Empowering Offline Pedagogical Hangman Games and Its Effect on EFL Learner's Vocabulary Acquisition

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Abstract: This study examined the Influence of pedagogical offline hangman games on the EFL learner's vocabulary acquisition. This research was a quasi-experimental design involving independent and dependent variables. Participants were 60 EFL learners from Indonesian Rural Junior High schools ages 12-15 years, selected by purposive sampling. The data were collected by a multiple-choice vocabulary test with four answer choices with a reliability coefficient of 0.92. The Shapiro-Will test was used to determine normality, whereas Levine's test was for homogeneity. To analyze the data, researchers used independent sample t-tests and N-Gain indexes. These results revealed a significant difference between the experimental and control groups in terms of the EFL vocabulary gains of the learners. The N-gain index test showed that the average score in the experimental group was 0.444 or 44.4%, while it was 0.043 or 4.3% in the control class. The results indicated that using the offline pedagogical hangman games as media was more effective than conventional ones for EFL vocabulary learning.

Keywords: Offline Pedagogical Hangman Games, Vocabulary Acquisition, EFL Learners

1. Introduction

In any language, including English, vocabulary is essential, especially for English as Foreign Language (EFL) (Boyinbode, 2018; Sampebua et al., 2020). Learners' ability to learn languages primarily depends on their proficiency in vocabulary (Behforouz, 2017; Har et al., 2019). Vocabulary learning plays an essential role in the development of communicating fluently (Bonala Kondal et al., 2019). Previous researchers have viewed vocabulary as a critical part of the language on which effective communication is based (Liu, 2018; Sampebua et al., 2020; Trang, 2020). Learners need English vocabulary to support them in communicating using spoken and written English (Al-Khresheh & Al-Ruwaili, 2020; Hariyono, 2020). People need to have a variety of vocabulary to help them in all their language skills, such as speaking, reading, listening, and (Nurchurifiani et al., 2021).

Previous research reports that students often find it challenging to understand and learn English because students lack the motivation to learn English (Iaremenko, 2017; Sihaloho et al., 2017). Students also often find it difficult when to speak and read English. The main reason for this problem is the lack of vocabulary

(Prince Oduro, Florence Akua Mensah, Frank Quansah, Richard Ayertey Lawer, Vera Rosemary Ankoma-Sey, 2021; Sadieva & Karaeva, 2019). In addition, a frequent problem in learning English is that students are passive in the classroom for various reasons (Samwan, 2021).

Students who lack vocabulary cannot express their ideas and are unlikely to communicate effectively with people. Many EFL teachers have difficulty teaching (Sinaga et al., 2020). In English teaching, teachers spend much time explaining new vocabulary in each unit, but the teaching effect is ineffective (Chang et al., 2021). The teacher explains the material and then assigns assignments so that students are less interested in learning English, especially vocabulary (Helma & Jufriadi, 2020).

To overcome the problems in students learning English, students need media when learning vocabulary mastery. Media is intended as one of the facilities that can help students quickly improve their vocabulary. Previous research believes that games can be the right way to reduce students' boredom in learning vocabulary (Nigora, 2019). Word games are suitable for teaching English vocabulary to students in Junior High School. These games can help students memorize new vocabulary easily and are full of excitement (Bafadal & Humaira, 2019). One of the communicative word games in teaching vocabulary is the Hangman game. Hangman games are one of the most fun guessing games. Players are asked to think of a word, phrase, or sentence, and others try to guess it with the suggested letters. English teachers can also use Hangman games as an innovative strategy in teaching vocabulary. Hangman games can significantly improve students' ability to master vocabulary and motivate students in teaching and learning, especially for EFL learners (Kuning & Rohaina, 2021).

Earlier studies on hangman games tended to concentrate on their digital and internet applications (Farihah et al., 2020; Kuning & Rohaina, 2021). The research focuses on using digital Hangman-Hangaroos that require devices or tablets for learning purposes (Nazmi et al., 2021). In addition, past research has focused on the digital Hangman game to enhance learners' vocabulary acquisition when learning narrative material (Farihah et al., 2020). This study utilized convergent parallel mixed methods as a research method. This research continues to employ the digital Hangman as learning media. Hence it cannot be viewed when offline. Kuning & Rohaina (2021) also researched hangmen and reported on the game's impact on the vocabulary mastery of seventh graders.

Most of the previous research still focused on using media in the form of digital Hangman. There have not been many previous research results on offline pedagogical hangman games that students can access offline, especially on their Influence on vocabulary acquisition in the classroom learning in rural schools. Therefore, this study aims to investigate whether the offline pedagogical hangman game effectively improves vocabulary acquisition in vocabulary learning. This may solve the EFL learners' problems in vocabulary mastery in rural village areas with poor internet connections.

The formulation of the questions in this study is as follows:

1. To what extent is a significant difference between EFL learners who are provided offline pedagogical hangman games and those who are offered conventional media on vocabulary acquisition?

2. Does using offline pedagogical hangman games effectively affect EFL learners' vocabulary acquisition?

2. Theoretical Background

2.1 EFL Vocabulary Acquisition

The primary aspect of learning a new language is expanding one's vocabulary (Aravind & Rajasekaran, 2020). For a language to convey what is being thought and communicated effectively, the construction of sentences requires vocabulary usage (Bai, 2018; Damanik, 2018). It is well acknowledged that successful EFL learning depends heavily on vocabulary (Ghalebi et al., 2021). Mastery of vocabulary is essential to studying EFL. This is because EFL students who improve their vocabulary can also improve their reading, speaking, and writing abilities (Ajisoko, 2020). Because of the close relationship between vocabulary and language skills, developing learners' vocabulary is vital to successfully acquiring foreign languages. The challenge frequently arises in developing a new vocabulary is the learner's inability or unwillingness to remain motivated during the process. Learners are not motivated to learn English because they are bored throughout the class. Vocabulary acquisition is crucial to developing all three language skills: speaking, listening, and writing (Bozorova & Salixova, 2019; Syafrizal et al., 2019).

Vocabulary serves as the foundation of any language. Inability to erect a structure due to lack of necessary materials. Vocabulary is the building material of any language; without it, sentences cannot be constructed (Cavin et al., 2018). It is easy to see why vocabulary is integral to any English as a foreign language curriculum (Boyinbode, 2018). On the other hand, acquisition is an unconscious process that occurs implicitly during the Learner's EFL. It means that the process of learning a new language is entirely spontaneous. If EFL students focus on vocabulary development, they will find it very simple to pick up conversational skills (Albiansyah & Fahriany, 2020; Shih, 2020).

2.2 The Approach to Teaching EFL Vocabulary

Chang et al. (2021) state that many EFL teachers struggle with instruction. Teachers spend time during a unit introducing new vocabulary. However, this strategy is insufficient. According to Sinaga et al. (2020), teachers have challenges due to students' inability to comprehend the meaning of words in a phrase. They lack vocabulary because they find it challenging to recall words and are unwilling to learn. Indeed, mastering vocabulary is one of the most challenging challenges students face, particularly those studying a second or foreign language (Elwakeil, 2017; Lei, 2018). Teachers must devise a method for overcoming students' difficulties in vocabulary acquisition to extend their vocabulary and improve its quality (Brodarić Šegvić, 2019; Trinh & Le, 2021). Most EFL instructors rely solely on dictionaries as a learning tool.

Most educators believe that students can remember for themselves when they search for the meaning of vocabulary using a dictionary. Previous studies have confirmed that dictionaries are the most effective tool for acquiring new vocabulary and grammar structures in a foreign language (Zhang et al., 2021). However, EFL students won't be able to retain the terminology alone from translation. More so, languages that are not your mother tongue. Those who are learning are likely to forget quickly due to boredom. Suppose EFL educators can creatively identify the proper media. Songs, games, stories, and other forms of media can all be used to help students learn new words (Abubakr Abdulrahman et al., 2022; Glaser, 2018). Everybody

could have more pleasure if educators devised creative ways to employ games in the EFL classroom. It will pique the learners' attention and prevent the classroom from becoming boring (Albiansyah & Fahriany, 2020; Aqsa et al., 2017). The classic hangman game is a great way to learn new words. Word games like Hangman can increase participation and discussion in the classroom. EFL students can benefit from teachers modifying traditional Hangman games. To that end, they might use media like hangman games to expand their vocabularies (Kuning & Rohaina, 2021; Munikasari et al., 2021; Nazmi et al., 2021). In addition, Hangman games can help EFL teachers to create active, engaging, and fun classes.

2.3 Pedagogical Hangman Game as Instructional Media for Teaching Vocabulary

Using media is essential to develop learners who are engaged in learning the English process (Pushpanathan, 2017). Media is required to create engaged English-learning learners (Pushpanathan, 2017). The use of wordplay is one of the entertaining and suitable methods for educating EFL students (Syafii et al., 2020; Wu et al., 2020). EFL teachers can use word games such as Hangman games to teach learners the alphabet and vocabulary. Researchers selected Hangman games as one of the word games used to instruct EFL learners. So the EFL learners can learn vocabulary through this game. Using Hangman games, students can practice the alphabet and vocabulary, which are essential to their English skills, and create a pleasant atmosphere for teaching and learning (Manan, 2018; Munikasari et al., 2021). There are multiple ways to play the Hangman game. Both offline and internet Hangman games are available. Previously, several academics employed the Hangman game as a digital or online game (Domanski, 2019; Nazmi et al., 2021). However, researchers utilized Hangman offline and adapted it to the settings and requirements of EFL learners at the research site. It accounts for poor internet connections and the limitations of digital devices such as tablets, smartphones, etc.

In this study's Hangman game, researchers played the game in the classroom with EFL learners. Players are prompted to think of a word, phrase, or sentence, while others attempt to guess it using the letters provided. Previous research indicates that Hangman games can only be played by two individuals (Domanski, 2019). However, numerous subjects were employed in this experiment. In addition, researchers uncovered earlier studies in which a single individual played digital Hangman games. Therefore, it may be stated that the number of participants does not affect hangman games. (Nazmi et al., 2021). According to prior studies, hangman games significantly impact EFL learners' vocabulary development (Kuning & Rohaina, 2021; Manan, 2018; Munikasari et al., 2021). Therefore, hangman games are an innovative method for teaching vocabulary. Hangman games can significantly enhance students' motivation and vocabulary retention, particularly for EFL learners (Kuning & Rohaina, 2021).

3. Method

3.1 The Study Design

This study applied a quasi-experimental design with a pre-and post-test. This study provided independent variable manipulation with subjects assigned to the treatment group non-randomly and without complete control (Donald Ary et al., 2010; Mujiono & Herawati, 2021). In this study, the independent variables were offline pedagogical hangman games administered to experimental groups and conventional media

administered to control groups. And vocabulary acquisition is the dependent variable. Table 1 provides a detailed description of the study's pretest-posttest design (Donald Ary et al., 2010).

Table 1: The study's pretest-posttest design

Groups	Pretest	Treatment	Posttest
Experiment	Y1	X	Y2
Control	Y3	O	Y4

Note Y1: pretest in the experimental group; Y2: pretest in the control group; X: treatment utilizing pedagogical Hangman games; O: ordinary media provision; Y3: post-test score for the experimental group; Y4: post-test score for the control group.

3.2 Participants

Sixty Indonesian EFL learners from rural schools were the subjects of this research. Twenty-eight women and 32 men participated in the study. The researchers used purposive sampling to determine the participants in their studies. Since the researcher was unaware of the students' levels, the EFL teacher at the site picked the sample. Non-probability sampling was chosen as a sample for this study. Researchers instructed English teachers to pair up classes of about equal competence levels. Thirty students from each of the two classes—the experimental and the control classes—were required for the study's sample size.

3.3 Instrument

The vocabulary test was employed in this study as the instrument. Researchers offered participants 30 minutes to complete the items test. There are 25 multiple-choice questions with four possible answers, namely A, B, C, and D. In this investigation, 20 of 25 questions were eligible for the vocabulary test. Researchers utilized twenty questions for the vocabulary test. Cronbach Alpha was used to determine the level of test reliability. The time limit for each exam for EFL learners was 30 minutes. The pretest and post-test consisted of twenty multiple-choice questions. Both the experimental and control groups are asked to complete a series of the pretest. Post-test was provided after treatment.

3.4 The Test Validity and Reliability

The researcher ensures the test's content and items are legitimate and reliable to establish its dependability. Researchers then gave students a standardized test comprised of multiple-choice questions. The test results revealed that twenty of the twenty-five items were valid for the final analysis. Cronbach Alpha was used to estimate the consistency of the test (Taherdoost, 2018). The Cronbach Alfa is one way to measure the strength of that consistency. First, researchers found an r-value and matched it to the Cronbach Alfa range to determine the degree of reliability of this study. The Cronbach Alfa ranges from 0 to 1.00, with values close to 1.00 indicating very high consistency (Lund & Winke, 2008). The Cronbach alpha output in the study showed 0.811, which means that the level of reliability is very high.

3.5 Procedure

The study was carried out for three weeks. This research activity included the provision of pretests, treatments, and post-tests in each experiment and control class. At each meeting, researchers take 90 minutes to carry out the research procedure. The research was conducted face-to-face in schools. Pretest questions were given to each experiment and control class at the first meeting before the researchers provided treatment. Then, the researcher asked the EFL learners to come forward, explaining the material and treatment methods to be used. In the second and third meetings, researchers treated each group using Hangman games as a medium for the experimental class and using conventional media in the control class. In implementing the treatment in the experimental group, the researcher explained the material and divided them into six groups. Next, the researcher wrote down a few words that were scrambling. Students have the remaining word letters and are instructed to make their best guesses. If the group answered the wrong note, the researcher would draw a line until it looked like someone was hung up and lost the game.

Meanwhile, the treatment used in the control group was that the researcher explained the material and divided them into five groups. Each group was asked to search for difficult words in a book corresponding to the material. Then, researchers translated difficult words and asked them to memorize them. In addition, researchers opened a question and answered session at the end of each meeting in experimental and control classes. After each class had received treatment, the post-test was conducted at the final meeting.

3.6 Data Analysis

The hypothesis testing was conducted by an independent samples t-test with JASP software. The homogeneity of the data was determined using the Levine test. The Shapiro-Wilk test was utilized to determine the normality of the data. Researchers also used the N-gain test (Hake, 1998; Meltzer, 2002) to measure the hangman game treatment's effectiveness in improving EFL learners' vocabulary acquisition.

4. Results

4.1 Normality and Homogeneity

Students in both groups (treatment and control) are assessed at the start and finish of the study to see whether or not there are statistically significant differences in vocabulary acquisition between the two time periods. The normalcy, homogeneity, and research hypotheses are also tested by comparing the pre-and post-test results. Table 4 displays the outcomes of the test homogeneity and normality.

Table 2: Test normality with Shapiro-Wilk

	Scores	
	Experiment	Control
Valid	30	30
Shapiro-Wilk	0.959	0.945
P	0.296	0.121

Table 2 shows the outputs of a normality test, the Shapiro-Wilk P-value, which indicates that the experimental group had a significantly higher score (0.296) than the control group (0.121). Given that both the control and experimental groups' post-test normality significance levels were more than 0.05, we can confidently say that both classes' data distributions are normally distributed.

Table 3: The results of Levine's test for homogeneity

F	df1	df2	P
0.018	1.000	58.000	0.894

Table 3 showed that the results of Levine's test for homogeneity were 0.894 or were higher than the significant level of 0.05.

4.2 The Output of an Independent Sample T-Test

This research was based on two hypotheses. First, EFL learners who were provided offline pedagogical hangman games had better EFL vocabulary acquisition than those who were provided conventional media. Second, offline pedagogical hangman games effectively affect EFL learners' vocabulary acquisition. The following table presents the output of an independent sample t-test.

Table 4: The output of an independent sample t-test

	T	Df	P	Cohen's d
Score	7.268	58	< .001	1.877

According to Table 4, the Independent Sample T Test yielded a T value of 7.268, a Df value of 58, and a p-value of less than 0.001. The effect size was 1.877. In conclusion, P is less than $0.001 < 0.05$. It showed that playing offline pedagogical hangman games significantly impacts the vocabulary acquisition of EFL learners. To understand the outputs of the results, the researchers provided descriptive plots for the independent sample t-test.
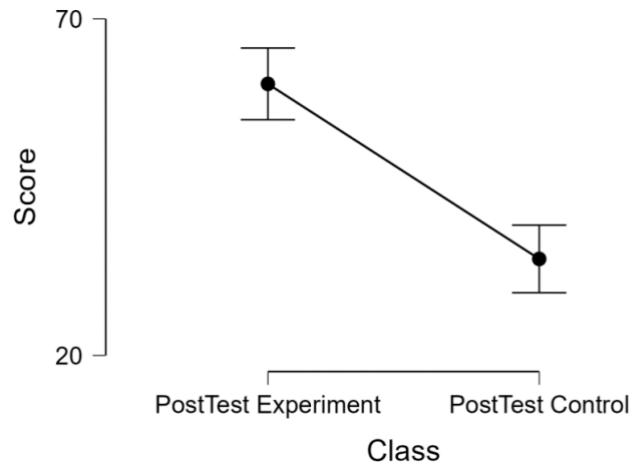
Score

Figure 1: Descriptive plots for Independent Sample T-Test

4.3 Analysis of N-Gain

The N-gain test was applied to evaluate the efficiency of the learning procedure. The N-gain criterion follows the guidelines of Hake (1998), as presented in Table 5.

Table 5: of interpretation of effectiveness N-gain

Normalized Gain Index	Classification
(g) ≥ 0.70	High
0.30 ≤ (g) ≥ 0.70	Medium
(g) < 0.30	Low

The n-gain test above describes if the result of the means score is less than 30, the data is low or less effective. The data is moderate or effective if the average score is 30 to 70. If the result is more than 70, the data is very effective. The N-gain test criterion is in line with Hake (1998) as in table 5. Researchers calculated data from both groups in table 6 below.

Table 6: N- Gain score

	N Gain	
	Experiment	Control
Valid	30	30
Mean	0.444	0.043
Std, Error of Mean	0.033	0.025
Std. deviation	0.182	0.139

Table 6 showed that the average N-gain score in the experimental class was 0.444, or it could be said to be 44.4%, the std deviation was 0.182, and the average std error was 0.033. In the control group, the average score of N-gain was 0.043 or 4.3%, the Std deviation was 0.139, and the average std error was 0.025. From the average score, researchers got 0.444 in the experimental group and 0.043 in the control group. Based on the N-gain effectiveness interpretation table, if the score is between 0.30 to 70, it means moderate or effective, and if the score is less than 0.30, it means low or less effective. Thus, it was concluded that the offline pedagogical Hangman games as media effectively increase EFL learners' vocabulary acquisition.

5. Discussion

The results showed a significant difference between vocabulary learning using offline pedagogical hangman games as the instructional media and those using conventional media. This is in line with previous researchers who stated that by using instructional media, teachers and students could participate more actively in the teaching-learning process (Ahmed, 2020; Özer et al., 2018). Previous studies have also stated that media can help teachers develop students' self-confidence so that learning is more active, practical, realistic, and engaging (Ajoke, 2017; Akinbadewa & Sofowora, 2020). Especially for EFL learners, the role of learning media can help students develop critical awareness. Students are more enthusiastic about creating and innovating because they think learning is fun (Graves et al., 2020).

In the EFL learning process, the role of vocabulary is significant in theory and practice (Boyinbode, 2018; Sampebua et al., 2020). It is because vocabulary is the main factor in learning a language, especially in learning EFL (Ghaemi, 2017). Meanwhile, Atifnigar (2020) revealed that vocabulary learning is one of the biggest problems in language learning. Because vocabulary is the core of a language, EFL teachers should provide exciting and practical strategies to overcome these problems (Aravind & Rajasekaran, 2020).

Based on previous research, EFL students are less interested in learning English, especially vocabulary (Iaremenko, 2017). According to previous research, the teacher only explains the subject and then gives assignments (Helma & Jufriadi, 2020). This is supported by the statement of Sinaga et al. (2020), which states that many EFL teachers have difficulty teaching. One of the causes of this problem is the lack of vocabulary, which causes EFL learners to find it challenging to memorize vocabulary and lazy to learn (Sihaloho et al., 2017). Another reason is that EFL learners are less motivated to learn EFL, so the vocabulary mastered is only a little (Altun & Khdhir, 2022; Iaremenko, 2017). Therefore, appropriate methods and techniques in the teaching and learning process are considered very important.

One exciting learning media or strategy is games (Iaremenko, 2017; Kargbo, 2017; Rahmasari, 2021). Pedagogical Hangman offline game is one of the games that utilize images. Some researchers have previously argued that using images is one of the most influential media for EFL learners. They consider using images to make class conditions more conducive (Müller-Brauers et al., 2020; Oktarina et al., 2020; Pushpanathan, 2017; Toor, 2020). However, when students grow into teenagers, the average of them tends to get bored with the media. Several previous researchers supported this statement, who said that images are very suitable for teaching young learners (Lubis, 2018; Perger & Major, 2018). Therefore, the researchers in the study assumed that choosing hangman games offline is an alternative pedagogical medium to teach English vocabulary to EFL learners.

EFL learners can enrich their vocabulary while playing happily and excitingly (Tlili et al., 2021). One of the communicative games in teaching vocabulary is the Hangman game (Kuning & Rohaina, 2021). Previous researchers who supported this statement explained that Hangman Game is one of the most fun guessing games (Munikasari et al., 2021; Nazmi et al., 2021). So EFL teachers can use hangman games as an innovative strategy in teaching vocabulary. The goal is to significantly improve students' ability to master vocabulary and motivate students in teaching and learning (Domanski, 2019; Manan, 2018).

In this study, researchers used pedagogical Hangman games offline and developed them according to the conditions and needs of EFL learners at the research site. It is intended to support using Hangman games for EFL learners in remote areas where internet connections are difficult to reach. However, some previous researchers stated that digital-based games are very suitable today (Lustek et al., 2019; Tlili et al., 2021). EFL learners can significantly utilize many electronic media, such as computers and mobile phones, to improve their vocabulary (Ansarin et al., 2017; Har et al., 2019; Rahman & Angraeni, 2020). It is supported by various types of digital games that can be used to teach vocabulary (Lube & Nuraeni, 2020; Tanasy, 2019; Wu et al., 2020). However, if used too often, digital games can interfere with physical and mental health. In addition, media dangers from digital can also result in digital amnesia or easy forgetting (Hamzi et al., 2021).

Previous studies have shown various strategies for playing the Hangman game (Domanski, 2019; Munikasari et al., 2021). In their research, Nazmi et al. (2021) highlighted the Hangman-Hangaroo Game as an example of one such game that may be played online. Researchers previously stated that Hangman games could only be played if two players were in them (Domanski, 2019). Based on the studies mentioned earlier, we can deduce that the Hangman game is an effective tool for enhancing vocabulary, particularly for EFL students. By playing this game, EFL learners are more interested in learning EFL and changing their view of EFL learning. It can prevent students from feeling bored and become an alternative medium for EFL teachers. In other words, Hangman games are effectively used in teaching vocabulary, especially to EFL learners

6. Conclusion and Suggestions

The results revealed that EFL learners who use the pedagogical hangman game as instructional media have higher achievements than regular learning. The application use of the pedagogical Hangman game positively impacts EFL learners in learning vocabulary. EFL learners gain a lot of vocabulary unconsciously by learning while playing pedagogical Hangman offline games. So, the students can understand the meaning of these words and get a few words quickly. In addition, the pedagogical hangman game can help EFL teachers teach and learn. Learning using a pedagogical hangman game makes the classroom more active, practical, and interactive. EFL learners can feel excited and increasingly interested in learning EFL while playing. However, researchers found problems when carrying out the study. The class becomes so crowded during learning that it can interfere with other classes.

This happened because of the enthusiasm of EFL learners when participating in the game. Therefore, this pedagogical Hangman offline game can be a solution to overcome this. So that learning can be more effective and not interfere with other classes. In addition, with this study being held, researchers hope that EFL teachers will no longer be confused about finding media to teach. The primary goal here is to pique the interest of and get more students in rural areas excited about learning English as a foreign language.

Researchers also hope future research can develop pedagogical hangman offline games into even more exciting games for EFL learners. In addition, researchers hope that researchers can then create a digital hangman application without an internet connection. It is intended to teach EFL learners through the free digital hangman application at home.

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