants' language skills. It was revealed that this app had positive impact on learners' skills of reading, writing and listening. To illustrate, the result of the analysis of Ayu's (2019) research clearly proved that students' score of listening skills with the assistance of Memrise has been boosted, which means that the utilisation of this potential app in language skills improving is completely effectual. Furthermore, their grammar and vocabulary knowledge has also been remarkably improved. Continuously exposed to target language throughout the research, they could understand and become familiar with the pronunciation, intonation and other language contents in the target language, which leads to their improvement in comprehension and utilisation. Nevertheless, the study did not statistically indicate how student's vocabulary volume was improved. Fadhilawati's (2016) research statistical data on students' results when finishing learning one level of a Memrise course showed that learning and reviewing vocabulary through this app could actually improve their vocabulary achievement from the mean score 60.45 (Pre-test) to notably 85.27 (Post-test). The research, however, lacks further clarification in the influence of such app on students' language skills. Regarding the drawbacks of Memrise, Hobbs's (2017) study data also showed that with Memrise, most students initially used it frequently, yet as its novelty wore off, used it less to the point that some did not meet vocabulary goals set for the course. Meanwhile, there was opposite outcome with paper flashcards as only a few students frequently used them outside class at first, gradually, a majority started proactively using them a week prior to the test. The problems, for both groups, were that learners did not devote enough effort and time to learn all of the required

vocabulary items. Also, they did not use either approach throughout the semester on a regular basis, and therefore, did not take advantage of the spacing repetition impact in order to maximize vocabulary retention.

The aforementioned studies, on the one hand, are the inspiring cornerstone for this research topic with regard to exploiting the benefits of mobiles apps to language learning. On the other hand, the knowledge gaps such as not fully analysing all four language skills or only focusing on didactic methods are what motivate this research to be implemented.

## 3. Methods

### 3.1. Research Design

In this study, experimental research was used as the optimal method. According to Lê (2010), experimental research was conducted to explore the relationship between the independent variable and the dependent variable. Specifically, regarding the scope of the study which is about the assistance of Memrise as the application of English vocabulary learning for EFL students, Memrise is considered as an independent variable and the results on vocabulary test measuring the progress of EFL students participating in such experiment is a dependent variable. To answer the research questions, it is necessary to establish and compare students' knowledge of vocabulary through academic reading proficiency with and without Memrise's assistance.

### 3.2. Participants

The participants for the research were collected by completing a form about their personal information, gender, current academic year, GPA (Grade Point Average) and experience with Memrise app. Those who were recuited were third year English-majored students who have been in direct contact with English language for more than 7 years; therefore, they are likely to gain a specific perception of the difficulties encountered in their vocabulary learning process. The selected sample involves a number of mixed ability students. The selection of third year students majoring in English is for two main reasons. Firstly, third-year students are generally believed to have a certain pre-intermediate vocabulary size, which is suitable to the level of the given content resource, so learning vocabulary with its English explanation is definitely not a problem and does not take lots of time. Secondly, since third-year students are quite familiar with all types of reading tests, it is unnecessary for the researcher to spend time explaining and giving instructions. Also, these participants were both male and female whose age ranged from 20 to 21. Specifically, the subjects of 40 third-year English students in this experiment was randomly assigned to two groups, including the experiment group of 20 students and the control group of 20 students.

### 3.3. Procedure

Basically, students in the experiment group were instructed to install and use the Memrise application to support their vocabulary learning within one month by the researcher, while the rest in the control group were only required to use "manual" vocabulary learning method without the support of Memrise. During this experiment, students of the two groups self studied the given materials, then had to do several specific tests described as follows. Regarding

the tests using in this research, there are four tests including one preliminary (pre-), two progress tests and one evaluative (post-) test that were selected from the content of the resource by the researcher with their answer keys and were presented in Google Forms website. Owing to the limited scope of the study as explained earlier, the content of each test is only directed to the students' reading comprehension skills. Therefore, the types of questions testing students' reading comprehension skills were used as criteria to decide on the test contents from the aforementioned material. All the learning and assessment occurred out of classroom contexts. Each test consists of totally 14 multiple-choice and matching questions. The maximum score that participants can get in each test is 10. Thus, the score is calculated by this formula: 10/14 x [number of correct answers].

Prior to the commencement of the research, both sample groups were introduced to the purpose and outline of the research process. Afterwards, a briefing on how to install and create an account in Memrise application was provided to the experiment group. After these steps had been completed, the pre-test was done by all participants in both groups with the purpose of assessing the current level of the participants. The results were later used to compare with the results of the subsequent tests. After having been collected all the complete pre-tests, the experiment group accessed the given Memrise course and started self-learning and reviewing the first level of the course within the first two weeks at home. Meanwhile, the control group learned the same provided amount of vocabulary without the support of Memrise. After two weeks of learning vocabulary, both groups took the first progress test. The process of learning and reviewing the next vocabulary level continued and the second progress test of both groups was similarly implemented within the next week. Finally, both groups were assigned to the post-test also with the view to providing the final result to prove the effectiveness of using Memrise application in learning English vocabulary of EFL students and the applicability of the tool in improving students' reading skills.

The purpose of determining the study time and vocabulary review for each session, before each test of two weeks was to ensure that all participants were able to complete their new words learning and the remaining time to review and memorize vocabulary.

### 3.1. Materials and Instruments

Content resource: "Cambridge Business Benchmark Advanced" student's book version written by Guy Brook-Hart (2007) was used as the major resource throughout the experiment including course's content development and tests design.

Memrise Application: A Memrise's English vocabulary course was used as a typical tool for the experience. The content of this course is entirely based on the given resource consisting vocabulary of totally 24 levels corresponding to 24 units of the book with approximately 20 words per unit. Due to the time constraints, this experiment study is only allowed for learning the vocabulary of two units including unit 5 and 10.

### 3.2. Data Analysis

The collected data were quantitatively analyzed with the support of the statistical processing software SPSS, whose feature of Independent Samples T-Test is used to see whether

there is any statistically significant difference between vocabulary learning of third year English students who received Memrise application and those who did not. Besides, reliability and validity are important in research as they are used for determining the accuracy of the assessment and evaluation of a research work. In this study, a test reliability Cronbach's alpha coefficient of internal consistency (calculated in SPSS software as shown in Table 1) was used that examined each single test administration to provide a unique estimate of the reliability for the given tests. Cronbach's alpha is a value between 0 and 1. Values above 0.61 indicate the acceptable level of reliability. The reliability of the pre-test, progress test 1, progress test 2 and post-test were 0.802, 0.674, 0.686 and 0.656 respectively (Cronbach's alpha), which proved that the reliability of these tests was acceptable.

**Table 1.** Cronbach's Alpha Reliability Coefficient

| | Cronbach's Alpha if Item Deleted |
|---|---|
| Pre-test | 0.802 |
| Progress Test 1 | 0.674 |
| Progress Test 2 | 0.686 |
| Post-test | 0.656 |

## 4. Findings and discussion

An independent sample t-test was conducted using SPSS software to compare Means of the two groups of the study samples in pre-test and post-test. The independent sample t-test was also used to determine whether the difference in means between the two groups – if it existed – was significant at the alpha level (0.05). The two hypotheses for this analysis state:

$H_0$: There is no significant difference between means of two groups in pre-test and post-test.
$H_1$: There is a significant difference between means of two groups in pre-test and post-test.

### 4.1. Pre-test scores in both sample groups

**Table 2.** Descriptive Statistics of the Pre-test on third year English students' vocabulary knowledge

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pre-test | Control Group | 20 | 3.635 | 1.645 | .367 |
| | Experimental Group | 20 | 3.075 | 1.152 | .257 |

**Table 3.** Independent T-test for Control group and Experiment group on the Pre-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 | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Pre-test | Equal variances assumed | 2.176 | .148 | 1.247 | 38 | .220 | .560 | .449 | -.349 | 1.469 |
| | Equal variances not assumed | | | 1.247 | 34.022 | .221 | .560 | .449 | -.352 | 1.472 |

Table 2 illustrated the values of means, standard deviations, and standard error means of pre-test in each group. The performance of participants of the control group was (M = 3.635, SD

= 1.645, SEM = 0.367) and the experiment group was (M = 3.075, SD = 1.152, SEM = 0.257). The pre-test means of the two groups were analyzed for significant differences. To determine whether this difference between the research groups was statistically significant, a t-test was applied as shown in Table 3. The value of (F) was 2.176, and the level of significance was 0.148 (p = 0.220 > 0.05), indicating no significant difference between the research sample groups with regard to their vocabulary knowledge in pre-test.

### 4.2. Post-test scores in both sample groups

**Table 4.** Descriptive Statistics of the Post-test on third year English students' vocabulary knowledge

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Post-test | Control Group | 20 | 3.215 | 1.271 | .284 |
| | Experimental Group | 20 | 5.960 | 1.499 | .335 |

**Table 5.** Independent T-test for Control group and Experiment group on the Post-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 | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Post-test | Equal variances assumed | .645 | .427 | -6.245 | 38 | .000 | -2.745 | .439 | -3.634 | -1.855 |
| | Equal variances not assumed | | | -6.245 | 37.011 | .000 | -2.745 | .439 | -3.635 | -1.854 |

Table 4 shows the difference between the post-test means of the two groups, which can be inferred that experiment group had a significant improvement in the post-test. In other words, comparing the mean standard deviation, and standard error mean of the control group in the post-test (M = 3.215, SD = 1.271, SEM = 0.284) and the experiment group (M = 5.960, SD = 1.499, SEM = 0.335), it was apparent that experiment group had better performance after using the Memrise to learn vocabulary. The results (Table 5) measured by the independent samples t-test showed that the value of (F) was 0.645, and the level of significance was 0.427, (p = 0.000 < 0.05), which had statistically significant differences between the research sample groups in the post-test. Furthermore, it is safe to declaim that this study rejected the null hypothesis, which suggests that there is no significant difference between the achievement of the students who have used Memrise as a tool to widen vocabulary knowledge and the achievement of the students who have used traditional learning method. Correspondingly, it supported the alternative hypothesis that students who participated in experiment group will have significantly higher scores than those who did not receive the treatment.

### 4.3. Progress test 1 and Progress test 2 scores in both sample groups

**Table 6.** Descriptive Statistics of the Progress test 1 and 2 on third year English students' vocabulary knowledge

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Progress Test 1 | Control Group | 20 | 3.355 | 1.365 | .305 |
| | Experimental Group | 20 | 3.750 | 1.414 | .316 |
| Progress Test 2 | Control Group | 20 | 3.460 | 1.693 | .378 |
| | Experimental Group | 20 | 5.430 | 1.614 | .361 |

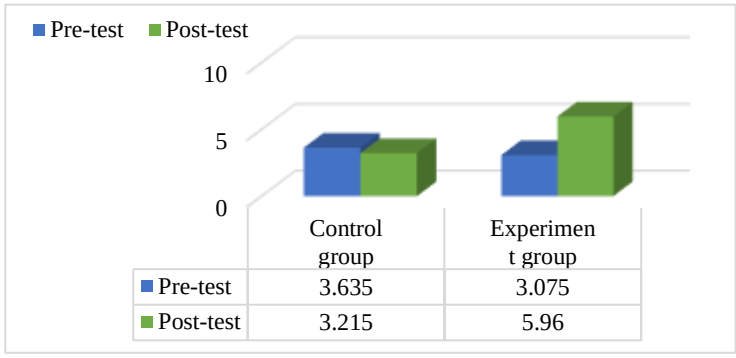
**Table 7.** Independent T-test for Control group and Experiment group on the Post-test

| | | 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 | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Progress Test 1 | Equal variances assumed | .000 | .998 | -.899 | 38 | .375 | -.395 | .439 | -1.285 | .495 |
| | Equal variances not assumed | | | -.899 | 37.952 | .375 | -.395 | .439 | -1.285 | .495 |
| Progress Test 2 | Equal variances assumed | .145 | .706 | -3.765 | 38 | .001 | -1.970 | .523 | -3.029 | -.910 |
| | Equal variances not assumed | | | -3.765 | 37.913 | .001 | -1.970 | .523 | -3.029 | -.910 |

Table 6 compared the results of the progress test 1 and 2 in both groups. The performance of participants in the control group was (M = 3.355, SD = 1.365, SEM = 0.305) and the experiment group was (M = 3.750, SD = 1.141, SEM = 0.316). The two aforementioned tests' means of both groups were analyzed for significant differences. To know whether this difference between the research groups was statistically significant, another t-test was applied as shown in Table 7. Regarding the progress test 1, the value of (F) was 0.000, and the level of significance was 0.998 ($p = 0.375 > 0.05$), demonstrating, still, no significant difference between the research samples in relation to their vocabulary knowledge in this test.

However, in the second progress test, comparing the mean standard deviation, and standard error mean of the control group in this test (M = 3.460, SD = 1.693, SEM = 0.378) and the experiment group (M = 5.430, SD = 1.614, SEM = 0.361), it was evident that after the three-forth of the treatment process, there was an improved performance in the experiment group. The results (Table 7) also showed that, for progress test 2, the value of (F) was 0.145, and the level of significance was 0.706, ($p = 0.001 < 0.05$), which had statistically significant differences between the research groups in the progress test 2.

### 4.4. Pre-test and post-test mean score in both sample groups




| | Control group | Experiment group |
|---|---|---|
| Pre-test | 3.635 | 3.075 |
| Post-test | 3.215 | 5.96 |

**Figure 1.** The Mean of scores in two groups in the Pre-test and the Post-test

Generally, in Figure 1, the means of two groups in both tests have been comparatively illustrated. It is clear that the mean of the experiment group is greater than the mean of the control group in the post-test, which indicates that there is a significant difference between the two groups of learners with regard to their vocabulary knowledge after 4 weeks of utilizing Memrise.

## 5. Conclusions and Implications

As being reviewed, the benefit of applying a technology like the Memrise app to learning support for EFL students is undeniable. Besides, the findings of this research also contribute to consolidate such benefit. Moreover, it can be seen that the students' performance of vocabulary through reading tests after using Memrise have generally improved. This means that there have been beneficial influences of this mobile app on students' English lexical resource. Finally, by using a vocabulary learning mobile app, EFL students could completely enhance their vocabulary from Memrise, which is not only the double success in students' knowledge acquisition but also a productive learning method. All of the aforementioned, as well as research papers on the topic, are able to conclusively answer the two research questions that the use of Memrise app is effective within this research setting. In consequence, this study makes a contribution to the fields of MALL as well as Applied Linguistics. As participants in this study had no prior experience in self-learning with Memrise, the results revealed that they have another supportive way of vocabulary learning which were not reported in the literature review in the Vietnamese context. The results have practical implications for language teachers and language students as follows:

EFL teachers should have Memrise as an assistant tool to help students learn and revise vocabulary outside the class, such as setting weekly goals on the number of vocabulary or points to be achieved when using the app for students. Teachers can create courses that suit the curriculum on this platform. This increases the interest of students without cramming vocabulary in a copious and boring way. Furthermore, teachers could also take other English vocabulary courses offered by Memrise that are appropriate for their teaching purpose as a long-term teaching material because all data is systematically stored. For EFL students, Since Memrise app has been proved to be greatly potential in supporting students in learning foreign

languages, especially English, EFL students should assimilate and exploit such a supportive and intriguing app to the full. Besides, reaching conclusions about the effectiveness of Memrise in helping students learn vocabulary does not mean that this is the only and the optimal tool. Therefore, it is necessary for students to use a combination of diverse vocabulary learning methods to avoid uniformity, increase efficiency and fully understand vocabulary. Although Memrise is useful, students' effort and perseverance are essential. There will be no tool that can inspire learners constantly, and yet, the success could only be achieved by their initiative.

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# HIỆU QUẢ CỦA ỨNG DỤNG ĐIỆN THOẠI 'MEMRISE' TRONG VIỆC HỌC TỪ VỰNG CỦA SINH VIÊN CHUYÊN NGỮ TIẾNG ANH

**Tóm tắt: N**ghiên cứu này tập trung vào tìm hiểu về hiệu quả của Memrise đối với vốn từ vựng thông qua khả năng đọc hiểu của sinh viên EFL, trong trường hợp này, là sinh viên năm thứ ba, Khoa tiếng Anh, Đại học Ngoại ngữ, Đại học Huế. Đây là một nghiên cứu thử nghiệm. 40 sinh viên EFL năm thứ ba đã tham gia và được chia đều vào nhóm thực nghiệm và nhóm kiểm soát. Nghiên cứu được thực hiện trong vòng ba tháng. Dữ liệu được phân tích định lượng với sự hỗ trợ của phần mềm SPSS. Kết quả cho thấy có sự khác biệt đáng kể về vốn từ vựng của các sinh viên trong nhóm thử nghiệm sử dụng ứng dụng Memrise so với nhóm kiểm soát, những người chỉ học theo cách truyền thống. Nghiên cứu đề xuất rằng Memrise có thể được sử dụng như công cụ hỗ trợ trong việc học từ vựng.

**Từ khóa:** Memrise, từ vựng, thử nghiệm, kỹ năng đọc hiểu