

Riddle Game in Elevating EFL Vocabulary Mastery

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Abstract

Gaming in the language instructional process has been intensively implemented by academia all over the world and most of them claim that it is successful to bridge an English as Foreign Language (EFL) learner in mastering language skill and components. This study aims to expose how the implementation of riddle games elevating the vocabulary development of eighth grade students at junior high school (*Sekolah Menengah Pertama/SMP Negeri 6 Palu*). A quasi-experimental method was employed, consisting of experimental class that engaged in riddle game strategy meanwhile the control class received lecture method. 10 items of multiple choice, 5 items of jumbled words, and 10 items of matching vocabulary were used as the instrument to measure the student's knowledge before and after getting intervention. The sample of 50 students in this research was randomly selected from the total population of 268 eighth grade students. Due to the non-normal distribution of the data, the Mann-Whitney U test was employed for statistical analysis. The finding demonstrates an improvement in the mean score of both groups; the experimental group improved from 41.56 to 55.16, while the control group increased from 44.88 to 49.24. However, the Mann-Whitney U ranks test showed a non-significant difference between the two classes ($p > 0.05$). Thus, it can be concluded that the Riddle game is inefficient to expand students' vocabulary mastery.

Keywords: teaching, vocabulary mastery, riddle game

INTRODUCTION

Vocabulary plays a crucial role in learning the English language and serves as the foundation for effective communication. It enables language learners to express and comprehend ideas in both spoken and written forms within appropriate contexts. Without sufficient vocabulary, students may struggle to convey their thoughts, understand messages, and participate in meaningful conversations. This issue is evident in Indonesia, where several students still point out their struggle in learning English especially mastering the English vocabulary. They tend to be effortful to accurately pronounce the word, to contextually comprehend the meaning and to apply vocabulary effectively. Similarly, this happened to the students of SMP Negeri 6 Palu. In contrast, the emancipated curriculum demands that students are expected to use and communicate spoken, written, and visual texts in English in both formal and informal situations, express their feelings and create structured text with diverse vocabulary. According to Pratiwi et al. (2021), limited vocabulary restricts students' ability to articulate and comprehend ideas. Supporting this view, Mawar & Anggreni, (2025) argue that a broad vocabulary supports learners in developing effective communication skills. Furthermore, Fadhila, (2022) emphasize vocabulary supports learners in acquiring the four essential language skills; listening, speaking, reading, and writing. Thus, Students with a strong vocabulary base are more likely to understand what they hear, read, and write (Silviani et al., 2023).

Since vocabulary mastery become the fundamental requirement for the students in mastering English, it is essential to support students in acquiring English vocabulary as a foreign language alongside their native language (Damayanti et al., 2023). Vocabulary mastery involves not only knowing the meaning of the words but also applying them effectively in different contexts. This includes understanding words meanings, recognizing their grammatical functions, being able to select suitable vocabulary based on the situation or the purpose of communication. This perspective is supported by Rahmawati et al. (2022), who emphasize that vocabulary mastery is a key element in English language acquisition. The students required not only acquire a large number of words but also retain and apply them meaningfully to achieve communicative competence. Likewise, Sinaga et al. (2022) claim that a vocabulary mastery has become one of the foundational element for non-native speakers who desire to mastering English. The more vocabulary learners acquire, the better they perform in the language. Similarly, this statement is echoed by Megi et al. (2023) and Silviani et al. (2023) who highlight that Vocabulary mastery significantly enhances a students' ability to comprehend and generate ideas. A broader vocabulary not only facilitates clearer expression in the target language but also serves as a gateway to mastering other linguistic competencies. Therefore, vocabulary acquisition represents a fundamental step toward achieving communicative fluency, especially in the context of learning Basic English. Without sufficient vocabulary, efforts to master the language as a whole are likely to be ineffective.

Additionally, Yuliarsih, (2022) outlines three primary aspects; they were form, meaning, word usage. The teachers should emphasize several elements of vocabulary proficiency, including 1) form (Pronunciation and spelling), 2) grammar, 3) collocation, 4) aspects of meaning (such as literal meaning, implied meaning, appropriateness and relationship between words) and 5) word formation. In relation to the explanation above, various approaches can be implemented to develop students' vocabulary. One of them is by using appropriate teaching strategies. Therefore, the researchers are

interested in providing a solution, namely riddle game. This study aims to examine the effectiveness of riddle game in elevating EFL learners' vocabulary Mastery.

Recorded riddle was firstly introduced in the Rhind Mathematical Papyrus, written by the scribe Ahmes in the year 1650 B.C. The riddle is assumed to have been used in an educational context; specifically in a mathematical context. Riddle game refers to guessing games that allow the students to engage in critical and creative thinking as they work in solving the problems or uncover hidden meanings based on a set of clues. This game typically involves a question or statement that requires students to use logic in order to answer the clue given. According to Octaviarnis, (2020) Riddle games demand cleverness and critical thinking to find the solutions. Moreover, riddles spark enthusiasm for language and encourage students to engage in playful learning. As a result, students can acquire the target language and pick up new vocabulary naturally, without feeling pressured in the learning process. Rahmawati et al. (2022) support this by stating that learning through riddle games will challenge the students and it stimulates the critical thinking of the students. Similarly, Trisnawati et al. (2023) and Nasution et al. (2023) highlight that riddle game promotes active participation and heightened interest in vocabulary acquisition. Beyond vocabulary gains, Damayanti et al. (2024) note that riddle games provide opportunities for social interaction and collaboration, contributing to students' competence. Rohman et al. (2024) further assert that riddle games is regarded as an intriguing and efficient approach with its demanding and enjoyable aspects, this activity can inspire a students' mind, boost their motivation, and foster a more dynamic learning atmosphere. Actively involving students in solving puzzles can help them grasp and retain vocabulary more effectively, while Marbun et al. (2024) find that riddles are an effective teaching technique with a significant impact on vocabulary improvement.

The use of riddle game in learning has been widely used by other researchers. According to Wahyuni et al. (2022) propose the steps for effectively implementing riddle games in learning process, such as: (1) students divided into blue and red groups which encourages teamwork and collaboration which each group consists of two students, (2) students in the red group must read and describe various clues, (3) students in the blue group must guess the card's answer using the clue provided, (4) the teacher will rephrase the clue given by the red team, and the blue team answers it once the answer was found. In Addition, Yuliarsih, (2022) applied riddle game with the following steps; (1) directing the students to the topics, (2) connecting the topic with the students, (3) introducing and describing instructional objectives, (4) explaining names of things, (5) requesting students to practice asking for the names of objects with their group mates while the researcher observing them.

Thus, in this study, the researchers implementing the riddle game with some steps as follow; (1) the researchers provided a riddle game for the students to guess the material that being taught, (2) the students were organized into six groups, which each group was given two minutes for answering the riddle with the hints given, (3) the researchers started the puzzle by giving hints and letting the six groups solve it through guessing and the students had to answer the puzzle out loud, (4) the researchers gave 1 point to the group that manages to answer it correctly, (5) the researchers asked all groups to create their own puzzle based on the text given and giving 1 point for each well-made puzzle, (6) the researcher mixed the entire puzzle after all groups have created their own puzzle, (7) the researcher gave a worksheet to each group in the end

of activity which worth 1 additional point per task correctly answered, (8) the group that had the most points won and got a reward.

In teaching vocabulary, riddle games present several advantages and disadvantages. According to Ningrum et al. (2019), riddle games enhance students' enthusiasm for learning by making lessons more enjoyable and keeping them motivated. These games also foster critical thinking, as students must analyze clues and think logically to solve the riddles, thereby improving their problem-solving skills. Similarly, Rohman et al. (2024) emphasize that riddle games stimulate students' ideas, boost motivation, and create a dynamic learning environment through their interactive and entertaining nature. Active engagement in puzzle-solving further helps students better understand and retain new vocabulary. Wilda et al. (2024) support this view by highlighting that riddle games provide a fun and engaging atmosphere, increase students curiosity and excitement about learning English, and foster the development of higher-order thinking skills. Despite these benefits, riddle games also pose several disadvantages. Ningrum et al. (2019) point out that riddle games can make the classroom noisy and may confuse students who struggle to understand the riddles or their meanings, hindering their ability to absorb the material. Sinaga et al. (2022) add that the teaching process can become lengthy and disorganized due to excessive noise and time constraints, leaving some students uncertain about how to respond. Similarly, Rohman et al. (2024) note that preparing riddle games can be times-consuming and their implementation may disrupt classroom focus and order.

Several previous studies explain the effectiveness of riddle game in develop students' vocabulary mastery. Sinaga et al. (2022) conducted research on ten grade students and the result show that the riddle games give significant effect on the students' vocabulary mastery. More evidence with the positive feedback of riddle games come from research reported by Megi et al. (2023) where it show a significant effect in improving the English vocabulary mastery of students. Additionally, Wilda et al. (2024) report that the use of riddle games enhances students' attitudes and overall performance in learning English. Collectively, these findings support the view that riddle game are an engaging and effective strategy for fostering vocabulary mastery in EFL contexts.

According to the previous research, the implementation of riddle game can develop students' vocabulary mastery; numerous previous research studies that have examined the use of riddle game, focusing on various aspects of vocabulary, such as spelling, meaning, synonyms, antonyms, and parts of speech of nouns, verbs, adjectives, and adverbs. However, most of these studies did not specifically identify which types of vocabulary, whether nouns, verbs, adjectives, adverbs, or synonyms and antonyms were improved. Therefore, to address this gap, the researchers conducted a study on the implementation of riddle game to develop vocabulary mastery of the eighth grade students at SMP Negeri 6 Palu by focusing on common-concrete nouns and action verb through narrative texts. The researchers choose to conduct this research using the riddle game to examine whether the riddle game can develop vocabulary mastery of the eighth grade students at SMP Negeri 6 Palu especially in terms of common-concrete nouns and action verbs.

METHOD

This study utilized a quasi-experimental framework featuring a Nonequivalent control group setup to examine the effectiveness of riddle game in elevating EFL students' vocabulary mastery. In this setup, two groups engaged with the experiment.

One designated as the experimental class and the other as control class. The experimental class received instruction through the riddle game while the control class was given lecture method. Both groups underwent a pre and post, but only the experimental class received the treatment in between.

The researchers focused on eighth-grade students at SMP Negeri 6 Palu as population, which included nine parallel classes. The number of students enrolled in each of these classes varied, ranging between the 25 and 32 students per class with the total amount of students being 268 students. Due to the large population size, a cluster random sampling method was employed to select samples for both groups. Thus, to determine the sample, the researchers wrote the names of each class on paper, which was then rolled up and put into a box. After that, the box was shaken and the two classes that came out first were used as the research sample.

Next, in this study examined two variables, namely dependent variable and independent variable. The dependent variable in this research was the vocabulary mastery of the eighth-grade students at SMP Negeri 6 Palu (Y), while the independent variable in this research was the implementation of riddle game (X). Tests in terms of pretest and posttest were distributed as the instrument to collect the data. This test was constructed by the researchers based on the material used in the learning process, where the text material was obtained from bright an English book and online resources. The vocabulary test was an objective test with total number 25 that consisting of 10 items multiple choices, 5 items jumbled words, and 10 items matching vocabulary. This vocabulary test focused on the key elements of the vocabulary instructions, those being common-concrete nouns and active verbs. This test was examined for validity and reliability before being used in research.

Therefore, the researchers assessed the pre-test and post-test using a scoring rubric developed by Enjel et al. (2022), which had been adapted for this research by modifying the types of the tests. The original test types which included multiple choice items, fill in the blanks items, and matching items had been revised to multiple choice, jumbled words, and matching vocabulary as described below:

Table 1. Scoring Rubric of Vocabulary

No	Type of Test	Number of Items	Score of Items	Criteria	Total Score
1	Multiple choice	10	1	Correct answer	10
			0	Incorrect answer	
2	Jumbled words	5	1	Correct answer	5
			0	Incorrect answer	
3	Matching vocabulary	10	1	Correct answer	10
			0	Incorrect answer	

Adapted from Enjel et al. (2022)

Furthermore, after the treatments were completed, the test results were analyzed using SPSS version 24. The process began with the calculation of descriptive statistics, including the mean, standard deviation, and frequency distribution of both pre-test and post-test scores from the experimental and control groups, providing an initial overview of students' vocabulary performance before and after the intervention. To determine the appropriate statistical procedure, the researchers conducted a normality test using the Shapiro-Wilk method to assess whether the data followed a normal distribution. Since

the data were not normally distributed, the researchers proceeded with the Mann-Whitney U test, a non-parametric procedure used to compare two independent groups, to examine whether there were significant differences in the rank order of scores between the experimental and control classes.

FINDINGS AND DISCUSSION

Findings

The result of test consists of two components; the initial component is the pre-test result, which aims to measure students' prior knowledge of vocabulary and the second component is the result of post-test, intended to determine the effect of the utilization of riddle game on students' vocabulary mastery, which revealed as below:

Table 2. The Learning Outcomes of Pre-test and Post-test Scores of Experimental and Control Class

No	Initials	Groups	Students' Score	
			Pre-Test	Post-Test
1	ALR	Experimental	33	42
2	ADO	Experimental	33	46
3	AR	Experimental	29	71
4	AF	Experimental	21	33
5	RE	Experimental	25	33
6	BR	Experimental	17	58
7	MNA	Experimental	38	38
8	BTH	Experimental	17	33
9	APFD	Experimental	25	54
10	AWP	Experimental	21	33
11	AN	Experimental	29	38
12	SY	Experimental	46	54
13	MS	Experimental	42	79
14	AL	Experimental	42	83
15	MWD	Experimental	42	29
16	GRF	Experimental	33	50
17	FI	Experimental	13	50
18	YRA	Experimental	54	67
19	RG	Experimental	71	46
20	BA	Experimental	58	96
21	AR	Experimental	75	46
22	KPR	Experimental	75	96
23	RRP	Experimental	46	54
24	AKN	Experimental	83	92
25	MHA	Experimental	71	58
26	ZZA	Control	83	79
27	KAJ	Control	54	79
28	JV	Control	46	71

29	SNR	Control	33	75
30	RPL	Control	29	25
31	MLA	Control	33	33
32	RA	Control	21	29
33	MRA	Control	33	21
34	CCN	Control	13	13
35	RF	Control	13	17
36	QAN	Control	29	25
37	NNR	Control	25	63
38	RAG	Control	4	13
39	AB	Control	8	8
40	GP	Control	17	13
41	MAN	Control	88	88
42	FT	Control	63	50
43	NEF	Control	83	83
44	WIC	Control	67	71
45	SVJ	Control	63	83
46	RSC	Control	75	83
47	TF	Control	83	75
48	CAR	Control	88	38
49	MKL	Control	42	75
50	PWP	Control	29	21

The results in Table 2 above indicate a noticeable improvement in the scores of students from the experimental class after being exposed to the treatment through the implementation of riddle. Specifically, the mean score rose from 41.56 in the pre-test to 55.16 in the post-test, resulting in an average gain of 13.60 points. This considerable improvement suggests that the application of riddles as strategy had a favorable effects on their vocabulary mastery. Furthermore, the students' pre-test scores ranged from 13 to 83, while the post-test scores increased to a range of 29 to 96 showed a progress. This increase demonstrated that the implementation of the riddle game statistically has a beneficial impact and contributed positively on students' vocabulary development.

Next, the control class had an average pre-test score of 44.88, which elevated to 49.24 in the post-test. This reflects an overall mean improvement, with an average increase of 4.36 points. The largest individual increase was achieved by student SNR with an increase of 42 points (from 33 to 75). In contrast, the smallest increase was 4 points that occurred in two students RF (from 13 to 17) and WIC (from 67 to 71).

When the results were compared, the experimental class obtained higher mean score on the post-test (55.16) exceeding the control class (49.24). Additionally, the average score gain in the experimental class was (13.60) points, which is substantially greater than the control groups' average gain of 4.36 points. This indicates that the riddle game proved more effective in develop students' vocabulary acquisition than the conventional method. The interactive and engaging nature of the riddle game may have helped students to better understand and retain new vocabulary, particularly common concrete nouns and action verbs.

The subsequent steps, the researchers utilized SPSS version 24 for windows to compute the range, minimum, maximum, mean, and standard deviation based on the data in table above. The outcomes of the descriptive statistical analysis are presented below.

Table 3. Descriptive Statistics of Pre-Test and Post-test
Table Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Pre-test Experimental	25	70	13	83	41.56	20.531
Post-test Experimental	25	67	29	96	55.16	20.578
Pre-test Control	25	84	4	88	44.88	27.546
Post-test Control	25	80	8	88	49.24	28.918
Valid N (listwise)	25					

Table 3 demonstrates the descriptive statistics for both groups. In the experimental class, students' pre-test scores ranged from 13 to 83, with a mean score 41.56 and standard deviation value of 20.531. After the treatment was given, the post-test score showed improvement, ranging from 29 to 96 with mean score 55.16 and the standard deviation value slightly increased to 20.578. This increase in the average score from 41.56 in the pre-test to 55.16 in the post-test demonstrated the positive impact of the treatment given to the experimental class.

In the other hand, the pre-test scores of control class ranged from 4 to 88, with a mean score of 44.88 and a standard deviation of 27.546. In the post-test, the minimum score increased to 8 while the maximum remained at 88. The average score slightly improved to 49.24 with a standard deviation of 28.918. Compared to the control class, the experimental class demonstrated a greater improvement in mean score. The experimental class revealed a greater improvement in average score compared to the control group.

A normality test was applied to the learning outcome score of class VIII Kebangsaan using riddle game and class VIII Teladan using a conventional method at SMP Negeri 6 Palu. The analyzed was performed by using SPSS version 24 with the Shapiro-Wilk that aimed to check if the data were normally distributed. Data were considered normal if $\text{Sig} > 0.05$. The results are presented below:

Table 4. Test of Normality

Groups	Kolmogorov-Smirnov ^a			Shapiro-Wilk			
	Statistic	Df	Sig.	Statistic	Df	Sig.	
Learning outcomes	Pre-test Experimental	.142	25	.200*	.924	25	.064
	Post-test Experimental	.165	25	.077	.902	25	.020
	Pre-test Control	.187	25	.024	.917	25	.044
	Post-test Control	.214	25	.004	.857	25	.002

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the results shown on the Table 4, the Shapiro-Wilk test indicates that the data were not normally distributed, with the significance values for both groups below 0.05. The experimental group had a pre-test value of 0.064 and a post-test value of .020, while the control group pretest was 0.044 and the post-test 0.002. Due to the non-normal distribution of the data, the researchers then implemented a non-parametric test, which is appropriate when the data does not rely on assumption of normality.

Table 5. Mann-Whitney U Ranks Test Result

	Groups	N	Mean Rank	Sum of Ranks
Learning outcomes	Experimental group	25	27.36	684.00
	Control group	25	23.64	591.00
	Total	50		

The Mann-Whitney test was applied to compare the learning outcomes of the experimental and control groups, as the data did not meet the normality assumption required for parametric tests. As shown in the Table 5 above the experimental group contained 25 students with a mean rank of 27.36 and total rank of 684.000, while the control group contained 25 students with a mean rank of 23.64 and a total rank of 591.000. These results suggest that the experimental group generally has a higher learning outcome score than the control group which indicates a positive performance compared to the control group. However, although the rank data imply that the students in the experimental group generally outperformed those in the control group, the final conclusion regarding the effectiveness of riddle game based on the Mann-Whitney u test significance level are presented as below.

Table 6. Test Statistic for Mann-Whitney U Ranks Test

	Results
Mann-Whitney U	266.000
Wilcoxon W	591.000
Z	-.904
Asymp. Sig. (2-tailed)	.366

a. Grouping Variable: Classes

Table 6 shows that Mann-Whitney produced a U value of 266.000 with a corresponding Wilcoxon w value of 591.000 and a Z score of -0.904. The two tailed asymptotic significance value (p-value) was .366. Since the p-value exceeds than the standard alpha level of 0.05, indicating that there is no significant difference in learning outcomes between the experimental and control groups. Although descriptive statistics and mean ranks from previous analysis reflect that the experimental group has slightly higher mean ranks, the difference did not reach threshold required to be considered significant in statistical terms.

Discussion

This study focused on developing students' vocabulary mastery through the teaching of common concrete nouns and action verbs, utilizing a riddle game as an engaging pedagogical technique. The findings indicate that the riddle game significantly

contributed to creating an interactive learning environment, which aligns with the assertions of Wilda et al. (2024) that such games enhance students' curiosity and motivation in learning English.

Recent studies further emphasized the pedagogical advantages of integrating games into vocabulary instruction, as reported by the results of the study by Ling & Aziz, (2022) that game-based learning strategies actively participate in vocabulary learning and demonstrate confidence in communicating and interacting with their peers during gameplay. The students also perceived vocabulary learning through games as enjoyable and interesting. Similarly, research by Rahmawati et al. (2022) stated that riddle require greater creativity in playing word formed that can motivate people become more attractive to play. Moreover, riddle games facilitates faster learning, students exhibit greater activity and enthusiasm during the vocabulary learning process (Megi et al., 2023).

Although many previous studies found that riddle games are effective in improving students' vocabulary mastery, this study revealed different results. At the beginning of this study, students exhibited limited vocabulary and struggled to comprehend the meanings of words, especially in the verb category. To address this, the researchers provided explicit instruction, including definition and examples of common-concrete nouns and action verbs, as well as demonstrated how to construct riddles on the board. By the subsequent meeting, students began to grasp the distinctions between word types and the mechanics of the game. However, they continued to face challenges in identifying target words and creating their own riddles based on narrative texts. After the instructional treatment, the researchers found that the students faced difficulties in solving riddles involving active verbs, particularly in irregular verbs form. Nevertheless, there was a noticeable improvement in their mastery of common-concrete nouns.

The challenges faced by students in fully understanding and utilizing vocabulary can be attributed to several factors, including time constraints during the implementation of the riddle game, entrenched learning habits, and difficulties in grasping the material. Research indicates that language acquisition requires substantial practice and reinforcement, particularly for students with lower performance levels (Sinaga et al., 2022). Adequate time for practice is essential for students to internalize new vocabulary and develop critical thinking skills necessary for problem-solving.

In light of these findings, several pedagogical implications emerge. First, educators should consider extending the duration of vocabulary instruction to allow for more comprehensive practice and reinforcement of new concepts. This could involve integrating additional activities that promote critical thinking and problem-solving skills alongside the riddle game. Furthermore, it is crucial to foster a supportive learning environment that encourages students to engage with the material actively and collaboratively. Additionally, educators may benefit from incorporating varied instructional strategies that cater to diverse learning styles and preferences. For instance, utilizing multimedia resources or interactive technology could enhance engagement and facilitate deeper understanding of vocabulary. Ongoing assessment and feedback mechanisms should also be established to monitor student progress and adapt instructional approaches as needed. Thus, while the riddle game proved to be an effective tool for enhancing vocabulary mastery, the findings underscore the importance of addressing the challenges faced by students in language acquisition. By implementing these recommendations, educators can create a more conducive learning

environment that supports vocabulary development and fosters overall language proficiency.

CONCLUSION

In conclusion, this study indicates that the implementation of riddle game did not provide a statistically significant improvement in students' vocabulary mastery, as confirmed by the Mann-Whitney U ranks procedure, which revealed that the differences in mean ranks between the experimental and control groups were not substantial enough to be considered significant. However, this study highlights the positive impact of the riddle game on student engagement, participation, and motivation, suggesting its educational relevance despite the lack of measurable improvement in vocabulary acquisition. Therefore, English teachers are encouraged to combine the riddle game with other instructional strategies to enhance its effectiveness, while students should be motivated to explore creative methods, including games, to further develop their vocabulary skills. For future researchers, it is recommended to conduct similar studies with extended treatment periods, investigate various riddle formats, adjust the difficulty levels according to student proficiency, and incorporate multimedia tools to optimize comprehension and support long-term vocabulary acquisition. These approaches may provide deeper insights into the potential of riddle-based instruction in enhancing vocabulary mastery.

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