



The Use of Memrise NGSL 1.01 Flashcard Set Apps to Learn General Vocabulary in The Tenth Grade of Senior High School

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Abstract: This study aims to explore the impact of using the Memrise mobile app, specifically its New General Service List (NGSL) 1.01 flashcard sets, on English vocabulary acquisition among high school students. Recognizing vocabulary as a critical component of language mastery, this research addresses the challenges in vocabulary learning and the potential benefits of digital tools in enhancing language skills. This study employs a preexperimental with one-group pre-test-post-test design. The study involved 35 tenth-grade students from Senior High School 1 Praya Timur. Then, the NGSL diagnostic test (NGSL vocabulary test with multiple choice form) was used to measure vocabulary knowledge before and after a five-week intervention with the Memrise app. The results of this study indicated significant improvements in vocabulary scores post-intervention, demonstrating the app's effectiveness. A positive correlation was found between the number of flashcard sets used and students' NGSLT scores. The findings suggest that digital learning platforms like Memrise can significantly enhance vocabulary acquisition, making learning more engaging and effective. The study recommends integrating such tools into educational practices to improve vocabulary learning outcomes. Future research should investigate the long-term effects and demographic variations in the effectiveness of digital vocabulary learning tools.

Keywords: Memrise Mobile Apps, NGSL, Vocabulary Acquisition.

Abstrak: Penelitian ini bertujuan untuk mengeksplorasi dampak penggunaan aplikasi seluler Memrise, khususnya set flashcard New General Service List (NGSL) 1.01, terhadap penguasaan kosakata bahasa Inggris di kalangan siswa sekolah menengah. Menyadari bahwa kosakata merupakan komponen penting dalam penguasaan bahasa, penelitian ini membahas tantangan dalam pembelajaran kosakata dan manfaat potensial dari alat digital dalam meningkatkan kemampuan bahasa. Penelitian ini menggunakan desain preexperiment dengan melibatkan satu kelompok pre-test - post-test experiment. Penelitian ini melibatkan 35 siswa kelas sepuluh dari SMA Negeri 1 Praya Timur. Kemudian, Tes diagnostik NGSL (tes kosakata umum NGSL dengan bentuk pilihan ganda) digunakan untuk mengukur pengetahuan kosakata sebelum dan sesudah intervensi selama lima minggu dengan aplikasi Memrise. Hasil penelitian menunjukkan peningkatan yang signifikan dalam skor kosakata setelah intervensi, yang menunjukkan keefektifan aplikasi ini. Korelasi positif ditemukan antara jumlah set flashcard yang digunakan dengan nilai NGSLT siswa. Temuan ini menunjukkan bahwa platform pembelajaran digital seperti Memrise dapat secara signifikan meningkatkan penguasaan kosakata, membuat pembelajaran menjadi lebih menarik dan efektif. Penelitian ini merekomendasikan untuk mengintegrasikan alat tersebut ke dalam praktik pendidikan untuk meningkatkan hasil pembelajaran kosakata. Penelitian di masa depan harus menyelidiki efek jangka panjang

dan variasi demografis dalam keefektifan alat pembelajaran kosakata digital.

Kata kunci: Aplikasi Memrise, NGSL, Pemerolehan kosakata.

Introduction

English word comprehension among Indonesian students continues to be a big difficulty. Many students have limited exposure to English in everyday settings, resulting in fewer opportunities to hear and use new terminology spontaneously. According to Dahnilsyah et al. (2023), students ought to review lessons and develop their vocabulary because their ability to speak grows alongside their understanding of words. Students will struggle to learn English because of their restricted vocabulary. It is in line with the findings of the result of observation at Senior High School 1 Praya Timur, which is one of the high schools that offer English as a foreign language to its students. According to the conclusions of the initial observational interview with the English teacher, students make various mistakes in their language competency and English abilities. One of the most significant factors impacting this is their limited knowledge of words. Many students in the tenth grade at Senior High School 1 Praya Timur were unable to memorize vocabulary, making it difficult for them to utilize English both inside and outside of school.

Understanding vocabulary is essential in learning English because it is one of the most important aspects of language learning. Several studies have shown that vocabulary plays an important role in language mastery (Hutauruk, 2016). By mastering vocabulary, someone can better understand texts and conversations and express concepts and ideas in English. Words are used to communicate languages and play an important role in mastering skills of listening, reading, speaking, and writing (Moghadam et al., 2012; Alqahtani, 2015). Thus, a lack of vocabulary produces difficulties for the students in creating an utterance, reading an English text, and listening skills (Hapsari, 2018; Afzal, 2019).

However, learning vocabulary is a difficult process as learners must master words' forms and meanings. Knowing a word involves understanding its' use in both spoken and written contexts its inflectional and derivational forms, its meanings, as well as its collocations. A word has syntactic, pragmatic, and discursive patterns (Nunan & Carter, 2001). The learning materials are yet another crucial component of language acquisition. Making the learning process more engaging is greatly influenced by the usage of learning material in the classroom, such as smartphone apps for digital flashcards. Mobile devices and vocabulary greatly increased the effect of digital

flashcards on acquiring English language vocabulary (Zakian et al., 2022). Moreover, Amalia et al. (2015) discovered a noteworthy distinction in the learners' advancement before and after acquiring vocabulary through the use of flashcards. In addition to practical activities, teachers can offer pertinent learning materials like a Basic English dictionary or a vocabulary study app. The descriptive study indicates that speaking, reading, and vocabulary exercises are the main reasons undergraduate students utilize English language learning applications (Annamalai, et. Al., 2022). Following the trend of this type of learning medium, several studies have been done on this (Fadhilawati, 2016), (Fathi et al, 2018), (Hamer, 2021), (Rahmani et al, 2022), and (Lubis et al, 2023). These studies highlight the positive impact of mobile tools like Memrise and digital flashcards to facilitate EFL learners' English vocabulary learning. The studies show that apps lead to better vocabulary knowledge, self-regulation, and overall language learning. The findings emphasize the effectiveness of mobile technology in facilitating vocabulary learning and language proficiency, improving high-frequency word knowledge, and making learning more engaging and flexible for learners.

This study aims to explore the use of technology-based applications as language learning strategies beyond what may be taught to language learners in a classroom. Students' enthusiasm for studying and English language proficiency are predicted to rise with technology-based learning, which is accessible via a computer or smartphone. The Memrise mobile app for English language study is one of the learning methods and resources that were previously discussed. The New General Service List (NGSL) 1.01 flashcard sets, Browne (2004) which offer an English learning course that concentrates on vocabulary acquisition, particularly high-frequency language to effectively increase their vocabulary knowledge, is one of the characteristics of the program.

The findings of this study are expected to increase students' interest in learning independently at home using their smartphones, making it possible to study beyond the class. The findings of this study are also expected to make the learning experience more stimulating and enjoyable, thus also increasing the student's vocabulary, especially the NGSL vocabulary.

Method

This study adopts a quantitative approach through pre-experimental research. An experimental treatment is given to a single or small group of people over time (Creswell, 2014). This study used the pre-experimental one-group pre-test-post-test design with randomized subjects. Then the subjects were assigned to experimental groups only. Then this study compared the pre-test and post-test results from the experimental groups to know the effect of the Memrise before and after the treatment. Meanwhile, the population of this study was the tenth-grade senior high school 1 Praya Timur students. Thirty-five students in the tenth grade make up the total number of samples.

This study uses the Memrise NGSL 1.01 Flashcard Sets toward the score in the NGSL diagnostic test. The NGSL is a carefully selected list of approximately 2800 high-frequency words that are commonly used in a wide range of contexts (Browne, 2013; 2014b). It focuses on essential vocabulary, allowing students to prioritize learning the most commonly used words in English. Therefore, this research is expected to provide a valuable contribution to increasing students' scores in NGSL diagnostic tests and fill in knowledge gaps that have not been explained by previous research.

Therefore, the NGSLT diagnostic test was employed in this study to estimate the learner's knowledge of NGSL. The NGSLT is a diagnostic tool created to evaluate the New General Service List's written receptive knowledge test (Stoeckel & Bennett, 2009). The NGSLT has undergone reliability testing, and it is advised that it be utilized to assess NGSL knowledge (Nadasdy et al., 2018; Stoeckel et al., 2018). As a result, the instruments are reliable and unidimensional, suggesting a strong match with the Research model, and the NGSLT was unquestionably a reliable gauge of NGSL proficiency. To collect the data, the students took a pre-test to gauge their starting proficiency based on their results from the NGSL diagnostic test. NGSLT uses multiple choice of a correct answer and three incorrect options. The students were then given a five-week assignment to utilize the Memrise New General Service List 1.01 flashcard set app as part of the researcher's treatment. Following the treatment, the students were post-tested on their knowledge of NGSL. Data analysis was then conducted to calculate if there is a significant effect on using the Memrise New General Service List 1.01 flashcard sets to learn general vocabulary, and if there is a positive correlation between the number of flashcards set students play through the Apps and their vocabulary NGSLT score.

Then, after finding out the students' scores, students can be divided into several categories based on Brown's (2004) classification of students' scores, which is shown in Table 1 below.

Table 1 The classification of students' scores

The classification scores		
A	90 – 100	Excellent
B	80 – 89	Good
C	70 – 79	Adequate
D	60 – 69	Inadequate
E	Below 60	Failing

Furthermore, according to Riduwan (2014) to test the hypothesis this study used the paired t-test formula.

Meanwhile, to check the correlation this study uses the Product Moment Correlation Coefficient Test (Seopeno 2002). The correlation between these two variables can be categorized into several categories based on Table 2 below.

Table 2 The Coefficient Correlation

The Correlation Coefficient	Degree of Correlation
0,00 – 0,199	Very low
0,20 – 0,399	Low
0,40 – 0,599	Adequate
0,60 – 0,799	High
0,80 – 1,000	Very high

The next step is to determine the amount of correlation contribution given by variable x to variable y with the formula $KP = r^2 \cdot 100\%$. The last step was to test the significance level of the correlation value between the two variables, so we could see directly through the t-value we obtained to see if the t-value we obtained has an influence or not using the significance of the correlation formula (Riduwan, 2014).

Result and Discussion

To address the research objectives, the researcher collected data on students' vocabulary knowledge before and after being treated with Memrise NGSL flashcard sets. The vocabulary tests applied in the pretest and post-test were used to answer the first research question; Is there a significant effect on using Memrise NGSL 1.01 flashcard sets to learn general

vocabulary? Meanwhile, the result of the students' learning achievement in Memrise was conducted to answer the second research question; Is there a correlation between the number of flashcard sets played by the students through the Apps and their vocabulary NGSLT score? The findings are elaborated in chart 1.

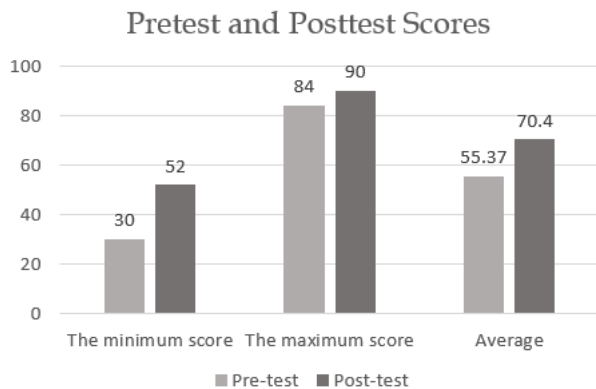


Chart 1. the scores of the pre-test and post-test

According to the chart 1, the lowest pre-test score was 38 and the highest pre-test score was 84. Furthermore, in the post-test, the lowest score was 52 and the highest score was 90. Then the mean scores of the pre-test were 55.37 and the post-test 70.4. The results of the average pretest score can be categorized as *failing* category, and the results of the average posttest score can be categorized as *adequate* category.

The pre-test and post-test results provide useful information about the effectiveness of the teaching methods used in this study. The comparison of students' scores before and after treatment allows for a thorough evaluation of the effectiveness of using Memrise NGSL flashcard sets Apps. The scores show significant improvements in vocabulary mastery after using the Memrise NGSL flashcard sets. The range of pre-test scores demonstrates variation in students' initial levels of ability, whereas post-test scores show overall improvement across the group. The increase in scores indicates that the Memrise application had a positive influence on vocabulary acquisition. A comparison between pre-test and post-test scores demonstrates the advantage of the Memrise NGSL flashcard sets for vocabulary acquisition. The experimental group's higher post-test scores and a wider range of improvement demonstrate the measurable benefits of implementing digital learning platforms into educational practices. The findings demonstrate the potential of digital learning tools to improve pedagogical approaches and student outcomes. Educators may consider incorporating Memrise and similar applications into their teaching strategies, particularly in subjects that require extensive vocabulary development.

Then, vocabulary knowledge is a fundamental aspect of language proficiency, distinguished by receptive (passive) and productive (active) knowledge. Receptive knowledge allows learners to recognize words and understand their meaning when encountered in context, while productive knowledge enables them to use these words accurately in speech and writing. Nation (2001) and Schmitt (2008) emphasize the importance of deep understanding, including context, usage, and grammatical patterns. This nuanced comprehension is critical for both recognizing and producing vocabulary effectively. The study's pre-test and post-test results demonstrate the impact of targeted vocabulary instruction using the Memrise app. The significant improvement in scores suggests that students not only recognized more words but were also better equipped to use them productively. This aligns with the theoretical framework, underscoring the importance of integrating both receptive and productive aspects of vocabulary knowledge in language learning.

The Normality Test

After calculating the homogeneity test by using the Shapiro-Wilk test at a significance level of 0.05, which is shown in Table 3 below.

Table 3 Normality test

	Shapiro-Wilk		
	W	Df	W-critical value
Experiment group	0.967	35	0.934

Based on the table above, it is known that the W-value is higher than the W-critical value for each pretest and posttest. As a result, the data can be determined to have a normal distribution.

The Homogeneity Test

After calculating the homogeneity test, the results can be seen in Table 4 below.

Table 4 Homogeneity test

	F-Test Two-Sample for Variances		
	F	Df	F-critical (1-tailed)
Experiment group	1.349	34	1.772

The table above indicates that if the F-value < F-critical value = 1.349 < 1.772 at the 5% significance level, the data on both samples is homogeneous (H0 is accepted).

The significant effect of the Memrise NGSL 1.01 flashcard sets

The hypothesis testing in this study was designed to assess the significance of using Memrise New General Service List 1.01 flashcard sets to improve general vocabulary learning before and after the treatment. The study used a t-test analysis to compare pre-test and post-test scores to see if the Memrise application had a measurable influence on vocabulary acquisition. The result of the t-test calculation is elaborated in Table 3 below.

Table 5 Paired Sample T-test Result

<i>Paired Sample t-test</i>				
T	N	Df	a	Sig. (2-tailed)
-5.527	35	34	0.05	2.032

Based on calculations using the t-test, the t-value is -5.527. then, the t_{table} with standard deviation = 35 - 1 = 34 at the 5% level of significance is 2.032. Furthermore, the value $> t_{table}$ indicates that H_0 is rejected and H_a is accepted. This implies that the use of Memrise New General Service List 1.01 flashcard sets has a statistically significant effect on general vocabulary learning.

The rejection of the null hypothesis implies that the observed differences in pre-test and post-test scores were unlikely to be caused by chance. Instead, the findings point to a causal relationship between using the Memrise application and improving students' vocabulary mastery. The significant effect identified highlights the ability of digital learning platforms like Memrise to support traditional teaching methods and improve student learning outcomes. Teachers and parents may want to incorporate similar digital tools into their curriculum to encourage more engaging and effective vocabulary instruction.

The findings support the principles that Students exposed to the NGSL flashcards on Memrise, which provided repetitive and contextual exposure to high-frequency words, showed marked improvements in vocabulary tests. This approach aligns with Barcroft's (2004) recommendations and demonstrates the effectiveness of structured, repeated exposure in enhancing vocabulary acquisition. This improvement is likely due to the app's ability to provide repeated, contextual exposure to vocabulary, facilitating both recognition and production. Moreover, the portability and convenience of mobile learning mean that students can practice vocabulary regularly, reinforcing learning through consistent engagement. This is in line with the studies conducted by Lei (2018) and Chen et al (2019) who said that the integration of mobile technology in

language learning, particularly through apps like Memrise, offers several advantages: accessibility, portability, and the potential for self-regulated learning, then also supported by features of spaced repetition algorithm has proven to be an effective tool for vocabulary acquisition. This finding also aligns with

According to Browne (2013; 2014b), The NGSL comprising approximately 2800 high-frequency words, offers a comprehensive resource for English language learners. The selection is based on corpus linguistics, ensuring that the vocabulary is relevant and useful across various contexts. The NGSL's utility is evident in the significant improvements observed in the post-test scores of students who used the Memrise NGSL flashcard sets. This suggests that focused learning of high-frequency words can greatly enhance students' vocabulary breadth and depth, aiding both receptive and productive language use.

The correlation between the number of flashcards set and NGSLT score.

Based on the results of calculating the correlation between the scores obtained by students in the post-test in answering the NGSLT (X) and the number of flashcards set that students have played (Y). The result is delivered in Table 4 below.

Table 6 The Correlation Product-Moment Correlation results

<i>The Product Moment Correlation</i>				
R	N	$\sum X$	$\sum Y$	Correlation degree
0.791	35	2464	1178370	High

According to Table 4, we can see that the r-value is 0.791. the results of these calculations show that the level of correlation between the two variables is categorized as strong. Meanwhile, the amount of contribution of variable x to variable y is $KP = r^2$. $100\% = 0.791^2$. $100\% = 63\%$ based on the calculations that have been done, the effect of how much the students play the Memrise on the students' answers to the test is 63%, with the remaining 37% determined by other factors.

Then, the results of the calculation of correlation significance are shown in Table 5 below.

Table 7 The significance of correlation test result

<i>The Significance of Correlation Test</i>					
T	R	N	Df	a	Sig. (2-tailed)
7.421	0.791	35	33	0.05	2.035

Based on calculations using the t-test in Table 5 above to calculate the significance of the correlation, the t value is 7.421, then the t_{table} with standard deviation

33 at the significant level of 5% is 2.035. Therefore, the t -value $>$ t table indicates that H_0 is rejected and H_a is accepted. Then, the correlation analysis revealed that the calculated correlation coefficient (r) exceeded the critical value established by the correlation table. This suggests that there is a positive correlation between students' NGSLT scores and their overall performance, implying that as one variable increases, so does the other.

Moreover, the acceptance of the alternate hypothesis (H_a) and rejection of the null hypothesis (H_0) demonstrate the existence of a statistically significant positive correlation between students' NGST scores and overall performance. This implies that students who perform well on NGSLT will have a higher overall vocabulary proficiency. The strong/high correlation coefficient indicates that there is a strong relationship between students' NGSLT scores and their overall performance. This finding reinforces the importance of focusing on NGSL-related content to effectively improve students' vocabulary mastery. Understanding the strong positive correlation between NGSLT scores and overall vocabulary proficiency can help teachers improve their instruction. Teachers can prioritize NGSL content and tailor teaching methods to target areas of vocabulary acquisition that correspond to NGSL standards, thereby improving students' learning outcomes.

According to O'Malley & Chamot (1990) and Chamot (2004), Learning strategies are specific thoughts or actions that students use to comprehend, learn, or retain new information. Chamot defines them as purposeful thoughts and actions taken by students to achieve a learning goal. So, the more often students use digital learning to learn to eat, the more they will acquire new vocabulary. This is in line with the results of this study which concluded that the high correlation between Memrise usage and vocabulary proficiency underscores that the app effectively facilitates the strategic learning processes. Meanwhile, according to Nation (2013), Effective strategies should include options, be challenging, require expertise and training, and enhance the efficiency and efficacy of vocabulary acquisition. then, the result of this study supports Nation's criteria for effective strategies: Memrise offers various ways to interact with vocabulary, the app's structured learning paths provide a progressively challenging environment, and the repetitive nature of the app helps students develop expertise over time. The high correlation between app usage and test scores demonstrates that Memrise enhances both the efficiency and efficacy of vocabulary learning.

Moreover, the study's findings confirm that using Memrise, a mobile app, is an effective digital resource that enhances vocabulary learning. This supports the

statements by Wang (2017) and Gürkan (2018) that state incorporating digital resources into language instruction is consistent with current educational trends, utilizing mobile phones, tablets, laptops, and other information tools. Otherwise, according to Criollo-C et al. (2018), Mobile learning has disadvantages, such as limitations in purchasing and operating technology, and the challenge of creating a new learning culture. this study acknowledges these drawbacks, noting that while Memrise is effective, it should not replace traditional instructional methods, and this balanced view the limitations of mobile learning.

Conclusion

In conclusion, the findings indicated that using Memrise NGSL flashcard sets resulted in significantly better vocabulary learning strategies. The findings demonstrate the effectiveness of digital learning tools in improving the learning process. The study also emphasized the importance of focusing on NGSL-related content to improve vocabulary proficiency. Teachers are recommended to support such tools in their teaching strategies to create more interesting and engaging learning experiences, which will significantly enhance student vocabulary learning outcomes.

For future research, it is recommended to look more closely into several aspects related to the effectiveness and implications of digital learning tools in language acquisition. Firstly, exploring the long-term effects of using Memrise or similar applications on vocabulary retention and language proficiency could provide valuable insights into the sustainability of learning outcomes over time. Additionally, investigating the differential impacts of digital learning tools across various student demographics, such as age, language background, and proficiency levels, could elucidate potential disparities and inform tailored instructional approaches.

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