


# Enhancing Vocabulary Through Simpler Digital Applications: An Epistemological Approach to Language Learning

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## ABSTRACT

This study aimed to enhance of vocabulary mastery at junior high school students level through simpler digital application. Vocabulary is a fundamental aspect of English learning, yet many junior high school students struggle to acquire sufficient vocabulary, which hinders their ability to develop other language skills. To address this issue, the simpler application was introduced as a digital learning medium that provides simple, interactive, and accessible vocabulary practice. This research argues that digital applications can serve as epistemic mediators, allowing learners to build vocabulary through meaningful interaction and autonomous learning. Quantitative approach used with a pre-experimental design, specifically a one group pre-test and post-test model. The participants consisted of 23 students selected through purposive sampling. A vocabulary test was administered before and after five sessions of treatment using the Simpler application. The collected data were analyzed using descriptive and inferential statistics, including a paired sample t-test. The results showed that the students' post-test mean score was significantly higher than the pre-test mean score. The obtained t-value (6.247) exceeded the critical value of the t-table (2.074) at the 5% significance level, confirming that the improvement was statistically significant. These findings indicate that the simpler application is enhance in improving students' vocabulary mastery with epistemological principles of meaningful learning.

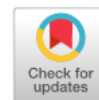
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## INTRODUCTION

In the contemporary digital era, technological advancements have been rapid and have had a profound impact on numerous facets of life, including education (Saykill, 2019). Technology has facilitated the development of more interactive and effective learning applications, thereby providing seamless access to language learning resources, such as English (Lomicka & Lord, 2019)

Digital technology transforms teaching by providing engaging, interactive, and more efficient methods for delivering content (Kormos & Wisdom, 2023). It allows students to access diverse information, collaborate online, and develop critical digital literacy skills. Teachers can use tools like projectors, podcasts, and social media to illustrate lessons and foster active learning (Shahrol et al., 2020). This integration enhances student engagement, motivation, and sometimes long-term skill retention, making learning more contextualized and meaningful (Vahedi et al., 2021)

(Khan et al., 2018) assume in language learning, vocabulary affects almost all skills, such as reading, writing, speaking, listening, and other forms of oral communication such as discussions, dialogs, or prepared talks. These components must be mastered by students to improve their learning process. Meanwhile (Van Vu & Peters, 2021) states one of the important aspects to be learned in language learning is vocabulary, and vocabulary is the main core in learning a foreign language.

Vocabulary has emerged as one of the essential components of language learning (Wu & Chiang, 2023). Since without sufficient vocabulary, students cannot communicate their

thoughts or understand the thoughts of others, vocabulary can be an important component in learning English (Aji et al., 2023). On the other hand, (H. Susanto, 2021) emphasize that without a large vocabulary and a method to learn new terms, students will have difficulties in learning English.

Vocabulary learning is not merely a linguistic activity but also an epistemic process a way of constructing and internalizing knowledge (Chung, 2022). Within the philosophy of knowledge, or epistemology, learning is understood not as passive reception but as active engagement with meaning (De Jaegher, 2021). This view shifts the role of learners from recipients of information to knowers and meaning-makers who construct their understanding through interaction, context, and reflection (Wilson, 2016)

Based on observation obtained from the English teacher at SMP Negeri 1 Simpang Jernih in Juli 2025, it was found that many students still have very limited vocabulary mastery. It was found that most students could not answer questions in English and did not understand the meaning of basic English vocabulary. These made students feel bored in learning vocabulary (A. Susanto, 2017). Meanwhile (Shah & Saleem, 2021) state that if we get students interested in playing with words and language, then we are already at least halfway to the goal of creating worldwide students who will make words a lifelong interest. It depicts that teachers need to get students excited about learning new vocabulary by using appropriate teaching techniques and media.

Simpler digital application refers to a technology tool or software that is friendly interface without complicated features, it doesn't require high technical skills or advanced devices. designed for one or a few clear functions and usually run on basic devices like smartphones, tablets, or laptops (Suleman, 2021). The application provides material about grammar, such as tenses, vocabulary, passive sentences, and sentence structure, which can help students understand all the complexities of learning English (Torkos & Torkos, 2021). (Govindasamy et al., 2019) mentions the application is perfect for students who want to increase their vocabulary, here students can learn many new vocabulary meanings.

Over the past few years, researchers have conducted some studies related to multimedia vocabulary enhancement. The studies conducted by (Hanna Hamsan et al., 2023) examined the effectiveness of using pictorial elements on enhancing students' learning of vocabulary at senior high school student levels. The findings showed it significantly benefits for enhancing students' vocabulary. Additionally, (Beyranvand & Rahmatollahi, 2021) argues the effect of Instagram and adobe connect on senior high school student's increasing their vocabulary mastery of verb criteria. Moreover, (Damanik & Katemba, 2022) indicate that watching English series on digital media can help students improve their vocabulary.

The previous studies highlighted the effectiveness of using digital technology on enhancing students' vocabulary, however, a significant gap remains. The understanding of how students' vocabulary engagement with simpler digital application using epistemology approach remains limited. Therefore, this study aimed to address this gap by investigating enhancing vocabulary through simpler digital applications by using epistemological approach to language learning. The research question was established as follows: How can simpler digital applications be used effectively to enhance vocabulary learning by applying an epistemological approach? This study uses quantitative experimental method to looks for the relationship between two or more variables or looks for the effect of one variable on another. In addition, experimental research is a type of method that is more accurate than other research methods in determining the causal relationship and more special epistemological-methodological approach in determining the causality of educational phenomena especially vocabulary enhancing (Zajić & Maksimović, 2022)

## METHOD

Epistemological approach was employed to know the enhancing vocabulary through simpler digital applications chosen to find the effect of certain treatments on others under controlled conditions (Fauziah, 2023), In addition, this study can be analysed using statistical

analysis so that the results of the treatment can be known more accurately by comparing the conditions before and after being given treatment (Maniatis, 2024). In this research, the researcher will use a pre-experimental with a one-group pretest-post-test design to know further the students enhancing of their vocabulary (Arisoy & Aybek, 2021)

### **Respondents**

The study was carried out at SMPN 1 Simpang Jernih. The study population was collected from class VII which consists of 23 students in the academic year 2025-2026. In this study, the researcher utilized purposive sampling technique to determine the research sample. Sampling is done deliberately by taking certain samples that have certain characteristics, criteria or properties. Samples will be selected from classes that are lacking in mastery of reading skills, especially reading comprehension. By selecting this method, it is more practical and easier to implement in a school setting, and the researcher could capture a diverse range of students

### **Instrument**

Data were collected through pretest, post-test and treatment. The test consisting of 20 multiple-choice questions designed to measure the students' vocabulary knowledge, particularly simple present tense. These questions were compiled based on vocabulary indicators appropriate for the ability level of junior high school students. After providing an explanation, the researcher distributed the pre-test sheets to all students and set a time allocation of 30 minutes to complete the test. This study employed an adapted pre and post-test that was conducted by (Barus & Tampubolon, 2022) which contained 20 questions about everyday conversations and students could find the right answers with an allocation of 40 minutes.

### **Data Analysis**

For data analysis, the researchers will convert student vocabulary scores using the following formula:

$$\text{Score} = \frac{\text{Total of students correct answers}}{\text{Total number of items in test}} \times 100$$

Following data collection, data analysis was the subsequent step. The researcher utilized statistical analysis and the SPSS 24 program to discover statistically significant variations between the students' pre-test and post-test results. During data analysis, the researcher computed each student's pre-test and post-test scores. Used the pre-test and post-test scores of the students, the researcher determined the mean score after obtaining the score calculation findings. Following the data collection method, data analysis was the subsequent stage. Utilizing t-test statistics for data analysis, the researcher applied statistical analysis and then SPSS program 24 software to assess whether there were significant differences between the students' pretest and posttest.

## **FINDINGS AND DISCUSSION**

### **Findings**

This research presents findings on the enhancement of students' vocabulary skills. These findings are based on the scores and classifications of pre-test and post-test results. As mentioned earlier, students' vocabulary skills were evaluated based on observations during the learning process using the Simpler application. The results of the application's implementation in data collection were conducted on students at SMP Negeri 1 Simpang Jernih. The data was analyzed based on the pre-test and post-test results (Renny Dwijayanti et al., 2023)

Researchers analyzed data obtained from 23 students who participated in learning using the Simpler application to enhance their english vocabulary mastery. The results showed a significant improvement after the students used the application. This study was conducted over five sessions, with each session focusing on the use of features in the Simpler application in enhancing students vocabulary through epistemological approach (Purwo et al., 2022) The material tested in the pre-test and post-test focused on vocabulary skills, so that the

comparison results could provide an objective picture of the development of students' vocabulary mastery.

## Discussion

Before the simpler application was implemented, the researcher found that second-grade students at SMP Negeri 1 Simpang Jernih still lacked vocabulary mastery, felt bored when learning English because the teacher used media that were not appealing to the students (Suryani et al., 2022). In addition, the researcher found that students could not pronounce vocabulary correctly because they made pronunciation errors. The total pre-test score obtained from all students was 750, with an average of 32.61. These results indicate that before the treatment, students' vocabulary mastery was still relatively low. After the treatment, which consisted of learning with the simpler application, the total post-test score increased to 1055, with an average of 45.87 (Wibowo, 2020). The increase in the average score of 13.26 points proves that the simpler application is effective in enhancing students' vocabulary. This discussion confirms that the use of simpler application enhances students' vocabulary through an epistemological approach.

### Students Classification

A pre-test and post-test were conducted to measure students' vocabulary skills before and after the treatment (Az Zahrah & Anwar, 2023). The results of both tests are summarized in the following frequency distribution table:

Table 1. The frequency and percentage of pretest and post test

No	Categories	Pre-Test		Post-Test	
		Frequency	Percentage	Frequency	Percentage
1	Very Good	0	0%	0	0%
2	Good	0	0%	3	13%
3	Average	3	13%	10	43,5%
4	Poor	16	69,6%	10	43,5%
5	Very Poor	4	17,4%	0	0%
	Total	23	100%	23	100%

The table above shows the categories, frequencies, and percentages of students in the vocabulary test. In the pre-test, almost all of the total number of students received poor scores, with a percentage of 69.6%, and some students even fell into the very poor category with a percentage of 17.4%. No students fell into the good or very good categories. However, after the post-test, there were students who achieved good scores, namely 3 students (13%). With the same number, the average and poor categories had 10 students (43.5%). Additionally, no students were able to achieve very good scores, although there were no longer any students who scored very poorly. The table above shows the percentage of students in different performance categories before and after the test. The pre-test shows that many students were in the average, poor, or very poor categories. The post-test shows that no students were in the very poor category, and the frequency value for student performance improvement was very good.

### Students Vocabulary Total Score Using SPSS

Through table 2 it can be seen that the learning outcomes of students in class VIII SMP Negeri 1 Simpang Jernih are seen from the total pre-test and post-test scores. After that, it is entered into the SPSS application. In this case, to find out the students' vocabulary learning outcomes. Student learning outcomes can be seen from the following table:

Tabel 2. Paired Samples Statistic

Test	N	Mean	Std. Deviation	Std. Error Mean
Pre-Test	23	32,61	11,369	2,371
Post-Test	23	45,87	14,354	2,993

Table 3 above presents the results of descriptive analysis of students' vocabulary scores obtained from the pre-test and post-test using the SPSS application. The number of samples studied was 23 students. In the pre-test results, the mean score obtained by students was 32.61 with a standard deviation of 11.369 and a standard error of the mean of 2.371. This mean score indicates that students' vocabulary skills before the treatment were still relatively low (Musa & Fojkar, 2019). The relatively high standard deviation also indicates that there is a significant



difference between students who obtained high scores and those who obtained low scores, meaning that their vocabulary skills are not yet evenly distributed.

Meanwhile, the post-test results showed a significant improvement. The average student score increased to 45.87, or an increase of approximately 13.26 points compared to the pre-test results. The standard deviation on the post-test was 14.354, indicating that although the average score increased, there was greater variation in student learning outcomes. This means that some students experienced a very high increase in their scores, which affected the overall distribution of scores. The standard error of the mean on the post-test was 2.993, which still indicates a relatively small average error rate.

The comparison of pre-test and post-test scores shows that the use of the Simpler digital application in vocabulary enhancement by epistemological approach has a positive impact on enhancing students' abilities. The increase in the average scores of students confirms that this application can help them expand their English vocabulary. Although there are variations in learning outcomes among students, in general, the results of this study show that the application of digital media-based applications can be an effective alternative to support language learning.

#### *Students Vocabulary Enhancement and Epistemological Approach*

The researcher attempts to guide epistemological approach for students vocabulary enhancement towards multiple dimensions such as pronunciation, word parts, meaning, word form, collocations, word associations, and usage constraints (Bernstein, 2018). It conducted for students will develop epistemic reasoning about how vocabulary knowledge grows and changes and actively engage in constructing and sharing knowledge about target vocabulary (Aloni et al., 2023). It means to understand what knowledge about words entails beyond just meaning and pronunciation and enhancing vocabulary mastery. The enhancement from each dimensions can be seen from the table below.

Table 3. Epistemological Approach

No	Question	Likert Scale	
		Strongly Agree	Strongly Disagree
1	I believe that knowing a word means understanding its multiple features	✓	
2	Vocabulary knowledge is something that develops over time through repeated use and exposure, not something fixed.	✓	
3	I learn new vocabulary best when I actively explore and make connections, rather than just memorizing definitions.	✓	
4	It's important to know where vocabulary knowledge comes from and question different sources rather than just accepting words as given.	✓	
5	Understanding vocabulary deeply requires thinking about different examples and contexts where the word is used.	✓	
6	Some words can have multiple meanings depending on the situation, and I am motivated to learn these nuances.	✓	
7	I believe that vocabulary learning requires effort and reflection about how words work together, not just simple memorization.	✓	
8	When I encounter new words, I think about how they relate to words I already know to strengthen my vocabulary.	✓	

The table above shows that an epistemological approach is appropriate for enhancing students' vocabulary mastery by applying simpler practices in classroom instruction (Boy, 2023). Overall, the statements received strong agreement, particularly regarding knowledge of vocabulary features such as pronunciation and meaning; actively exploring and making connections; understanding where vocabulary knowledge comes from; questioning different sources; recognizing that deep vocabulary understanding requires critical thinking; acknowledging that words may have multiple meanings depending on context; and realizing

that vocabulary learning requires effort and reflection on how words work together, rather than simple memorization, as well as the evolving nature of language (Zhou & Tan, 2020).

These items can be rated on a Likert scale ranging from strongly disagree to strongly agree to assess students' epistemological beliefs related to vocabulary learning and how these beliefs potentially support vocabulary acquisition and mastery (Connie & Risdianto, 2022). Such a questionnaire can help teachers identify students' epistemic orientations and tailor vocabulary instruction to foster more reflective, engaged, and effective learning (Hayes et al., 2024).

This study aligns with previous research, indicating that simpler applications can be beneficial in enhancing students' vocabulary through an epistemological approach. These practices focus on making epistemological concepts accessible and actionable in everyday vocabulary teaching, stimulating language awareness, curiosity, and learner responsibility while avoiding overwhelming complexity. In sum, epistemological approaches streamlined for classroom use encourage active, reflective, and socially interactive vocabulary learning, thereby effectively enhancing mastery through meaningful engagement. This study serves as a foundational model for future research focusing on the use of simpler applications in enhancing students' vocabulary.

## CONCLUSIONS

Based on the findings of the study, it can be concluded that the use of the Simpler application has proven to be effective in enhancing English vocabulary mastery of students at SMP Negeri 1 Simpang Jernih. This can be seen from the significant difference between the pre-test and post-test average scores, where the post-test results show a significant improvement after the treatment. Based on the t-test results, it was found that the calculated t-value was greater than the table t-value at a significance level of 5%. This means that the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_1$ ) is accepted, thus concluding that the Simpler app has a significant positive effect on students' vocabulary mastery. Through this technology-based learning, students can review, understand, and remember vocabulary more effectively, enjoyably, and in line with the learning needs at the junior high school level. This finding showed the positive influence of simpler application in enhancing students' vocabulary. Moreover, simpler application involvement could develop learner's motivation to enhance vocabulary in a language. Using epistemology approach transforms vocabulary learning into an engaging, reflective, and meaningful process, leading to richer knowledge, greater motivation, and more effective language use.

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