The Effect of Word Search Puzzle Games on the Vocabulary of Sixth-Grade Students

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Abstract:

This study investigates the impact of using word search puzzle games as a learning medium on the vocabulary mastery of sixth-grade students at SDN Lantek Timur 2. The research employed a pre-experimental design with a one-group pre-test and post-test model. The results revealed a significant improvement in students' vocabulary, as evidenced by an increase in the mean score from 54.00 in the pre-test to 82.00 in the post-test. The paired sample t-test showed a significance value of 0.000, indicating a statistically significant difference. Therefore, the word search puzzle game proves to be an effective and engaging tool for enhancing vocabulary skills among elementary school students.

Keywords: Word search puzzle, vocabulary mastery, game-based learning, English education, Elementary students

Introduction

Vocabulary is one of the most essential aspects in learning English, especially at the elementary school level. In Indonesia, English is not the native language, and most students face difficulties in mastering vocabulary, which becomes a major barrier in developing other language skills such as reading, speaking, writing, and listening. This issue is evident at SDN Lantek Timur 2, where students demonstrate low enthusiasm and performance in English vocabulary due to limited learning media and monotonous teaching methods.

In the Indonesian primary school curriculum, English is introduced to develop students' basic communicative competence, with vocabulary learning as one of the primary objectives. However, many students face challenges in retaining and recalling new words due to the lack of engaging learning

strategies. Traditional vocabulary teaching methods, which often rely on rote memorization and textbook drills, may fail to sustain students' motivation, especially for young learners who typically respond better to interactive and playful activities. As a result, there is a need for innovative teaching techniques that not only help students remember words but also make the learning process enjoyable.

Game-based learning has been widely recognized as an effective approach to enhance student engagement and facilitate language acquisition. Among the various types of educational games, word search puzzles have gained popularity for their simplicity, accessibility, and potential to reinforce vocabulary in an enjoyable way. In a word search puzzle, students are required to locate and identify words hidden in a grid of letters. This activity can stimulate students' visual recognition, spelling accuracy, and memory retention, while also providing repeated exposure to target vocabulary in a low-anxiety setting. Previous studies have shown that word search puzzles can improve vocabulary recall and promote learner autonomy by encouraging independent practice.

Despite the growing evidence of the benefits of educational games, research on the use of word search puzzles in Indonesian primary school contexts remains limited, especially in rural settings such as SDN Lantek Timur 2. Many studies focus on secondary or tertiary education, while relatively few investigate how such games affect younger learners' vocabulary acquisition in elementary schools. Therefore, it is important to explore the application of word search puzzle games as a learning medium to determine their effectiveness for sixth-grade students, who are at a critical stage of consolidating their basic vocabulary before entering junior high school.

Based on these considerations, this research aims to investigate the effect of word search puzzle games on the vocabulary mastery of sixth-grade students at SDN Lantek Timur 2. It is expected that the findings will contribute to the development of more engaging vocabulary learning strategies for elementary school students and provide teachers with practical insights into integrating simple but effective games into their English language instruction.

Ideally, students at the elementary level should be able to understand and use Basic English vocabulary effectively, both in oral and written contexts. Mastery of vocabulary allows students to participate actively in English learning and supports their communication skills. According to Nation (2024), vocabulary mastery is not only about knowing the meaning of words but also about understanding their usage in various contexts.

However, the reality at SDN Lantek Timur 2 shows a clear gap between expected vocabulary mastery and students' actual performance. Many students struggle to remember words, spell them, or apply them in sentences, which leads to disinterest and a lack of motivation in learning English. To overcome this issue, the use of engaging and interactive learning media is highly recommended.

Review of Literature

One such media is the Word Search Puzzle Game, which allows students to learn vocabulary in a fun and challenging way. Research by Manurung (2020) and Ambiyatul (2018) shows that the use of word search puzzles can effectively improve vocabulary acquisition and increase student motivation. Therefore, this study aims to examine the effect of word search puzzle games on the vocabulary mastery of sixth-grade students at SDN Lantek Timur 2.

Vocabulary Learning in Young Learners

Vocabulary is a core predictor of later literacy and overall language achievement. For primary students, growth in breadth (how many words) and depth (how well words are known: form, meaning, use) underpins reading comprehension and productive skills (Nation, 2001; Schmitt, 2010). Young learners benefit from high-frequency, multimodal, and meaning-focused exposure supported by teacher scaffolding and repetitive practice (Cameron, 2001; Nation & Webb, 2011). Typical barriers include low motivation for rote learning, limited opportunities for retrieval, and weak form–meaning mapping—challenges that playful activities can address.

A robust lexical entry integrates three different schemes: first, form (spoken/written; spelling patterns/phoneme–grapheme links), second,

meaning (denotation, associations), and use (collocation, grammar, pragmatics) (Nation, 2001; Laufer & Goldstein, 2004). In primary contexts, form and meaning are initial priorities, with gradual enrichment of use. Tasks that repeatedly bind orthography to meaning (e.g., seeing/locating the word and then using it) accelerate orthographic mapping—the process by which written forms become instantly recognizable (Ehri, 2014).

Game-based Learning and Language

Systematic reviews indicate that GBL can boost engagement and support measurable language gains when activities are aligned to explicit learning goals and include feedback (Hwang & Wu, 2012; Plass, Homer, & Kinzer, 2015). In vocabulary learning, paper-and-pencil games (crosswords, word searches) are cost-effective, easy to differentiate, and well-suited to large classes (Uberman, 1998; Nation, 2001). Digital variants can add immediate feedback and data tracking, but are not essential for the benefit.

Although simpler than communicative games, word searches contribute to early vocabulary outcomes via:

- Form–Meaning Mapping: Repeated visual exposure to target spellings while the teacher links each found item to images, L1 glosses, or example sentences.
- Orthographic Familiarity: Detection of letter sequences reinforces spelling accuracy and visual word recognition speed.
- Low-Anxiety Practice: Clear goals and rapid successes reduce fear of error, encouraging participation.
- Attention to Form: Hidden-word detection entails careful scanning, which can be leveraged to highlight phonics/affixes (e.g., *re-*, *-tion*). For stronger depth, teachers should extend each found word to meaning/use activities (sentence making, categorization, mini-dialogues), avoiding a 'find-and-forget' effect.

Word search puzzle intervention → (a) increased attention to form & orthography, (b) repeated retrieval and spaced exposure, (c) higher situational interest & participation → improved vocabulary (primarily recognition/recall;

with extension tasks, gains in controlled production). Contextual factors (teacher scaffolding, session frequency, class size) moderate effects.

Prior literature supports the mechanisms through which word searches can aid vocabulary, especially for form recognition and initial meaning mapping. However, evidence on effect sizes for primary EFL learners in Indonesian classrooms—and on transfer to productive use—remains limited. Your study addresses this gap by testing a structured word-search program with follow-up use tasks among sixth-graders at SDN Lantek Timur 2, providing data on both recognition/recall and early productive outcomes.

Method

This study used a pre-experimental design with a one-group pre-test and post-test model. The research was conducted at SDN Lantek Timur 2 in Bangkalan Regency, involving 20 sixth-grade students as participants. The aim was to measure the effectiveness of Word Search Puzzle Games in improving students' vocabulary mastery. The research process began with a pre-test to assess the students' initial vocabulary knowledge, followed by two treatment sessions using word search puzzle activities, and concluded with a post-test to measure learning outcomes.

The instruments used in this research were vocabulary tests administered before and after the treatment. The treatment consisted of two 2x45-minute learning sessions using word search puzzles related to vocabulary material such as nouns and verbs. During the treatment, students were engaged in reading short texts, identifying new vocabulary, and completing puzzle tasks based on the words from the text.

Results and Discussions

This study aims to determine the effect of Word Search Puzzle Games on the vocabulary mastery of sixth-grade students at SDN Lantek Timur 2. Data were collected through pre-test and post-test given before and after the treatment. The data were analyzed using SPSS version 25 to identify whether there was a significant difference between the two test results.

Before the treatment, students were given a vocabulary test to determine their initial ability. The results showed that many students had difficulties in vocabulary mastery, particularly in recognizing word meaning and usage. The following table presents the descriptive statistics from both the pre-test and post-test.

Table 1.

Descriptive Statistics of Students' Scores

Table 4.1

Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
air 1	re- test	4.0000	5 0	14.65390	3.27671
	ost test	2.0000	8 0	21.17595	4.73509

As shown in Table 1, the mean score increased significantly from 54.00 to 82.00 after the treatment. This suggests that the students' vocabulary mastery improved following the use of Word Search Puzzle Games.

To determine whether the improvement was statistically significant, a paired sample t-test was conducted. The test results are presented in the following table.

Table 2.

Result of Paired Sample T-Test

Table 4.3 Paired Sample Test							
Paired Difference							
		St d. Er ro r	95% Confidence Interval of the Difference				Si g. (2 ta il e d)
ean	Mean				T f		
			Lo we r		1		
				1			
				(			
				1			
a	6 2	.	- 40			- 5	.0 0
r 8.00000 1	2 7	7 9	.2 98 42 8			7 1	0

Based on Table 2, the significance value is 0.000, which is lower than α = 0.05. This result confirms that there is a significant difference between students' pre-test and post-test scores, indicating that the Word Search Puzzle Game had a positive effect on students' vocabulary mastery.

These findings are supported by research conducted by Manurung (2020), who found that Word Search Puzzle Games increased students' vocabulary acquisition. Ambiyatul (2018) also emphasized that such games help students recognize spelling patterns and improve retention. Moreover, the use of this game in the classroom fostered a more engaging and enjoyable learning environment. Students who have consistently supported her in completing this research.

Conclusion

Based on the findings and analysis, it can be concluded that the use of Word Search Puzzle Games has a significant and positive effect on students' vocabulary mastery. The average score of students increased from 54.00 in the pre-test to 82.00 in the post-test, indicating notable improvement after the treatment. The paired sample t-test also confirmed a significant difference, with a Sig. (2-tailed) value of 0.000, which is less than 0.05. This proves that the Word Search Puzzle Game is effective in supporting vocabulary learning, especially for sixth-grade students at SDN Lantek Timur 2. Furthermore, the game created a more engaging and enjoyable learning experience, which increased students' motivation and participation in the classroom. Therefore, Word Search Puzzle Games can be considered an effective alternative media

for teaching vocabulary in elementary education settings.

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