



Investigating Semantic Construction through Word Mapping: Enhancing Vocabulary Development among Suburban Indonesian EFL Learners

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Received: June 2026; Revised: July 2026; Accepted: August 2026; Published: September 2026

Vocabulary knowledge plays a crucial role in English language proficiency; however, limited vocabulary remains a major challenge among Indonesian EFL learners, particularly in suburban junior secondary schools where students have limited exposure to authentic English use. This study investigated the effect of the Word Mapping strategy on vocabulary development among eighth-grade EFL students in a suburban Indonesian context. A quantitative pre-experimental design using a one-group pretest-posttest approach was employed. The participants were 31 eighth-grade students at SMPN 3 Gunungsari, West Lombok, Indonesia, selected through purposive sampling. Data were collected using researcher-developed vocabulary achievement tests administered before and after the intervention. The data were analyzed using descriptive statistics and paired-samples t-test with SPSS version 25. The findings revealed that students' mean vocabulary scores increased from 55.35 (SD = 5.85) in the pretest to 76.39 (SD = 5.87) in the posttest, representing a gain of 21.04 points. The paired-samples t-test indicated a statistically significant difference between pretest and posttest scores ($p < .001$). These findings suggest that Word Mapping supports vocabulary development by enabling learners to organize lexical knowledge through semantic relationships and visual representations. Although the absence of a control group limits causal interpretation, the study provides preliminary evidence that Word Mapping is a promising strategy for vocabulary instruction in suburban EFL classrooms.

Keywords: Word mapping; Vocabulary development; Semantic networks; Suburban Education

How to Cite: Setianingsih, T., Kamarudin, K., & Ariani, S. (2026). Investigating Semantic Construction through Word Mapping: Enhancing Vocabulary Development among Suburban Indonesian EFL Learners. *Journal of Language and Literature Studies*, 6(3), 1448-1459. doi: <https://doi.org/10.36312/jolls.v6i3.5620>



<https://doi.org/10.36312/jolls.v6i3.5620>

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INTRODUCTION

Vocabulary knowledge represents a fundamental component of second and foreign language proficiency because it supports learners' ability to comprehend and produce meaningful communication across listening, speaking, reading, and writing skills. However, vocabulary knowledge should not be understood merely as the accumulation of isolated words but as a dynamic process of lexical development involving the acquisition, organization, retention, retrieval, and contextual use of lexical items (Cheng, 2023; Coch et al., 2023; García-Gómez & Rueda-Sánchez, 2026). From this perspective, vocabulary learning requires learners to develop rich connections among words, meanings, and contexts rather than simply memorizing definitions. Nation's conceptualization of vocabulary development emphasizes the reciprocal relationship between vocabulary knowledge and overall language proficiency, where vocabulary growth enables language use while meaningful language use further expands lexical knowledge (García-Gómez & Rueda-Sánchez, 2026; Norambuena et al., 2022). Therefore, effective vocabulary instruction should focus not only on increasing the

number of known words but also on strengthening learners' semantic knowledge, word associations, and ability to retrieve vocabulary appropriately during communication.

Recent developments in vocabulary acquisition research highlight the importance of semantic organization and lexical networks in supporting long-term vocabulary retention. Lexical network theory suggests that vocabulary is stored and accessed through interconnected systems of meaning rather than as independent units (Coch et al., 2023; Norambuena et al., 2022). When learners establish relationships between new vocabulary and existing knowledge through semantic associations, they are more likely to retain and retrieve words effectively. This perspective challenges traditional vocabulary instruction that relies heavily on memorizing word lists and isolated meanings. Instead, vocabulary learning requires meaningful cognitive processing in which learners actively analyze relationships among words, concepts, and contexts. Consequently, instructional approaches that facilitate semantic connections are increasingly considered valuable for developing deeper lexical knowledge and improving language performance.

One instructional strategy aligned with this theoretical perspective is Word Mapping, a visual-semantic approach that enables learners to organize vocabulary through interconnected representations. Word Mapping allows students to connect target words with definitions, synonyms, antonyms, examples, categories, contextual meanings, and visual representations. Through this process, learners construct semantic networks that integrate new vocabulary with their existing knowledge structures (Coch et al., 2023; Fernández & Lei, 2022; García et al., 2020; Leonard, 2021; Loeza, 2023; Muñoz & Toala-Vera, 2023; Rodríguez, 2024; Sánchez, 2022; Valencia, 2021; Villalobos, 2020). Unlike conventional vocabulary learning approaches that emphasize repetition and memorization, Word Mapping encourages learners to actively examine relationships among lexical items. This deeper level of processing may facilitate stronger memory formation, improve retrieval, and support the transfer of vocabulary knowledge into authentic language use.

Empirical studies have demonstrated the potential of visual-semantic vocabulary strategies in improving vocabulary learning outcomes, learner engagement, and reading comprehension. Research on semantic maps, lexical networks, and related vocabulary organizers indicates that learners benefit when vocabulary instruction emphasizes conceptual relationships rather than disconnected word meanings (García et al., 2020; Muñoz & Toala-Vera, 2023; Rivero-Contreras & Saldaña, 2021; Rodríguez, 2024). These findings suggest that vocabulary development is enhanced when learners are provided with opportunities to organize and elaborate lexical information. However, previous evidence has predominantly emerged from urban schools or relatively well-resourced educational environments, where learners often have greater access to instructional support and authentic English exposure (Cheng, 2023; García et al., 2020; Simón et al., 2022; Vegas, 2023). As a result, less is known about how Word Mapping functions in educational contexts where students experience limited resources and fewer opportunities for English language interaction.

This issue is particularly relevant in suburban Indonesian junior secondary schools. Although suburban schools may have better educational conditions than rural areas, they frequently experience challenges related to limited technological facilities, restricted exposure to authentic English communication, and fewer opportunities for independent vocabulary development (Abdullah, 2024; Cheng, 2023). In such contexts, vocabulary instruction requires strategies that are pedagogically effective while remaining practical and accessible within regular classroom conditions. Instructional approaches that depend heavily on digital technology may not always be feasible; therefore, low-resource strategies that promote active vocabulary learning become increasingly important. Word

Mapping offers potential advantages in these settings because it uses visual organization and semantic relationships without requiring sophisticated technological resources.

The need for vocabulary-focused intervention is also evident from classroom realities. Preliminary observations at SMPN 3 Gunungsari, West Lombok, indicate that limited vocabulary knowledge remains a major obstacle affecting students' ability to understand English texts, express ideas, and use newly learned vocabulary appropriately. Students' difficulties were associated with limited English exposure, insufficient vocabulary learning strategies, and challenges in connecting vocabulary knowledge with meaningful language use. These conditions suggest that vocabulary instruction should move beyond memorizing lists of words and instead support learners in constructing meaningful lexical relationships (Cheng, 2023). Therefore, investigating Word Mapping within this context provides an opportunity to understand how semantic-based vocabulary instruction can address vocabulary challenges among suburban EFL learners.

Despite growing evidence supporting Word Mapping, several research gaps remain. First, previous studies have provided limited evidence regarding the implementation of Word Mapping in suburban Indonesian junior secondary schools, where educational conditions differ from urban learning environments (Abdullah, 2024; Cheng, 2023). Second, many previous investigations have employed quasi-experimental designs involving comparison groups, while fewer studies have explored within-group changes following vocabulary interventions in authentic classroom settings (Cheng, 2023; Vegas, 2023). Third, previous studies have frequently focused on vocabulary mastery as a test outcome rather than examining vocabulary development as a process of semantic organization and lexical network construction. Addressing these gaps is important because vocabulary knowledge involves not only the ability to recognize words but also the ability to understand relationships among words and apply them appropriately in different contexts.

Accordingly, the present study investigates Word Mapping as a strategy for supporting vocabulary development among eighth-grade EFL students in a suburban Indonesian junior secondary school. Unlike previous research that primarily evaluates vocabulary improvement through traditional achievement measures, this study positions Word Mapping within the broader theoretical framework of lexical development and semantic network formation. The novelty of this study lies in examining the implementation of Word Mapping in an underrepresented educational context—suburban Indonesian EFL classrooms—while emphasizing vocabulary development as a process of semantic organization rather than simple word accumulation. Furthermore, the study provides empirical evidence regarding changes in students' vocabulary achievement following Word Mapping instruction through a one-group pretest–posttest design, contributing contextual evidence regarding the feasibility of low-resource, visually based vocabulary instruction.

Based on this background, the objective of this study is to examine changes in students' English vocabulary achievement following the implementation of the Word Mapping strategy among eighth-grade EFL students in a suburban Indonesian junior secondary school. Specifically, this study aims to determine students' vocabulary achievement before and after the intervention and examine whether significant differences exist between pretest and posttest vocabulary performance. The study addresses the following research questions: What are the levels of English vocabulary achievement among eighth-grade EFL students before and after the implementation of the Word Mapping strategy in a suburban Indonesian junior secondary school? Is there a statistically significant difference between students' vocabulary achievement before and after the implementation of the Word Mapping strategy?

METHOD

Research Design

This study employed a quantitative pre-experimental research design using a One-Group Pretest–Posttest Design to investigate changes in students' vocabulary achievement following the implementation of the Word Mapping strategy. This design was selected because the purpose of the study was to examine differences in students' vocabulary performance before and after receiving the instructional intervention within an authentic classroom setting. Unlike true experimental and quasi-experimental designs, the pre-experimental design does not involve a control group; therefore, it is primarily intended to identify changes associated with an instructional treatment rather than establish definitive causal relationships.

The research design followed the structure $O_1 - X - O_2$, where O_1 represented the vocabulary pretest administered before the intervention, X represented the implementation of the Word Mapping strategy, and O_2 represented the vocabulary posttest administered after the intervention. The difference between students' pretest and posttest scores was used to determine changes in vocabulary achievement after the instructional treatment. This design was considered appropriate because it allowed the researcher to evaluate the effectiveness of Word Mapping without disrupting the regular teaching schedule. The approach also provided preliminary empirical evidence regarding the potential contribution of semantic-based vocabulary instruction in suburban EFL classrooms. However, because no comparison group was included, the findings were interpreted as evidence of vocabulary improvement following the intervention rather than absolute proof that Word Mapping alone caused the observed changes.

Participants

The participants of this study were eighth-grade students enrolled at SMPN 3 Gunungsari, West Lombok, Indonesia, during the 2025/2026 academic year. The population consisted of all eighth-grade students distributed across five intact classes, comprising approximately 150 students. All classes followed the same English curriculum, learning objectives, and instructional schedule. The students were generally 13–14 years old and had comparable learning experiences based on the national English curriculum implemented at the school.

A purposive sampling technique was employed to select the research participants. One intact classroom, Class VIII A, consisting of 31 students, was selected as the research sample. The class was chosen based on practical considerations, including availability during the research period, teacher recommendation, and the ability to participate in the complete sequence of pretest, instructional intervention, and posttest activities. The selection was not based on students' academic achievement or previous vocabulary proficiency.

The participants consisted of 13 male and 18 female students who had previously received English instruction as part of the national curriculum. To maintain data consistency, students were included if they were officially enrolled in Class VIII A, participated in all Word Mapping instructional sessions, completed both assessments, and fulfilled the research requirements. Students who were absent during assessment sessions or did not complete the intervention activities were excluded from the final analysis.

Instruments and Data Collection

The primary instrument used in this study was a vocabulary achievement test designed to measure students' English vocabulary knowledge before and after the Word Mapping intervention. The instrument consisted of two equivalent forms: a pretest administered before the intervention and a posttest administered after the instructional

treatment. Each test contained 25 multiple-choice items developed according to eighth-grade English curriculum objectives and focused on vocabulary related to daily activities.

The test items assessed several dimensions of vocabulary knowledge, including word meaning recognition, synonym and antonym identification, contextual vocabulary use, and word categorization. To ensure content validity, the instrument was reviewed by two English education experts and one experienced junior secondary English teacher. Feedback regarding content relevance, language clarity, and alignment with learning objectives was incorporated into the revision process. The instrument was also piloted with students possessing similar characteristics to the research participants, and reliability analysis indicated acceptable internal consistency with Cronbach's alpha/KR-20 of 0.75.

Data collection was conducted in three stages. First, students completed the vocabulary pretest within 60 minutes to identify their initial vocabulary achievement. Second, the researcher implemented the Word Mapping strategy during regular English lessons, where students constructed vocabulary maps containing definitions, synonyms, antonyms, examples, categories, and contextual meanings. Finally, students completed the posttest using an equivalent vocabulary assessment. The comparison between pretest and posttest scores provided evidence of vocabulary development following the intervention.

Data Analysis

The quantitative data obtained from the vocabulary assessments were analyzed using IBM SPSS Statistics version 25. Data analysis consisted of descriptive and inferential statistical procedures to examine changes in students' vocabulary achievement following the Word Mapping intervention. Descriptive statistics were initially conducted to summarize students' vocabulary performance before and after the treatment. The analysis included mean scores, median, mode, standard deviation, minimum scores, maximum scores, and mean differences between pretest and posttest results. These statistical indicators provided an overview of the magnitude and distribution of students' vocabulary improvement.

Before conducting hypothesis testing, prerequisite analysis was performed to examine whether the data met the assumptions for parametric analysis. Normality testing was conducted using the Shapiro–Wilk test, focusing on the distribution of score differences between pretest and posttest. A significance value greater than .05 indicated that the normality assumption was satisfied.

Because the study involved two related measurements obtained from the same participants, a paired-samples t-test was employed to determine whether there was a statistically significant difference between students' vocabulary achievement before and after the intervention. This analysis was appropriate because it compares scores obtained from the same group under two different conditions. The statistical interpretation included mean differences, standard error, confidence intervals, t-values, degrees of freedom, significance values, and effect size using Cohen's d. Statistical significance was determined at the .05 level.

RESULTS AND DISCUSSION

Results

This study investigated the role of the Word Mapping strategy in supporting vocabulary development among eighth-grade EFL learners in a suburban Indonesian junior secondary school context. The study was motivated by the persistent challenge of limited vocabulary knowledge among EFL students, particularly difficulties in understanding, retaining, and appropriately using new lexical items. To address this issue, the study implemented Word Mapping as a semantic-based vocabulary learning

strategy that enables learners to organize lexical items through meaningful connections, including definitions, synonyms, antonyms, examples, categories, and contextual meanings. Vocabulary achievement was measured using researcher-developed pretest and posttest instruments administered before and after the instructional intervention. The collected data were analyzed using descriptive statistics and paired-samples t-test to examine changes in students' vocabulary performance following the implementation of Word Mapping. The findings presented in the following sections describe students' vocabulary achievement before and after the intervention and examine whether statistically significant differences occurred between the two measurements.

What are the levels of English vocabulary achievement among eighth-grade EFL students before and after the implementation of the Word Mapping strategy in a suburban Indonesian junior secondary school?

The descriptive analysis revealed differences in students' vocabulary achievement before and after the implementation of the Word Mapping strategy. The pretest results indicated that students initially demonstrated relatively limited vocabulary achievement. The mean pretest score was 55.35 (SD = 5.85), with the highest score of 64 and the lowest score of 44. These results indicate that before receiving the intervention, students experienced difficulties in mastering English vocabulary, particularly in understanding, retaining, and appropriately applying new lexical items. The variation between the minimum and maximum scores also suggests differences in students' initial vocabulary proficiency levels.

Following the implementation of the Word Mapping strategy, students demonstrated improved vocabulary achievement. The posttest mean score increased to 76.39 (SD = 5.87), representing an observed gain of 21.04 points compared with the pretest performance. In addition, the maximum score increased from 64 to 88, while the minimum score improved from 44 to 68. The improvement in both the highest and lowest scores indicates that the intervention benefited students across different levels of initial vocabulary ability rather than only students with higher proficiency. The relatively stable standard deviation values between the pretest (SD = 5.85) and posttest (SD = 5.87) indicate that the improvement occurred consistently across the class. The score increase was not concentrated among only a small number of high-performing students but appeared across the group. This pattern suggests that Word Mapping provided a learning structure that supported students with different vocabulary backgrounds by enabling them to organize lexical information through visual and semantic relationships.

Table 1. Students' Vocabulary Achievement Before and After Word Mapping

Measurement	N	Mean	Standard Deviation	Minimum Score	Maximum Score
Pretest	31	55.35	5.85	44	64
Posttest	31	76.39	5.87	68	88
Mean Gain		21.04			

The descriptive findings indicate that students achieved higher vocabulary scores after participating in Word Mapping instruction. The improvement reflects the potential contribution of semantic-based vocabulary learning, where students organize vocabulary through relationships among meanings, categories, examples, and contextual usage rather than memorizing isolated words. This study examined the classification of students' learning outcomes based on pre-test and post-test scores in English vocabulary instruction using the Word Mapping strategy. To address the research problem, the researcher administered two assessments: a pre-test and a post-test, conducted respectively before and after the implementation of the Word Mapping strategy.

The pre-test aimed to determine students' initial vocabulary mastery prior to the treatment, while the post-test was designed to measure improvements resulting from the application of the strategy. The post-test scores provided the basis for evaluating the effectiveness of the Word Mapping strategy in enhancing vocabulary mastery among eighth-grade students. The data collected were analyzed descriptively, including the calculation of total scores, mean scores, minimum and maximum values, and standard deviation. Figure 1 presents the pre-test and post-test results of the 31 students who participated in the study.

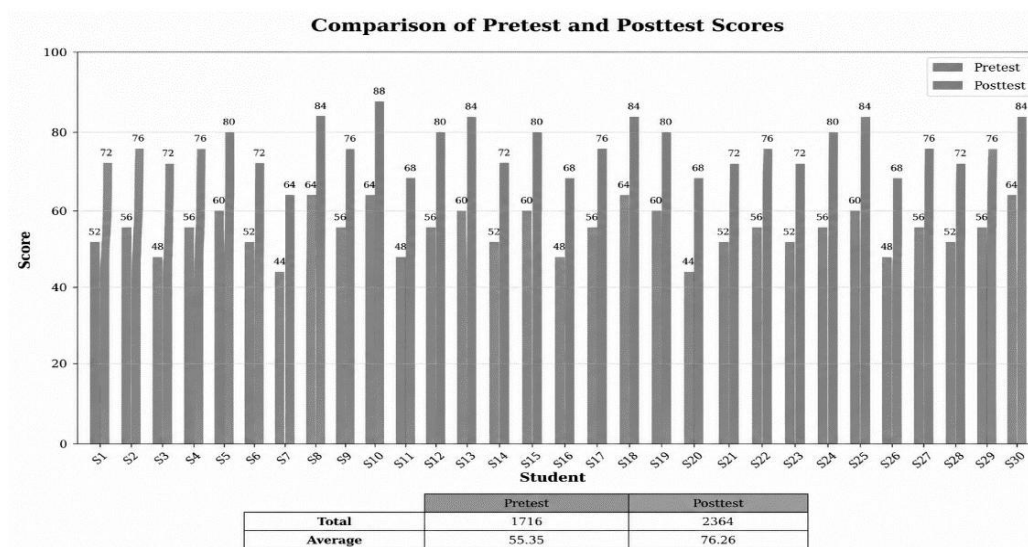


Figure 1. Students' Vocabulary Score in Pretest and Posttest

Descriptive statistical analysis was performed using SPSS version 25.0, including calculations of mean scores, minimum and maximum values, and standard deviation. These analyses provided a clear overview of the students' performance before and after the implementation of the Word Mapping strategy, allowing for the assessment of its effectiveness in improving vocabulary mastery.

Is there a statistically significant difference between students' vocabulary achievement before and after the implementation of the Word Mapping strategy?

To answer the second research question, inferential statistical analysis was conducted using a paired-samples t-test because the study compared two related measurements obtained from the same group of students before and after the instructional intervention. Before hypothesis testing, prerequisite analysis was conducted to examine whether the data met the assumptions for parametric testing. The normality test showed that the pretest and posttest data fulfilled the normality assumption, with significance values of 0.050 for the pretest and 0.099 for the posttest. These values indicated that the data distribution was appropriate for parametric analysis.

The paired-samples t-test results demonstrated a statistically significant difference between students' vocabulary achievement before and after the implementation of Word Mapping. The analysis showed that the significance value was $p < .001$, which was below the .05 significance level. The calculated t-value ($t = 68.46$) indicated that the difference between pretest and posttest scores was statistically significant. Furthermore, the mean difference between the two measurements was 20.90 points with a 95% confidence interval ranging from 20.28 to 21.53. The effect size analysis produced a Cohen's d value of 12.30, indicating a very large magnitude of improvement following the intervention.

Table 2. Paired-Samples t-Test Results

Comparison	Mean Difference	t-value	df	p-value	Cohen's d
Pretest–Posttest	20.90	68.46	30	< .001	12.30

The statistical findings confirm that students' vocabulary achievement significantly improved after receiving Word Mapping instruction. However, because this study employed a one-group pretest–posttest design without a control group, the results should be interpreted as evidence of improvement following the intervention rather than definitive proof that Word Mapping alone caused the observed gains. Other uncontrolled factors, such as students' familiarity with the test format, classroom experiences, or natural language development, may also have contributed to the improvement.

The findings demonstrate that the implementation of the Word Mapping strategy was associated with substantial improvement in vocabulary achievement among eighth-grade EFL students in a suburban Indonesian junior secondary school. Students showed higher vocabulary scores after the intervention, with improvement observed across the entire class distribution. The statistical analysis confirmed that the difference between pretest and posttest achievement was significant. These findings provide preliminary empirical evidence that Word Mapping can serve as a promising vocabulary instruction strategy, particularly in suburban EFL contexts where students require accessible approaches that strengthen semantic organization and lexical connections.

The findings also support the theoretical assumption underlying Word Mapping that vocabulary development occurs through meaningful organization of lexical knowledge. By connecting words through definitions, synonyms, antonyms, categories, examples, and contextual meanings, students are encouraged to construct richer lexical representations that may support vocabulary retention and retrieval.

Discussion

The findings of this study demonstrate that the implementation of the Word Mapping strategy was associated with substantial improvement in students' vocabulary achievement among suburban Indonesian EFL learners. Students' mean vocabulary scores increased from 55.35 in the pretest to 76.39 in the posttest, representing a gain of 21.04 points. Furthermore, the paired-samples t-test revealed a statistically significant difference between pretest and posttest scores ($t(30) = 68.46$, $p < .001$), indicating that students achieved higher vocabulary performance after participating in Word Mapping instruction. These findings provide empirical support for the potential contribution of semantic-based vocabulary instruction in improving learners' lexical achievement. However, because the study employed a one-group pretest–posttest design without a control group, the improvement should be interpreted as evidence of increased vocabulary performance following the intervention rather than definitive proof that Word Mapping alone caused the observed gains.

The improvement observed in this study can be interpreted through contemporary perspectives on vocabulary acquisition, particularly the view that vocabulary development involves semantic organization rather than simple memorization. Previous research emphasizes that vocabulary knowledge develops through the acquisition, organization, retention, retrieval, and contextual use of lexical items (Cheng, 2023; Coch et al., 2023; García-Gómez & Rueda-Sánchez, 2026). From this perspective, learners do not acquire vocabulary effectively by memorizing isolated definitions; instead, they need to establish meaningful relationships among words, concepts, and contexts. The findings of the present study support this theoretical assumption because Word Mapping requires students to organize vocabulary through definitions, synonyms, antonyms, examples, categories, and contextual meanings. Through this process, learners construct

interconnected lexical representations that may strengthen vocabulary retention and retrieval.

The effectiveness of Word Mapping observed in this study is also consistent with lexical network theory, which suggests that vocabulary knowledge is stored and accessed through interconnected semantic systems rather than independent word units. When learners connect new vocabulary with existing knowledge through semantic associations, retrieval becomes more efficient because words are embedded within meaningful networks (Coch et al., 2023; Norambuena et al., 2022). In the present study, students were not simply asked to memorize vocabulary items but were encouraged to identify relationships between words and concepts. The visual structure of Word Mapping likely supported deeper cognitive processing by enabling learners to see connections among lexical items. This interpretation is consistent with previous studies showing that semantic mapping and lexical organizers improve vocabulary learning by promoting conceptual relationships rather than disconnected word knowledge (García et al., 2020; Muñoz & Toala-Vera, 2023; Rivero-Contreras & Saldaña, 2021; Rodríguez, 2024).

The findings further confirm previous empirical evidence regarding the benefits of Word Mapping for vocabulary development. Jamaludin et al. (2024) reported that Word Mapping instruction significantly improved students' vocabulary mastery compared with conventional approaches. Similarly, Nizam et al. (2025) found that Word Maps enhanced vocabulary knowledge, classroom participation, and students' confidence in English learning. The current study aligns with these findings by demonstrating significant vocabulary improvement after Word Mapping implementation. However, the present research extends previous evidence by examining Word Mapping in a different educational context, namely a suburban Indonesian junior secondary school. While previous studies have frequently been conducted in urban or better-resourced environments, this study provides evidence regarding the feasibility of Word Mapping in a context characterized by limited English exposure and fewer instructional resources.

The suburban educational context represents an important contribution of this study because vocabulary challenges are often intensified when learners have limited opportunities to encounter English outside the classroom. In suburban Indonesian schools, students may experience restricted access to technology, limited authentic communication opportunities, and fewer English learning resources compared with urban contexts (Abdullah, 2024; Cheng, 2023). The present findings indicate that Word Mapping may provide a practical solution because it does not depend on advanced technology but instead utilizes visual organization and semantic relationships. This characteristic makes Word Mapping particularly suitable for classrooms where teachers require effective but accessible vocabulary instruction strategies.

Another important finding concerns the distribution of improvement among students with different initial vocabulary abilities. The increase in the minimum score from 44 to 68 and the maximum score from 64 to 88 suggests that the intervention benefited both lower- and higher-performing students. Additionally, the relatively stable standard deviation values before and after the intervention indicate that improvement occurred consistently across the class rather than being concentrated among only high-achieving students. This finding extends previous research by suggesting that visual-semantic approaches may provide equitable learning opportunities because they allow students with different proficiency levels to organize vocabulary according to their existing knowledge structures.

The findings also have important implications for vocabulary pedagogy. Traditional vocabulary instruction often emphasizes memorization of word lists, which may provide limited opportunities for learners to develop deeper lexical knowledge. The current study suggests that vocabulary teaching should incorporate strategies that

promote active engagement, semantic analysis, and meaningful connections among words. This interpretation supports Graves' (2016) argument that effective vocabulary instruction should encourage learners to construct relationships among words rather than memorize isolated meanings. Similarly, Nation (2021) emphasizes that vocabulary acquisition becomes stronger when learners repeatedly process words in meaningful contexts and connect new vocabulary with existing knowledge.

Nevertheless, the findings should be interpreted with consideration of methodological limitations. The use of a one-group pretest–posttest design limits the ability to establish causal relationships because changes may also be influenced by other factors, including testing familiarity, classroom experiences, or natural language development. Furthermore, the study involved only one class consisting of 31 students, which limits the generalizability of the findings to other EFL populations. Future research should employ stronger experimental designs, such as randomized controlled trials or quasi-experimental studies with comparison groups, to provide stronger evidence regarding the causal effectiveness of Word Mapping. Researchers should also investigate long-term vocabulary retention and examine productive vocabulary use through speaking and writing assessments.

This study contributes to vocabulary acquisition research by demonstrating that Word Mapping can support vocabulary development through semantic construction among suburban Indonesian EFL learners. Unlike previous studies that primarily evaluate vocabulary improvement as a numerical outcome, this research emphasizes vocabulary development as a process of organizing lexical knowledge. The findings extend existing knowledge by showing that a low-resource, visually based strategy can provide meaningful support for vocabulary learning in educational contexts where students face limited exposure to English.

CONCLUSION

This study concludes that the implementation of the Word Mapping strategy was associated with significant improvement in English vocabulary achievement among eighth-grade EFL students in a suburban Indonesian junior secondary school. Students demonstrated higher vocabulary performance after receiving Word Mapping instruction, with the mean score increasing from 55.35 in the pretest to 76.39 in the posttest. The statistical analysis confirmed a significant difference between students' vocabulary achievement before and after the intervention. These findings suggest that Word Mapping provides a promising instructional approach because it encourages learners to organize vocabulary through semantic relationships, including definitions, synonyms, antonyms, examples, categories, and contextual meanings. Such organization enables students to construct richer lexical representations that may support vocabulary retention and retrieval.

The study contributes to EFL vocabulary research by providing evidence from an underrepresented educational context: suburban Indonesian junior secondary classrooms. The findings extend previous studies by demonstrating that Word Mapping is not only relevant in resource-rich settings but can also be implemented effectively in classrooms with limited technological support. However, the findings should be interpreted cautiously because the one-group pretest–posttest design does not allow definitive causal conclusions. Future studies should employ comparison groups, larger samples, delayed posttests, and broader measures of vocabulary knowledge to examine the long-term effectiveness of Word Mapping.

ACKNOWLEDGMENT

The authors would like to express their sincere appreciation to all individuals and institutions who contributed to the successful completion of this study. Special gratitude

is extended to the Institute for Research and Community Service (LPPM), Universitas Pendidikan Mandalika, for providing administrative and logistical support throughout the research process. The authors also sincerely thank the principal, English teacher, and eighth-grade students of SMPN 3 Gunungsari, West Lombok, for their valuable cooperation and participation. Appreciation is also extended to colleagues and research collaborators who provided constructive feedback and assistance during data collection, analysis, and manuscript preparation.

Declaration of Using AI Tools

During the preparation of this manuscript, the authors used artificial intelligence (AI) tools to support language refinement, academic writing improvement, and manuscript organization. The AI tools were utilized only as writing assistance instruments and did not contribute to the research design, participant recruitment, data collection, statistical analysis, interpretation of findings, or scientific conclusions. All AI-generated suggestions were carefully reviewed, verified, and revised by the authors to ensure accuracy, originality, and consistency with the research objectives. The authors take full responsibility for the content, integrity, and final version of the manuscript.

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