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Improving Seventh-Grade Students' Word Recognition through Vocabulary Matching Activities

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Abstract

Vocabulary plays a fundamental role in English language learning, yet many junior high school students in Indonesia still face difficulties in recognizing English words due to limited vocabulary knowledge and conventional teaching methods. This study aimed to examine the effectiveness of Vocabulary Matching Activities in improving word recognition skills of Grade 7 students at SMP Negeri 13 Palu. Vocabulary Matching Activities were chosen because they combine visual and verbal associations and encourage more active learning compared to memorization-based techniques, while the study specifically focused on word recognition as an essential but often overlooked aspect of vocabulary development. A pre-experimental one-group pre-test and post-test design was used with 28 students selected through purposive sampling. The results showed an improvement in mean scores from 60.95 to 71.85, with a significant difference ($t(27) = 6.87$, $p < .001$) and a large effect size (Cohen's $d = 1.30$). These findings suggest that Vocabulary Matching Activities are effective in enhancing vocabulary recognition and can be applied by English teachers in junior high schools to support more engaging vocabulary learning and strengthen students' reading development.

1. Introduction

Vocabulary is widely recognized as one of the most essential components of English language learning because it forms the basis for understanding and producing language. Without an adequate vocabulary, learners often struggle to comprehend spoken and written texts, express ideas accurately, and participate effectively in communication. Although grammar provides the structure of a language, vocabulary supplies the meanings that enable communication to take place. For learners of English as a Foreign Language

(EFL), vocabulary knowledge is therefore indispensable for developing proficiency across the four language skills—listening, speaking, reading, and writing.

Nation (2001) explains that knowing a word involves more than simply remembering its meaning. Vocabulary knowledge consists of three interconnected dimensions: form, meaning, and use. Learners need to recognize the written and spoken forms of words, understand their meanings in different contexts, and know how to use them appropriately in communication. These dimensions work together during language learning, particularly when students encounter unfamiliar vocabulary while reading or listening. As learners repeatedly connect word forms with meanings and contextual use, vocabulary knowledge gradually becomes more stable and easier to retrieve. Consequently, effective vocabulary instruction should provide opportunities for learners to develop these three dimensions simultaneously rather than relying solely on memorization.

Among these dimensions, word recognition plays a particularly important role during the early stages of vocabulary acquisition. Before learners can understand or use new vocabulary, they must first be able to identify written or spoken words accurately and connect them with their meanings. Efficient word recognition enables learners to process language more fluently, reduces cognitive load during reading, and supports overall comprehension. Students who experience difficulties in recognizing words often read more slowly, misunderstand texts, and encounter challenges in acquiring additional vocabulary. Therefore, strengthening word recognition skills represents an important step toward improving broader English language proficiency.

The process of recognizing vocabulary can also be explained through Dual Coding Theory proposed by Clark and Paivio (1991). This theory suggests that information is learned more effectively when it is processed through both verbal and non-verbal systems. In vocabulary learning, students achieve stronger memory retention when written or spoken words are associated with meaningful visual representations, such as pictures, symbols, or real objects. The integration of verbal and visual information creates multiple memory pathways, making vocabulary easier to recognize and recall. Consequently, instructional strategies that combine words with visual support are expected to facilitate vocabulary acquisition more effectively than approaches relying solely on verbal explanation or rote memorization.

Another theoretical perspective supporting interactive vocabulary instruction is Depth of Processing Theory proposed by Craik and Lockhart (1972). This theory argues that information processed at a deeper semantic level is retained more effectively than information learned through surface-level memorization. Rather than simply repeating isolated words, learners who analyze meanings, compare alternatives, establish relationships among words, and actively solve learning tasks develop stronger and more durable memory traces. Vocabulary Matching Activities naturally promote this deeper processing because students must repeatedly examine word forms, identify appropriate meanings or visual representations, and justify their choices through discussion with peers. Consequently, the learning process extends beyond rote memorization and encourages meaningful vocabulary acquisition that supports long-term retention and recognition.

Despite the recognized importance of vocabulary learning, many Indonesian EFL students continue to experience difficulties in developing adequate vocabulary knowledge. Since English functions as a foreign language, opportunities to encounter and use English outside the classroom remain relatively limited. As a result, classroom instruction becomes the primary source of vocabulary exposure for many learners. Nevertheless, vocabulary teaching in Indonesian junior high schools frequently emphasizes memorizing word lists, translating isolated vocabulary items, and completing textbook exercises. Although these activities may help students remember vocabulary temporarily, they often provide limited opportunities for meaningful interaction with words or repeated exposure in different

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contexts. Consequently, many students find it difficult to recognize previously learned vocabulary when reading texts or participating in classroom activities.

Previous Studies, Research Gap, and Research Objective

A growing body of research has demonstrated that interactive vocabulary-learning activities can improve learners' vocabulary achievement more effectively than conventional teacher-centered instruction. Rather than requiring students to memorize isolated word lists, these activities encourage learners to actively engage with vocabulary through problem-solving, collaboration, and repeated exposure to meaningful language. Such learning experiences are believed to strengthen vocabulary retention while increasing students' motivation and participation during English lessons.

Previous studies have consistently demonstrated the effectiveness of interactive vocabulary instruction in EFL classrooms. Indonesian studies reported that matching-based activities improve vocabulary mastery, learner motivation, classroom participation, and collaborative learning environments (Destika, 2022; Arief et al., 2023; Saputri et al., 2024; Marpaung et al., 2024; Sardianti et al., 2025). Similarly, recent international research has shown that game-based learning, picture-assisted instruction, and collaborative vocabulary tasks facilitate vocabulary retention, lexical recognition, and reading comprehension by engaging learners in active and meaningful learning experiences.

Although these studies consistently report positive learning outcomes, most primarily evaluate overall vocabulary mastery as the final learning outcome. Relatively little attention has been given to word recognition, which represents the initial cognitive process through which learners identify written vocabulary and rapidly connect word forms with their meanings before comprehension can occur. Furthermore, previous studies generally describe instructional effectiveness without sufficiently explaining the cognitive mechanisms underlying students' improvement through established learning theories. Consequently, the interaction among visual-verbal processing, meaningful cognitive engagement, and vocabulary recognition remains insufficiently explored.

Despite previous studies provide convincing evidence regarding the effectiveness of matching activities for improving vocabulary mastery, most of them primarily evaluate students' overall vocabulary achievement. Relatively few studies specifically investigate word recognition, which represents one of the earliest and most fundamental stages of vocabulary acquisition. Moreover, previous research generally emphasizes learning outcomes without providing sufficient theoretical explanation of how matching activities facilitate vocabulary learning through the interaction between verbal and visual processing, repeated form-meaning connections, and active learner engagement.

Another limitation of previous research is the limited attention given to learners at the beginning of secondary education. Grade 7 students experience a critical transition from elementary to junior high school, where English instruction becomes more systematic and vocabulary demands increase substantially. At this stage, students are expected to recognize a wider range of English words while simultaneously developing reading skills that support comprehension across different text types. However, many learners still possess limited vocabulary knowledge and often struggle to recognize unfamiliar words automatically. Early intervention during this transitional period is therefore particularly important because successful word recognition forms the foundation for later vocabulary growth, reading comprehension, and overall English language proficiency.

The present study extends previous research in several important ways. First, rather than examining general vocabulary mastery, this study specifically investigates word recognition, which constitutes the earliest stage of vocabulary acquisition and serves as an essential prerequisite for fluent reading. Second, the study integrates Nation's Vocabulary

Knowledge Framework, Dual Coding Theory, and Depth of Processing Theory to provide a more comprehensive theoretical explanation of how Vocabulary Matching Activities facilitate vocabulary learning through repeated form–meaning connections, visual-verbal associations, and meaningful cognitive processing. Third, the study focuses specifically on Grade 7 Indonesian EFL learners, a population that has received relatively limited attention despite being at a critical stage of vocabulary development. Finally, by reporting both statistical significance and effect size, this research provides stronger empirical evidence regarding the educational effectiveness of Vocabulary Matching Activities.

Based on these considerations, this study aims to investigate the effectiveness of Vocabulary Matching Activities in improving Grade 7 students' ability to recognize English vocabulary. Specifically, the study seeks to determine whether the implementation of Vocabulary Matching Activities leads to statistically significant improvement in students' vocabulary recognition performance and to explain this improvement through established theories of vocabulary learning.

The findings are expected to contribute theoretically by expanding current understanding of the cognitive processes underlying vocabulary recognition and practically by providing junior high school English teachers with an interactive instructional strategy that can be implemented to strengthen vocabulary learning and support students' reading development.

Figure 1. Conceptual Framework

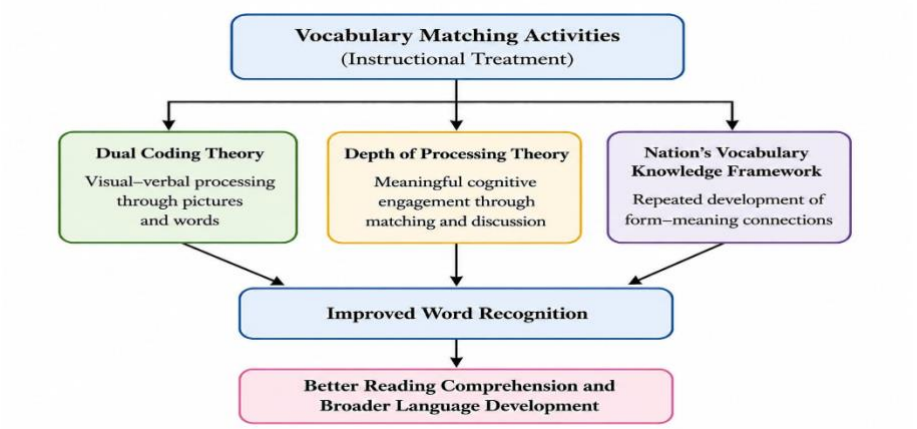

Figure 1 presents the conceptual framework of the study. Vocabulary Matching Activities enhance students' word recognition through visual-verbal processing (Dual Coding Theory), meaningful cognitive engagement (Depth of Processing Theory), and repeated form–meaning connections (Nation's Vocabulary Knowledge Framework), thereby supporting reading comprehension and language development.

2. Method

Research Design

This study employed a quantitative approach using a pre-experimental method with a one-group pre-test and post-test design. This design was selected to examine the effectiveness of Vocabulary Matching Activities in improving students' word recognition skills by comparing their achievement before and after the instructional treatment. Students completed a pre-test before the treatment and a post-test after the intervention. The difference between the two test scores was used to determine the effectiveness of the instructional strategy.

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Although this design does not include a control group, it is appropriate for evaluating preliminary classroom interventions. However, the absence of a control group may limit the ability to attribute students' improvement solely to the treatment. Therefore, the findings should be interpreted within the context of this study.

Research Setting and Participants

The study was conducted at SMP Negeri 13 Palu during the 2025/2026 academic year. The participants were 28 seventh-grade students from Class 7B, selected through purposive sampling.

Purposive sampling was employed because Class 7B met the objectives of the study. Based on observations and discussions with the English teacher, students in this class experienced difficulties in recognizing English vocabulary and often relied on memorization rather than understanding word meanings. In addition, the class represented students with varying levels of English proficiency, making it suitable for examining the effectiveness of Vocabulary Matching Activities.

Grade 7 students were selected because they are in the early stage of secondary education, where vocabulary development plays an essential role in supporting subsequent language learning. Developing word recognition skills at this level is expected to facilitate students' vocabulary acquisition and reading comprehension in later stages of learning.

The independent variable of this study was Vocabulary Matching Activities, while the dependent variable was students' word recognition skills.

Research Instrument

The instrument used in this study was a vocabulary recognition test administered as both the pre-test and the post-test. The test was designed to measure students' ability to recognize English vocabulary through objective item formats aligned with the Grade 7 English curriculum.

The test consisted of 30 objective items distributed across three vocabulary recognition tasks: 10 multiple-choice items, 10 word-to-picture matching items, and 10 word-to-meaning matching items. The multiple-choice section measured students' ability to identify the correct meaning of target vocabulary in simple contexts. The word-to-picture matching task assessed learners' ability to associate written vocabulary with appropriate visual representations, while the word-to-meaning matching task evaluated students' ability to connect English words with their corresponding definitions. These item types were selected because they represent different aspects of receptive vocabulary knowledge while focusing specifically on word recognition. curriculum.

The vocabulary items were selected from themes included in the Grade 7 English curriculum, including classroom objects, daily activities, animals, food and beverages, occupations, and descriptive adjectives. Each correct answer received one point, while incorrect answers received zero points. Students' scores were converted into percentages using the following formula:

$$\text{Score} = (\text{Number of Correct Answers} / 30) \times 100$$

Prior to administration, the instrument underwent content validation through expert judgment conducted by the research supervisor and an experienced English teacher to ensure alignment with the research objectives, students' proficiency level, and curriculum requirements. The experts evaluated the relevance, clarity, and appropriateness of each item. Although the instrument demonstrated satisfactory content validity according to expert evaluation, statistical validity and reliability analyses were not conducted because

the instrument was specifically developed for this classroom-based study. This limitation is acknowledged and discussed in the final section of the paper.

Distribution of Vocabulary Recognition Test Items

Vocabulary Task	Number of Items	Vocabulary Focus
Multiple Choice	10	Recognition of nouns and verbs in contextualized sentences
Fill in the Blank	10	Contextual use of nouns and verbs
Determine Noun and Verb	10	Recognition of word classes (nouns and verbs)
Total	**30**	

Research Procedures

The study was conducted over eight meetings, consisting of one meeting for the pre-test, six meetings for the instructional treatment, and one meeting for the post-test.

During the first meeting, students completed the pre-test to assess their initial vocabulary recognition skills.

The second to seventh meetings were devoted to implementing Vocabulary Matching Activities. Students worked both individually and collaboratively in heterogeneous groups of four students. Group composition remained consistent throughout the intervention to encourage effective collaboration, peer support, and active participation.

Each instructional session began with the teacher introducing the target vocabulary using pictures, flashcards, or contextual examples. Students then completed matching activities requiring them to connect English words with corresponding pictures or meanings. After completing the matching tasks, students discussed their answers within their groups, justified their choices, and received corrective feedback from both peers and the teacher. Finally, the teacher reviewed the correct answers and reinforced the target vocabulary through repetition and short classroom discussions.

These repeated learning cycles enabled students to strengthen form–meaning connections while engaging in meaningful cognitive processing and collaborative learning.

During the eighth meeting, students completed the post-test to evaluate changes in vocabulary recognition following the instructional treatment.

Implementation of Vocabulary Matching Activities

Meeting	Topic	Learning Objectives	Classroom Activities
1	Pre-test	Assess students' initial vocabulary recognition ability.	Students completed the pre-test individually.
2	Classroom Objects	Recognize vocabulary related to classroom objects.	Students matched classroom object words with corresponding pictures.
3	Daily Activities	Recognize verbs used in daily activities.	Students matched action verbs with pictures and simple sentences.
4	School Activities	Recognize vocabulary related to school activities.	Students matched words with their meanings in contextual sentences.

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5	Home Activities	Recognize vocabulary related to home routines.	Students completed vocabulary matching activities in groups.
6	Vocabulary Review	Reinforce previously learned vocabulary.	Students completed mixed matching exercises.
7	Integrated Practice	Consolidate vocabulary recognition skills.	Students reviewed all target vocabulary through collaborative matching games.
8	Post-test	Measure students' vocabulary recognition after the intervention.	Students completed the post-test individually.

Data Analysis

The collected data were analyzed using IBM SPSS Statistics. Descriptive statistics, including the mean, median, standard deviation, minimum score, and maximum score, were calculated to summarize students' performance in the pre-test and post-test.

Prior to hypothesis testing, the normality of the data distribution was examined using the Shapiro–Wilk test. Since the data met the assumption of normality, a paired-sample t-test was conducted to determine whether there was a statistically significant difference between students' pre-test and post-test scores. Statistical significance was determined at the 0.05 level.

To determine the practical significance of the treatment, Cohen's d was also calculated to measure the magnitude of the effect of Vocabulary Matching Activities on students' word recognition skills. In addition, the 95% confidence interval of the mean difference was calculated to provide additional statistical information regarding the magnitude and precision of the observed improvement.

Threats to Internal Validity

Because this study employed a one-group pre-test and post-test design without a control group, several threats to internal validity should be considered. Improvements in students' performance may have been influenced not only by the instructional treatment but also by maturation, testing effects, or other classroom learning experiences occurring during the intervention period. To minimize these threats, the intervention was implemented within a relatively short instructional period, identical test formats were used for the pre-test and post-test, and all instructional sessions were conducted by the same teacher using consistent learning procedures. Nevertheless, causal conclusions should be interpreted cautiously, and future studies employing experimental or quasi-experimental designs with control groups are recommended.

Ethical Considerations

Permission to conduct the study was obtained from the principal of SMP Negeri 13 Palu and the English teacher before the research began. Students participated in the study as part of their regular classroom learning activities, and all collected data were used solely for research purposes. To maintain confidentiality, students' identities were not disclosed in the reporting of the findings.

3. Result

This section presents the findings of the statistical analyses conducted to examine the effectiveness of Vocabulary Matching Activities in improving Grade 7 students' vocabulary recognition performance. The results are presented sequentially, beginning with descriptive statistics, followed by score distribution, paired-sample analysis, confidence interval estimation, and effect size. The findings are reported objectively, while their theoretical interpretation is reserved for the discussion section.

Table 1. Descriptive Statistics

Variable	N	Mean	Median	Std. Deviation	Minimum	Maximum
Pre-Test	28	60.95	66.67	20.65	20.00	95.00
Post-Test	28	71.85	75.84	20.18	30.00	98.33

Table 1 shows that the students' mean score increased from 60.95 on the pre-test to 71.85 on the post-test, indicating an average improvement of 10.90 points. The median score also increased from 66.67 to 75.84. Furthermore, the minimum score improved from 20.00 to 30.00, while the maximum score increased from 95.00 to 98.33.

Table 2. Distribution of Students' Achievement Levels

Achievement Category	Score Range	Pre-test (n)	Post-test (n)
Excellent	86-100	3	8
Good	71-85	6	10
Fair	56-70	10	7
Poor	55	9	3

Table 2 indicates a noticeable shift in students' achievement levels following the intervention. The number of students classified as Excellent increased from three to eight, while those in the Poor category decreased from nine to three. These descriptive results suggest that improvement occurred across different levels of achievement rather than being limited to high-performing students.

Table 3. Quartile Distribution

Statistic	Pre-test	Post-test
Q1	45.00	60.00
Median	66.67	75.84
Q3	78.33	88.33

The quartile distribution demonstrates that improvements occurred across the entire score distribution. The increase in the first quartile indicates that lower-achieving students also benefited from the instructional treatment, while the higher third quartile reflects improvement among students with stronger initial vocabulary knowledge.

Individual score comparisons revealed that most students demonstrated improvement between the pre-test and post-test. Twenty-four students obtained higher post-test scores, while four students showed only slight improvement. No participant experienced a decline in performance after the intervention. These findings indicate that the instructional strategy benefited learners with different levels of initial vocabulary knowledge, although the magnitude of improvement varied across individuals.

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Table 4. Examples of Students' Improvement

Student	Pre-test	Post-test	Improvement
S1	40.00	63.33	+23.33
S2	66.67	83.33	+16.66
S3	73.33	93.33	+20.00

As illustrated in Table 4, students from different initial achievement levels demonstrated measurable improvement after participating in the Vocabulary Matching Activities. Both lower- and higher-achieving students showed gains in vocabulary recognition performance, although the magnitude of improvement varied among individuals.

Table 5. Paired Sample Statistics

Variable	Mean	N	Std. Deviation	Std. Error Mean
Pre-test	60.95	28	20.65	3.90
Post-test	71.85	28	20.18	3.81

Table 2 shows that students achieved a higher average score on the post-test than on the pre-test, suggesting an improvement in word recognition performance following the implementation of Vocabulary Matching Activities.

Table 6. Paired Sample Test

Pair	Mean Difference	95% Confidence Interval	t-value	df	Sig. (2-tailed)
Pre-test – Post-test	-10.89	-14.16 to -7.63	-6.87	27	< 0.001

As presented in Table 3, the paired-sample t-test revealed a statistically significant difference between students' pre-test and post-test scores, $t(27) = 6.87$, $p < .001$. The 95% confidence interval indicates that the true mean improvement was estimated to range between 7.63 and 14.16 points. Because the confidence interval does not include zero, the result further supports the conclusion that students performed significantly better after the intervention. These results indicate that students performed significantly better after participating in the Vocabulary Matching Activities.

Table 7. Effect Size

Effect Size	Interpretation
Cohen's d = 1.30	Large Effect

The calculated effect size (Cohen's d = 1.30) indicates a large magnitude of improvement according to Cohen's (1988) interpretation. This result demonstrates that the observed gain was not only statistically significant but also educationally meaningful.

Summary of Results

Overall, the descriptive and inferential analyses consistently indicate improvement in students' vocabulary recognition performance following the implementation of Vocabulary Matching Activities. Higher post-test mean scores, shifts in achievement categories, improvements across quartiles, significant paired-sample t-test results, a confidence interval excluding zero, and a large effect size collectively demonstrate positive changes in students' performance. Interpretation of these findings is presented in the following discussion section.

Figure 2. Comparison of Mean Pre-test and Post-test Scores

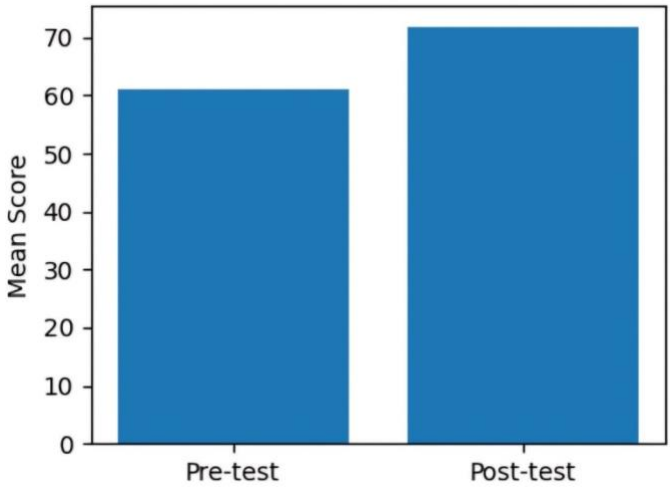

Figure 2 illustrates the increase in students' mean vocabulary recognition scores following the implementation of Vocabulary Matching Activities. The visual representation complements the statistical results reported in the previous tables.

4. Discussion

The findings of this study demonstrate that Vocabulary Matching Activities significantly improved the word recognition skills of Grade 7 students at SMP Negeri 13 Palu. Students' mean score increased from 60.95 in the pre-test to 71.85 in the post-test, and the paired-sample t-test confirmed that the improvement was statistically significant. Moreover, the large effect size (Cohen's d = 1.30) indicates that the instructional strategy produced not only statistical significance but also substantial educational value. These findings suggest that Vocabulary Matching Activities can effectively support vocabulary learning by helping students recognize English words more accurately and confidently.

An important finding of this study is the large effect size (Cohen's d = 1.30), indicating that the improvement was not only statistically significant but also educationally meaningful. Compared with many vocabulary intervention studies that report small-to-moderate effects, the present intervention produced a stronger impact on students' vocabulary recognition. One possible explanation is that Vocabulary Matching Activities integrate several complementary learning processes simultaneously. Students repeatedly connected written words with meanings and visual representations, actively discussed their answers with peers, and received immediate corrective feedback from the teacher. This combination of repetition, multimodal learning, and collaborative interaction likely reinforced memory formation more effectively than instructional approaches relying primarily on memorization or translation.

The improvement observed in this study can first be explained through Nation's Vocabulary Knowledge Framework (2001). Nation argues that vocabulary knowledge involves the integration of word form, meaning, and use, rather than the simple memorization of isolated words. During the implementation of Vocabulary Matching Activities, students repeatedly associated written English words with their corresponding meanings and visual representations. This repeated form–meaning connection enabled learners to recognize vocabulary more quickly while gradually strengthening their understanding of the target words. Rather than memorizing vocabulary mechanically, students actively constructed relationships between written forms and meanings through repeated classroom practice, thereby supporting the development of their receptive vocabulary knowledge.

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The findings are also consistent with Dual Coding Theory proposed by Clark and Paivio (1991), which explains that learning becomes more effective when information is processed through both verbal and visual systems. In the present study, vocabulary items were introduced not only as written words but also through pictures and matching activities. These visual-verbal associations likely reduced students' cognitive load and created multiple retrieval pathways, making vocabulary easier to recognize during the post-test. This theoretical explanation helps clarify why students demonstrated considerable improvement after participating in the treatment sessions.

In addition, the findings may also be interpreted through the perspective of Depth of Processing Theory, which suggests that information processed more meaningfully is retained more effectively than information learned through surface memorization. Vocabulary Matching Activities required students to analyze vocabulary, compare alternatives, identify correct associations, and discuss their answers with classmates. Such cognitive engagement encouraged deeper processing of lexical information, allowing vocabulary to be retained more effectively than through rote memorization alone.

The collaborative nature of Vocabulary Matching Activities may have further contributed to students' learning. Throughout the instructional sessions, students worked individually as well as in small groups to complete matching tasks, exchange ideas, and receive immediate feedback from both peers and the teacher. These interactions provided opportunities for students to clarify misunderstandings, reinforce newly learned vocabulary, and develop greater confidence in recognizing English words. Cooperative learning environments such as these encourage active participation and reduce students' anxiety when learning unfamiliar vocabulary, particularly among beginning EFL learners.

The findings of this study are consistent with both national and international research emphasizing the effectiveness of interactive vocabulary instruction. Indonesian studies have consistently demonstrated that matching techniques improve vocabulary mastery, classroom participation, and learner motivation. Likewise, recent international studies on game-based learning, picture-supported instruction, and collaborative vocabulary learning have shown that active engagement with lexical items facilitates vocabulary retention, automatic word recognition, and reading comprehension among EFL learners.

However, unlike many previous studies that primarily evaluated overall vocabulary mastery, the present study specifically investigated word recognition, thereby providing empirical evidence regarding one of the earliest cognitive processes underlying vocabulary acquisition. Furthermore, by integrating Nation's Vocabulary Knowledge Framework, Dual Coding Theory, and Depth of Processing Theory, this study offers a more comprehensive theoretical explanation of why Vocabulary Matching Activities effectively support vocabulary learning.

Beyond improving vocabulary recognition, the findings also have implications for reading comprehension. Efficient word recognition enables learners to identify familiar vocabulary more rapidly, thereby reducing cognitive effort during reading and allowing greater attention to meaning construction. Students who recognize words automatically are better able to comprehend sentences, infer meanings from context, and process texts more fluently. Therefore, strengthening vocabulary recognition through Vocabulary Matching Activities may indirectly contribute to improved reading comprehension and broader language development, particularly for beginning EFL learners.

Individual Differences in Students' Improvement

Although the overall findings indicate substantial improvement, the magnitude of students' progress varied across individuals. Several factors may explain these differences. First, learners entered the study with different levels of prior English vocabulary

knowledge. Students possessing larger vocabularies were generally able to establish new form–meaning connections more rapidly than those with limited lexical knowledge. Second, differences in learning motivation likely influenced students' engagement during classroom activities. Learners who actively participated in discussions, completed matching tasks enthusiastically, and sought clarification from peers tended to demonstrate greater improvement than those who participated less actively.

In addition, students' learning preferences may also have contributed to the observed variation. Vocabulary Matching Activities integrate visual materials, written words, collaborative interaction, and repeated practice, which may particularly benefit learners who prefer active and visually supported learning environments. Differences in prior English proficiency may likewise influence students' ability to recognize unfamiliar vocabulary efficiently. These findings suggest that teachers should provide additional guidance and differentiated support for learners requiring more intensive vocabulary practice.

Practical Implications

The findings of this study have several implications for English language teaching, particularly at the junior high school level. Vocabulary Matching Activities provide teachers with an interactive alternative to conventional vocabulary instruction, which often relies on memorization and translation exercises. By encouraging students to connect words with meanings and visual representations, the activities promote active participation while helping learners establish stronger associations between word forms and meanings.

For classroom implementation, teachers may adapt Vocabulary Matching Activities to suit different instructional contexts. In small classes, matching tasks can be conducted through pair work, cooperative group activities, or classroom competitions. In larger classes, teachers may rotate learning stations or assign collaborative matching tasks to encourage participation from all students. To maintain students' motivation, vocabulary themes should be selected according to curriculum objectives and learners' interests, while task difficulty should gradually increase as students become more familiar with vocabulary recognition activities.

The strategy is also flexible and can be adapted to different classroom contexts. In face-to-face instruction, teachers may use printed vocabulary cards, picture cards, or classroom games to facilitate collaborative learning. In technology-supported learning environments, similar activities can be implemented through digital platforms such as interactive quizzes, online matching games, or educational applications that allow students to practice vocabulary independently or collaboratively. Integrating digital resources with Vocabulary Matching Activities may increase students' engagement while providing additional opportunities for repeated vocabulary practice outside the classroom.

Digital learning environments also provide opportunities to extend Vocabulary Matching Activities beyond the classroom. Platforms such as Wordwall, LearningApps, Quizizz, and Kahoot! enable teachers to design interactive matching exercises that provide immediate feedback and repeated vocabulary practice. Such technology-enhanced activities may increase students' motivation, encourage independent learning, and facilitate continuous vocabulary review outside regular classroom instruction. Future studies may therefore investigate whether integrating digital platforms with Vocabulary Matching Activities produces greater vocabulary gains than traditional paper-based instruction.

Furthermore, because word recognition serves as a foundation for reading comprehension, strengthening this skill may also support students' broader language development. Students who recognize vocabulary more accurately are likely to read more fluently, understand texts more effectively, and participate with greater confidence in subsequent English learning activities.

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Limitations of the Study

Despite producing encouraging findings, this study has several limitations that should be considered when interpreting the results. First, the research employed a pre-experimental one-group pre-test and post-test design without a control group. Consequently, the observed improvement cannot be attributed exclusively to the instructional treatment, as other factors such as students' natural learning progress or familiarity with the testing procedure may also have influenced the results.

Second, the study involved only 28 students from a single Grade 7 class at one junior high school. Therefore, the findings should be interpreted cautiously and should not be generalized to other educational contexts without additional empirical evidence.

Third, the research focused exclusively on students' word recognition skills. Other aspects of vocabulary knowledge, including productive vocabulary use, pronunciation, spelling, and contextual word use, were beyond the scope of the present study.

Finally, the vocabulary recognition test was developed based on the instructional objectives and underwent expert review by the research supervisor and the English teacher. However, the instrument was not subjected to statistical validity and reliability testing. Future studies are therefore encouraged to evaluate the psychometric properties of the instrument to further strengthen the accuracy and consistency of vocabulary assessment.

Recommendations for Future Research

Future research is recommended to employ experimental or quasi-experimental designs involving control groups in order to provide stronger evidence regarding the effectiveness of Vocabulary Matching Activities. Studies involving larger and more diverse samples from different schools and educational levels would also improve the generalizability of the findings.

In addition, future researchers may investigate the effectiveness of Vocabulary Matching Activities in developing other dimensions of vocabulary knowledge, such as vocabulary retention, productive vocabulary use, reading comprehension, or speaking performance. Exploring the integration of digital learning platforms and educational technologies into vocabulary matching activities may also provide valuable insights into vocabulary instruction in increasingly technology-enhanced learning environments.

Future research is also encouraged to conduct longitudinal studies examining the long-term retention of vocabulary acquired through Vocabulary Matching Activities. While the present study demonstrates immediate improvement in students' vocabulary recognition, further investigation is needed to determine whether these gains are maintained several weeks or months after the instructional intervention. Longitudinal evidence would provide a more comprehensive understanding of the durability of vocabulary learning achieved through interactive matching activities.

Overall, the findings indicate that Vocabulary Matching Activities promote vocabulary learning through the integration of visual-verbal associations, meaningful cognitive processing, repeated form–meaning connections, and collaborative classroom interaction. These complementary learning processes facilitate students' ability to recognize English vocabulary more efficiently, which in turn supports reading development and broader English language learning. Consequently, Vocabulary Matching Activities represent a practical, theoretically grounded, and pedagogically valuable instructional strategy for junior high school EFL classrooms.

5. Conclusion

This study investigated the effectiveness of Vocabulary Matching Activities in improving the word recognition skills of Grade 7 students at SMP Negeri 13 Palu. The findings demonstrated a statistically significant improvement in students' performance after the implementation of the instructional strategy. Students' mean score increased from 60.95 in the pre-test to 71.85 in the post-test, and the paired-sample t-test confirmed that the improvement was statistically significant ($t(27) = 6.87$, $p < .001$). Furthermore, the large effect size (Cohen's $d = 1.30$) indicates that Vocabulary Matching Activities had a substantial practical impact on students' word recognition skills. These findings suggest that integrating vocabulary with visual representations and collaborative matching tasks provides meaningful learning experiences that facilitate vocabulary recognition among junior high school EFL learners.

Despite these encouraging findings, this study has several limitations. The research employed a pre-experimental one-group pre-test and post-test design without a control group and involved a relatively small sample from a single school, limiting the generalizability of the findings. In addition, the research focused only on word recognition and used an instrument that was reviewed through expert judgment without statistical validation or reliability testing. Therefore, future studies are recommended to employ experimental or quasi-experimental designs with larger and more diverse samples, examine additional dimensions of vocabulary knowledge, validate the research instrument using appropriate psychometric procedures, and explore the integration of Vocabulary Matching Activities with digital learning platforms to further enhance vocabulary instruction in EFL classrooms.

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