

The Effectiveness of the Hangman Game on Vocabulary Mastery of Fourth-Grade Students at SDN 3 Padamara, East Lombok

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Abstract

This study aims to investigate the effectiveness of using the Hangman Game as a pedagogical tool to enhance vocabulary mastery among fourth-grade students at SDN 3 Padamara, East Lombok. The research employed a pre-experimental one-group pretest-posttest design, involving 32 students as participants. Data were collected through a 20-item multiple-choice vocabulary test administered before and after the treatment. The treatment consisted of two learning sessions using the Hangman Game as the instructional method. The results revealed a significant increase in students' vocabulary scores from a mean of 49.69 (pretest) to 69.19 (posttest), with a significance value of $p = 0.000$ ($p < 0.05$), indicating strong statistical significance. These findings suggest that the Hangman Game is effective in improving vocabulary acquisition, engagement, and motivation in English learning. The study concludes that game-based learning strategies such as Hangman can serve as accessible and enjoyable alternatives to traditional methods, particularly in under-resourced primary school settings.

Keywords: Hangman Game; Vocabulary Mastery; Game-Based Learning; Elementary Education; English Language Learning

INTRODUCTION

Vocabulary is one of the most essential components in learning English as a Foreign Language (EFL), particularly at the elementary school level (Meutia et al. 2023). A solid vocabulary foundation supports the development of the four main language skills such as listening, speaking, reading, and writing (Trinita & Kareviati, 2023). Without adequate vocabulary, students will struggle to communicate effectively and understand learning materials. Therefore, introducing vocabulary learning from an early age is crucial for helping students build comprehensive and sustainable language competence. Ideally, vocabulary teaching in the context of elementary school should be designed in a fun, interactive, and contextualized way to align with students' cognitive and affective development (Rohayati, 2013). The use of various and interesting learning media, such as pictures, songs, educational games, and collaborative activities in small groups, has been proven effective in increasing students' active engagement and vocabulary retention (Liu et al., 2023). Moreover, the current English curriculum in Indonesia has also facilitated this approach, especially through the preparation of thematic-oriented teaching materials, such as family, school, and neighborhood themes. This thematic approach allows the integration of vocabulary in contexts that are meaningful to students' daily lives, thus facilitating semantic understanding and practical use of new words. This approach not only helps to understand the meaning of words more deeply but also increases students' motivation and confidence in using English communicatively. In reality, however, classroom practices often do not meet these expectations. Preliminary observations at SDN 3 Padamara in East Lombok revealed that vocabulary teaching still largely relies on traditional methods such as rote memorization, copying from textbooks, and repetitive drills.

These methods rarely engage students actively and often lead to boredom (Nasution et al. 2024). As a result, many students find it difficult to remember vocabulary, use it in sentences, or feel confident in learning English. This situation is worsened by the limited availability of teaching media and a lack of teacher training in applying more innovative approaches. One effective way to address these challenges is by integrating educational games into language learning (Intriago-Cobeña et al., 2024). Games can make students more interested and engaged, as they learn while having fun. One such game is Hangman, a word-guessing game that helps students practice recalling vocabulary, understanding spelling, and thinking critically in an enjoyable environment. Through this activity, students not only learn from their mistakes, but also develop teamwork and self-confidence in using English (Rahayu & Farid, 2017).

Several prior studies had been conducted by some researcher on the effectiveness of the Hangman Game. The firsts relevant study was conducted by Mardikawati (2024). The results showed a notable improvement in vocabulary scores among students taught using the Hangman Game, along with increased enthusiasm and classroom participation. The next relevant study was by Dharmayasa (2023) who aimed to explore how the Hangman Game could be utilized in both online and offline classroom environments. Using a descriptive qualitative approach, the study found that the Hangman Game increased student engagement and confidence when learning new vocabulary. Moreover, Ramadhani (2023) assessed the effectiveness of the Hangman Game in improving students' vocabulary mastery. Using a quasi-experimental method, the findings indicated a significant increase in vocabulary scores among students who were taught using the Hangman Game. The study concluded that the use of Hangman as an instructional strategy could meaningfully improve vocabulary learning outcomes through interactive and game-based techniques. However, the key difference lies in the context. While the previous studies emphasized the adaptability of the game across different learning environments (online and offline), the current research is more focused on its in-classroom procedural implementation and its role in vocabulary mastery through direct student interaction. Furthermore, the difference is found in the educational level; while Mardikawati's study was conducted at a junior high school (MTs), the current research focuses on elementary students. Additionally, the current research may employ simpler vocabulary and a more basic classroom structure suitable for younger learners. Since the Hangman game can be seen as a practical solution to improve vocabulary mastery and learning motivation, especially in elementary schools located in rural areas based upon the previous relevant research. Hence, the present study aims to examine the effect of the Hangman game on vocabulary mastery among fourth-grade students at SDN 3 Padamara, East Lombok. This research applied a quantitative approach to measure the effectiveness of game-based learning in supporting English language education.

METHOD

This study employed the One Group Pretest-Posttest Design model, a quantitative technique with a pre-experiment procedure (Knapp, 2016). In this design, one group of students is observed before and after being given treatment in the form of using the Hangman game as a medium for learning English vocabulary. The main objective of this study is to evaluate the effectiveness of the Hangman game in improving students' vocabulary acquisition. The research process involved three main stages: pretest, treatment, and posttest. The pretest stage was conducted to measure students' vocabulary acquisition level before the treatment was given. After that, the Hangman game applied regularly during a certain learning period. Finally, the posttest was conducted to find out the extent to which the improvement of vocabulary mastery occurred after the treatment. Furthermore, the data from the pretest and posttest results was analyzed using descriptive statistics to determine the percentage of improvement in students' vocabulary skills. This approach is widely used in basic education research, as it

allows for early measurement of the effectiveness of learning interventions in environments that do not allow for full experimentation. According to Dwiningrum et al. (2024) pre-experiment research design is suitable for evaluating the effectiveness of technology or game-based learning media on vocabulary acquisition. A similar study by also showed that a one-group pretest-posttest design was effective in showing significant changes in elementary school students' vocabulary learning (Wulandari, 2025). Although this design has limitations in controlling external variables, it still provides a strong initial picture of the impact of learning interventions in a real classroom context. Thus, the selection of One Group Pretest-Posttest design is considered appropriate to measure the effect of using Hangman game on students' vocabulary mastery in a structured and systematic manner.

Table 1. Research design of one group pretest – posttest design

Pre-test	Independent	Post-test
Y_1	X	Y_2

This research was conducted at SDN 3 Padamara, Sukamulia District, East Lombok Regency, West Nusa Tenggara. This location is chose because it is an elementary school that still faces limitations in English learning methods. This condition makes the research location ideal to test the effectiveness of alternative learning strategies such as the Hangman game. Furthermore, In this study, the researcher employed the *saturation sampling technique*, also known as *saturated or census sampling*, where all members of the population will include as research subjects. This approach was chosen due to the relatively small and homogeneous population, consisting of 32 fourth-grade students who shared similar demographic and academic characteristics relevant to the research variables. Saturation sampling is considered appropriate in quantitative research when the population size is limited and manageable, allowing the researcher to capture the full variability and behavior of the group without the risk of sampling bias. Data collection in this study was carried out through three main stages, namely *pretest*, *treatment*, and *posttest*, to obtain an overview of changes in vocabulary mastery after treatment in the form of Hangman Game. This design belongs to the category of pre-experimental design, specifically one group pretest-posttest design, which allows researchers to observe differences in conditions before and after the treatment is given. To analyze the data, Descriptive statistics was used to provide an overview of the data from this study before inferential analysis is conducted. In this study, descriptive statistics aims to determine the average value (mean), maximum value, minimum value, and data distribution (standard deviation) of the variable. To get the score the researcher will use SPSS statistic 26 for windows. Furtermore, Hypothesis testing statistics in this study used inferential statistics to assess the difference between pretest and posttest scores on English vocabulary acquisition after the application of Hangman Game. The analysis technique will use paired sample t-test, because the data came from the same group that will test before and after treatment. Before the main test, normality and homogeneity test will conduct to ensure that the data is normal and homogeny distribute. That will be analyze by using SPSS statistics 26 for windows. To test whether the use of Hangman Game has an effect on vocabulary acquisition, Independent Sample t-Test will used. The null hypothesis (H_0) states that there is no significant difference in vocabulary acquisition by using Hangman Game, while the alternative hypothesis (H_1) states that there is a significant difference. The use of independent t-test is appropriate because the data analyzed are vocabulary test scores from the pretest posttest.

RESULTS AND DISCUSSION

Results

A. Descriptive Statistics

Based on research that has been conducted, which aims to determine the effectiveness of using the Hangman game as an English vocabulary learning medium for fourth-grade students of SDN 3 Padamara. The data analyzed were obtained through two measurements, namely pretest and posttest, of 32 students in one class. The analysis was conducted through *descriptive statistics, a normality test, a homogeneity test, and hypothesis testing using a paired sample T-test*. The presentation in this chapter is organized systematically so that each step of the analysis can support a logical and measurable interpretation of the effectiveness of the treatment.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	32	35	70	49.69	10.234
Posttest	32	55	85	69.19	7.588
Valid N (listwise)	32				

Based on the data in the table above, the average score of students' pretests was 49.69 and increased to 69.19 in the posttest, with a difference of 19.5 points, indicating an overall improvement in learning outcomes. The standard deviation decreased from 10.234 to 7.588, indicating that the variation between student scores narrowed and learning outcomes became more homogeneous. In addition, the minimum score increased from 35 to 55, and the maximum score from 70 to 85, meaning both the lowest- and highest-scoring students *improved*. The combination of the increase in the mean, the narrowing of the score distribution, and the shifting of the lower and upper limits of the scores indicates that the improvement was comprehensive and evenly distributed across the groups.

Table 3. Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.175	32	.014	.938	32	.064
Posttest	.178	32	.011	.946	32	.108

a. Lilliefors Significance Correction

The normality test was conducted using two methods, namely Kolmogorov-Smirnov and Shapiro-Wilk. Because the number of samples is less than 50, the Shapiro-Wilk test results are used as the main reference. In the pretest data, the Shapiro-Wilk significance value was 0.064, and in the posttest data, it was 0.108. Both are greater than 0.05, so it can be concluded that both data are normally distributed. Although the Kolmogorov-Smirnov results show a significance value <0.05 , in the context of a small sample size, Shapiro-Wilk is a more sensitive and valid test, so it is the basis for decision making. Thus, the normality requirement to proceed with parametric tests has been met.

Table 4. Test of Homogeneity of Variance

	Levene Statistic	df1	df2	Sig.
Posttest Result Based on Mean	1.654	1	62	.203
Based on Median	1.577	1	62	.214
Based on Median and with adjusted df	1.577	1	55.365	.215
Based on trimmed mean	1.771	1	62	.188

The homogeneity test was conducted using Levene's Test for Equality of Variances to determine whether there is an equal variance between the measurement data. All significance values in the table show numbers above 0.05, both based on the mean, median, and trimmed mean. This indicates that the data has a homogeneous variance. This homogeneity of variance means that there is no significant difference in the distribution of scores between students at the time of the posttest, so that one of the main assumptions of the parametric test has been met.

B. Hypothesis Testing

Table 5. Paired Samples Test
Paired Differences

Pair	Pretest- P'osttest	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2- tailed)
					Lower	Upper			
1		- 19.500	5.230	.925	-21.386	-17.614	- 21.091	31	.000

Since the same group was measured twice, the Paired Sample T-Test was used for hypothesis testing. According to the test findings, the rise in scores from the pretest to the posttest is reflected in the mean difference value of -19.5. The difference is very statistically significant, as indicated by the t-value of -21.091 and the significance level of $p = 0.000 < 0.05$. As a result, the alternative hypothesis (H_1) is accepted and the null hypothesis (H_0), which claims that there is no difference between the pretest and posttest scores, is rejected. This indicates that using the Hangman Game to help pupils improve their vocabulary mastery has been shown to be successful.

Discussion

The results of the analysis showed that there was a significant increase in students' vocabulary acquisition scores after learning using the Hangman Game. The mean score increased by 19.5 points, accompanied by a decrease in the standard deviation, indicating a higher homogeneity of learning outcomes. In addition, the increase in the minimum and maximum scores indicates that all students both low and high ability made significant progress. This finding reinforces the theory of game-based learning, which states that a game-based approach can improve students' motivation, engagement and learning outcomes (Jääskä et al., 2022). The Hangman game provides visual and kinesthetic stimulus that supports cognitive processes in vocabulary acquisition, such as letter pattern recognition, meaning association, and memory reinforcement. This research is in line with the findings of who stated that the Hangman Game is effective in improving vocabulary retention of junior high school students (Mardikawati & Kusumawanti, 2024), and supports the results of Purba & Katemba, (2022) which stated that the use of games can create a pleasant learning atmosphere and reduce learning anxiety. In the context of SDN 3 Padamara, which has limited digital learning media, the utilization of simple methods such as the Hangman Game is a contextual and relevant solution. Pedagogically, this approach shows that teachers do not need high technology to create interesting and effective learning. Games can be integrated into various thematic topics in the Merdeka Curriculum, and at the same time help develop students' affective aspects such as self-confidence and courage to participate (Nisa

et al. 2024). However, this study has limitations because it uses a One Group Pretest-Posttest design, without a control group. This design is not fully able to isolate the treatment effect from external factors such as the influence of teachers, the environment, or other psychological factors. For further research, it is recommended to use a quasi-experiment design with two groups (control and experimental), so that internal validity can be improved.

CONCLUSION

This research investigated the effectiveness of using the Hangman Game as a teaching medium to enhance vocabulary mastery among fourth-grade students at SDN 3 Padamara, East Lombok. The study employed a pre-experimental one-group pretest-posttest design, involving 32 students as research subjects. Based on the data analysis and discussion in the previous chapter, several key conclusions can be drawn:

1. The use of the Hangman Game as a teaching medium has a positive and significant impact on enhancing vocabulary mastery among fourth-grade students at SDN 3 Padamara, East Lombok. The findings indicate a marked improvement in students' vocabulary achievement following the implementation of the game-based learning approach. The results support the effectiveness of interactive and engaging instructional methods in promoting language acquisition in young learners.
2. The game fosters active, engaging, and enjoyable learning experiences. In addition to improving scores, the game also promotes student motivation, participation, and enthusiasm. These non-cognitive benefits are essential in early language development and align with the characteristics of young learners who benefit more from play-based and multisensory learning environments.
3. The Hangman Game serves as an effective low-cost pedagogical strategy. Its simplicity, accessibility, and flexibility make it a suitable tool for under-resourced classrooms, especially in rural contexts. It allows teachers to conduct interactive and meaningful vocabulary learning without the need for sophisticated materials or digital infrastructure.

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