Journal of English Language Teaching
Department of English Language Education
FBS Universitas Negeri Padang, E-ISSN: 2302-3198
https://jelt.ppj.unp.ac.id/index.php/jelt

The effectiveness of semantic mapping method in improving students' vocabulary mastery at SMP N 1 Ranah Pesisir

Rati Putri Anggreini[1*], Sitti Fatimah[1]
[1] English Department, Faculty of Language and Arts, Universitas Negeri Padang
Correspondence Email: ratikaiputri@gmail.com

Volume 15, Number 1, 2026, 206-212
DOI: https://doi.org/10.24036/g30pdd42

Abstract:
This research aims to see the effectiveness of semantic mapping method in improving students' vocabulary mastery in UPT SMP N 1 Ranah Pesisir. This study used a quantitative method with pre- experimental research design involving eight grade students as the sample. The population of this research is 28 students of VIII.3 class. The data were collected by using vocabulary pre-test and post-test as the instruments of this research and analyzed by using SPSS. The findings show that students got higher score in post-test. Pre-test mean score is 31.9918, while post-test mean score is 80.3957. It shows the significance improvement between pre-test score and post- test score. To see how effective the method is, effect size test was used in this research. The result shows the effect size method is 0.876 which is bigger than 0.5. It interprets this method is very effective. It can be concluded that semantic mapping method is effective in improving students' vocabulary mastery.

Keywords:
Vocabulary, mastery, semantic mapping.

1. INTRODUCTION AND LITERATURE REVIEW

Vocabulary is one of the most crucial elements in learning English. It serves as the foundation for understanding and producing language. Without adequate vocabulary, learners cannot communicate their ideas effectively or comprehend messages in spoken and written forms. In learning English, therefore, students are expected to master vocabulary well in order to support their understanding and communication. As Nikolov (2009) states, vocabulary and grammar are the two key language components that play the most significant roles in language comprehension and communication. This means that mastery of vocabulary contributes directly to learners' overall English proficiency, including their listening, reading, speaking, and writing skills. Similarly, Destika (2022) stated that vocabulary is the basis of language learning. Thus, when students begin learning a new language, the first essential step is to learn its vocabulary. The mastery of vocabulary influences the students' success in learning English. If students have sufficient vocabulary knowledge, they can understand the lessons easily and comprehend what the teacher explains in class.

Mastering vocabulary also has a strong relationship with students' communication

skills. The more words students know, the better their ability to express themselves in English. Students who have a large vocabulary range can select appropriate words in communication, which enhances their fluency and accuracy. This view is supported by Marselina et al. (2024), who emphasize that in order to communicate effectively, students should master a wide range of vocabulary. When learners know many words, they are able to apply them in conversations and express ideas more clearly. The more vocabulary students acquire, the more fluent they can become in speaking, as they have a wide range of lexical choices to use in daily communication.

However, mastering vocabulary does not mean learning all words in the language. There are thousands of words in English, and students must focus on those that are most relevant to their learning needs and communication goals. According to the Berkeley Unified School District (ca. 2013), teachers need to be selective in deciding which words to teach intensively, which to introduce for familiarity, and which to omit. Vocabulary selection should focus on words that have a significant impact on the meaning of texts, appear frequently across different contexts, and are useful for students' speaking and writing skills. These criteria suggest that the words students learn should be relevant to their everyday communication and academic activities. In terms of vocabulary mastery, students should not only recognize the meanings of words but also be able to use them accurately in both spoken and written contexts.

Another common problem comes from the teaching method itself. Many teachers continue to use traditional approaches in teaching vocabulary. Typically, teachers ask students to memorize a list of vocabulary items and recite them in front of the class. This approach, however, fails to promote understanding, as students are not taught how to use those words in sentences or contexts. As a result, they may be able to recall words temporarily but cannot comprehend them when they appear in a text. This problem is aligned with the findings of Arochman et al. (2023), who state that students should be provided with word lists accompanied by definitions and contextual examples. Teaching vocabulary with meaning and context helps students to understand not only the translation but also how and when to use words appropriately. Therefore, teachers should not limit vocabulary teaching to rote memorization but instead guide students to use vocabulary in meaningful and communicative contexts.

In Indonesia, traditional teaching methods are still widely used in English classrooms. According to Gultom et al. (2022), many Indonesian English teachers still rely on memorization techniques when teaching vocabulary to young learners. This method is often considered the easiest way to increase students' vocabulary knowledge. However, memorization alone is not sufficient to develop students' ability to understand and use vocabulary effectively. Teachers should explore more innovative and effective methods that can make learning more enjoyable and interactive. If students find English learning interesting and fun, they will be more motivated and active in the classroom. This, in turn, will improve their English proficiency and change their perception that English is a difficult subject.

Based on classroom experience during teaching practice, it was found that many students view English as a difficult subject, especially when it comes to memorizing words. At SMPN 1 Ranah Pesisir, for example, students were often asked to memorize vocabulary provided by the teacher in every meeting. The teacher usually wrote a list of vocabulary on the board related to the lesson, asked students to translate it, and then gave them a few minutes to memorize the words. Afterward, students were called to the front of the class to recite the words and their translations. Although this method was conducted regularly, students'

performance in daily tests showed that they did not truly understand the meaning or use of the words they memorized. The tests included vocabulary items that had been memorized, but students still struggled to comprehend them in reading passages or writing tasks. This indicates that the memorization technique did not help students develop deeper vocabulary understanding or practical usage skills. Students could remember the words temporarily but did not know how to apply them in sentences or recognize them in context. This led to low test scores and poor overall vocabulary mastery.

Based on classroom needs and the problems observed at SMPN 1 Ranah Pesisir, semantic mapping is considered a suitable alternative to traditional vocabulary teaching methods. It is expected to encourage students to learn vocabulary through categorization, visualization, and contextual association. Since many students prefer creating something visual rather than memorizing isolated words, this method can increase student engagement and motivation. Moreover, semantic mapping allows students to understand the meaning and usage of words in context, which contributes to better vocabulary retention and application. The method also shifts classroom dynamics from teacher-centered to student-centered learning, fostering active participation and interaction.

In this research, vocabulary instruction will be based on the school's curriculum, specifically focusing on the topics of *asking and giving opinions* and *expressing likes and dislikes*. These topics are essential for communication in daily life and are included in the English curriculum for 8th-grade students. The vocabulary components that will be taught include verbs, adjectives, nouns, and adverbs. These parts of speech form the core of sentence construction and are directly related to the students' ability to understand and produce language.

Previous studies show that semantic mapping is a helpful method in learning English. Although Salihoğlu and Yalçın (2022) found that the keyword technique gave the highest vocabulary scores, semantic mapping still gave good results. In another study, Wahab and Astri (2022) found that this method increased students' interest and motivation, with most students showing high enthusiasm. In addition, Sundari and Daulay (2024) showed that semantic mapping improved students' reading comprehension, as students who used it got higher scores than those who did not. Overall, these studies suggest that semantic mapping can help improve students' vocabulary, reading skills, and motivation in learning English. Based on these considerations, the researcher limits the study to examining the effectiveness of the semantic mapping method in teaching vocabulary to 8th-grade students at SMPN 1 Ranah Pesisir. The focus of the vocabulary is on the four main parts of speech (verbs, nouns, adjectives, and adverbs) derived from the English materials in the curriculum used at the school. The purpose of the study is to determine whether the semantic mapping method can effectively improve students' vocabulary mastery.

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2. METHOD

This research used a pre-experimental design with a one group pre-test and post- test design. This design was chosen because the researcher wanted to find out whether the use of semantic mapping method could improve students' vocabulary mastery or not. According to Creswell (2014), this design involves giving a pre-test before the treatment and a post-test after the treatment to see the improvement.

The population of this research was all eighth-grade students of SMPN 1 Ranah Pesisir in the academic year 2024/2025. There were 144 students divided into five classes. The sample was chosen by using cluster random sampling technique because the population was already grouped into classes. The sample was chosen by using the "Wheel of Names" website, and the

result showed that class VIII.3, which consisted of 28 students, was selected as the sample. According to Gay et al. (2012), 10–20% of the population is enough for experimental research, so this number was considered appropriate.

The data of this research were quantitative data, which were collected through a vocabulary test. The test consisted of a pre-test and a post-test. Each test had 30 items in the form of multiple-choice and matching items. The materials were based on the *Merdeka Curriculum*. The validity of the test was checked through content validity and construct validity. Content validity was checked by an English lecturer, while construct validity was tested in another class. The result showed that all items were valid because the r-count value was higher than the r-table (0.388). The reliability was tested by using Cronbach Alpha, and the result was 0.857, which means the test was reliable.

The treatment was done in eight meetings. In every meeting, the researcher used semantic mapping activities, both top-down and classical mapping. Students were asked to connect words in a map and use them in sentences or short discussions.

After collecting the data, the researcher analyzed them by using descriptive and inferential statistics. Descriptive statistics were used to find the mean, median, and standard deviation. Inferential statistics were used to test the hypothesis by using paired sample t-test or Wilcoxon Signed Rank Test, depending on the data distribution.

3. RESULTS AND DISCUSSION.

Research Finding

The findings of this research were collected based on the results of the pre-test and post-test from the class that being sampled. The outcome will be explained as follow.

Table 1. Data Description

	Pre-Test	Post Test
Total Score	844	1144
Mean Score	30.142	40.857
Maximum Score	56	60
Minimun Score	16	24

The items of the Pre-test consisted of 25 items, 20 multiple choices and 5 matching items. The researcher had done the validity and reliability for the test items. The result showed that all items were valid. The students did the pre-test before the researcher gave the treatment. Students' total score in the pre-test is 844. The mean score is 30.142. The highest score is 56 and the lowest score is 16.

Post-test was given to the students after 4 meetings of the semantic mapping method treatment. The test was given to see whether the semantic mapping gives the improvement to students' vocabulary mastery. Students' total score in the post test showed improvement compared with the total score in the pre-test. Students' total score in the post test is 1144 which is higher than the total score in the pre-test. This indicates a substantial increase in students' overall performance in the class. The mean score also improved from 30.142 to 40.857 in the post test, showing that students' average vocabulary achievement increased after being taught

using the semantic mapping method.

The hypothesis test was analysed by using Non-Parametric Wilcoxon Signed Rank Test. The researcher used this because one of the data was not normally distributed. The result of Non-Parametric Wilcoxon signed rank test is presented in the following graphic.

Test Statistics[a]

	Posttest - Pretest
Z	-4.657[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Graphic 1. Statistic Test

Based on the results of the Wilcoxon Signed Rank Test in the statistics table, it was obtained that Z = -4.657 with Asymp. Sig. (2-tailed) of 0.000. Since, the significance value is smaller than the significance level of 0.05 (0.000 < 0.05), it can be concluded that there is a significant difference between the pre-test and post-test results. Thus, the alternative hypothesis (H_A), which states that there is an improvement in students' vocabulary mastery after the treatment. It means H_A is accepted.

The researcher conducted effect size analysis to see how much the semantic mapping method improve students' vocabulary mastery. Effect size test was used because the data is not normally distributed. From the calculation, the r score is 0.88 which means the interpretation of effect size is big because 0.88 > 0.5. This means Semantic Mapping method is very effective in improving students' vocabulary mastery at UPT SMP N 1 Ranah Pesisir.

Based on this result, it means the data is not normally distributed. In the next test which is Wilcoxon Signed Rank Test, it was obtained that Z = -4.657 with Asymp. Sig. (2-tailed) of 0.000. It indicates the significance value is smaller than the significance level of 0.05 (0.000 < 0.05). It indicates the significance improvement of students' scores. The effect size test also done to see how effective the treatment is. The result shows that the r score is 0.88 which means the effect size is big because 0.88 > 0.5. It indicates the semantic mapping method is very effective.

Discussion

The aim of this study was to investigate the effectiveness of semantic mapping in improving students' vocabulary mastery. The results obtained from the pre-test and post-test indicate that students showed improvement after being taught through semantic mapping. This means that semantic mapping method successfully helped students recall vocabulary effectively.

This result is aligned with the study conducted by Maulidia and Angraini (2025), who investigated the utilization of semantic mapping to enrich students' vocabulary mastery at SMP Tri Dharma Palembang. Using a one-group pre-test and post tests design. The findings showed a significant improvement in students' vocabulary achievement after the implementation of semantic mapping. The students' mean score increased from 59.31 in the pre-test to 82.20 in the posttest. The Wilcoxon signed ranks test showed a Z value of -3.885 with a p-value below 0.001, indicating a statistically significant difference between pretest and post test scores. These

results are consistent with the present study, as both findings demonstrate that semantic mapping effectively enhances students' vocabulary mastery. In addition, students became more motivated, actively engaged, and confident in learning vocabulary through visual organization and word relationship.

Based on the data findings, it shows that semantic mapping method is effective in improving students' vocabulary mastery. The researcher used effect size analysis test to see how effective is semantic mapping method. Based on the data calculation using effect size analysis, it was found that semantic mapping presents high effectiveness in improving students' vocabulary. The data showed the effect size of semantic mapping is 0.88 which means it is bigger than 0.5. If the effect size score is bigger than 0.5, it is calculated as high effectiveness. Semantic mapping can be visually represented in different forms to support vocabulary learning. Georgakopoulos (2019) explains that classical semantic maps use lines to connect words with similar meanings, while proximity maps use spatial distance between points to show the degree of similarity. These visual structures help learners organize and relate vocabulary more effectively, which supports the improvement of vocabulary mastery found in this study.

The results of this study are clearly supported by previous research, providing strong evidence of the effectiveness of semantic mapping. Maulidia and Angraini (2025) demonstrated a significant improvement in students' vocabulary mastery, with mean scores increasing from 59.31 in the pre-test to 82.20 in the post-test, supported by statistically significant results. In addition, Faruk and Aturahma (2023) found that semantic mapping effectively helped students understand, remember, and relate vocabulary more easily, while also increasing their participation and interest in learning. These consistent findings serve as strong empirical proof that semantic mapping is an effective strategy for improving students' vocabulary mastery.

4. CONCLUSION

Based on the data analysis and the results of this research, it can be concluded that using semantic mapping method has successfully increased students' score on the post-test. The data analysis showed that post-test scores are much higher than the pre- test scores. All students have done the post-test, and all students got higher score than their pre-test. This indicates that there is improvement on using semantic mapping in the class to teach vocabulary. This result showed that semantic mapping can be used to teach vocabulary in the class for eight grade students. This indicates that the research aim which is to see whether semantic mapping method can improve students' vocabulary mastery has succeeded. Teachers can apply this method to get more engaging and interactive learning. This method can support learning activity especially when teaching vocabulary.

Furthermore, from the results can be seen that null hypothesis is rejected. It does not prove that semantic mapping technique does not give significant improvement to students' vocabulary mastery at SMPN 1 Ranah Pesisir. Conversely, alternative hypothesis is accepted where semantic mapping has proven to give significant improvement to students' vocabulary mastery at SMPN 1 Ranah Pesisir. This indicates semantic mapping method can be applied by teachers in the class. Due to the fact that the treatment was effective, and students become more active.

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