THE EFFECT OF CROSSWORD PUZZLE GAME TO THE STUDENTS' READING SKILL AT GRADE EIGHT OF SMP SWASTA TELADAN PEMATANG SIANTAR

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Abstract

This research explores the impact of utilizing crossword puzzle games as a teaching tool to enhance reading skills, specifically focusing on vocabulary development, among eighth-grade students at SMP Swasta Teladan Pematang Siantar. The study adopts a quasi-experimental quantitative design with a total population of 40 students in the eighth grade. Both the experimental and control groups were subjected to different teaching methods, with the experimental group exposed to crossword puzzle game instruction while the control group received traditional instruction. Vocabulary tests, encompassing synonym and antonym identification through multiple-choice questions, were administered as pre-tests and post-tests for both groups. The findings revealed a substantial increase in the mean score of the experimental group, from 43 in the pre-test to 76.60 in the post-test, compared to the control group's mean score of 42.75 in the pre-test and 67.5 in the post-test. Statistical analysis, employing T-test and t-table values, indicated a significant effect of the crossword puzzle game on reading skills, particularly in vocabulary, among eighth-grade students at SMP Swasta Teladan Pematang Siantar.

Keywords: Crossword Puzzle, Reading, Skill, Vocabulary

1. INTRODUCTION

A language is a system of written symbols and sounds that people in a certain nation or region use to communicate when they talk, write, and engage in other activities. Language has always been essential to human communication. Language is a system of sound symbols used for social communication that evolved from human speech. Wibowo (2001) defines language as an arrangement of customary and arbitrary symbols that, when combined with a tool, make meaningful and articulate sound and are used by a group of individuals to communicate in order to give rise to feelings and ideas. People and language are inextricably linked. Humans can communicate with one another and convey their thoughts and feelings through language. It implies that language is a tool for thought, emotion, and action. Good language will have accurate pronunciation. Because human language must be produced, practiced, and trained in order to effectively interact with others, it is extremely special and complex.

Students may need to grasp the four fundamental language abilities in order to speak English well. They are engaging in speaking, writing, listening, and reading. In addition, they must acquire a variety of language skills, including grammar, pronunciation, and vocabulary. Without their support, it is impossible to master those skills. Out of the four abilities that students need to acquire, reading is the most crucial. Reading is a never-ending process of guesswork, according to Grellet (1981), and what one brings to the next

is frequently more significant than what one discovers in it. Students should be taught to use their prior knowledge to comprehend unfamiliar content when reading. The process of reading involves interpreting written symbols and translating them into words and sentences. Understanding is influenced by reading goals, context, text type, and the reader's techniques and background. However, many students struggle with reading skills due to teachers using repetitive approach and neglecting to prioritize reading practice. Some teachers are unaware of the need to improve reading comprehension. Students have difficulties with reading comprehension due to limited vocabulary and unclear words in the text. This makes it hard for them to understand important details, such as the topic and references. Additionally, they lack the necessary techniques for comprehending the text. The instructor's use of traditional teaching methods exacerbates the issue, and the students also struggle with pronouncing words correctly.

Based on the general problem of reading that happened in the student's lesson, the problem happened in one of the schools in Pematang Siantar where after researchers did practice at school, namely at the SMP Swasta Teladan Pematang Siantar. The researchers focused on reading difficulties of eighth-grade students at SMP Swasta Teladan Pematang Siantar. The students struggled with limited vocabulary, difficulty understanding the text, and an inability to recognize key details. The researchers found that the students lacked effective comprehension strategies and were not being taught using modern teaching methods. Additionally, they had difficulty pronouncing words correctly. The researchers were particularly interested in the students' vocabulary problem, as it was a common issue in their reading and learning process. Even after reading and discussing a text about invitations, the students still struggled to use their own words and express their ideas effectively.

**Table 1. The Score of Reading skill on the Final Test
in SMP Swasta Teladan Pematang Siantar**

Score	Total	MMC	Percentage	Information
80-100	4	75	20%	**Complete (35%)**
70-79	3	75	15%	
41-69	8	75	40%	**Not Completed (65%)**
40<	5	75	25%	
Total	**20**		**100%**	

Source: Class VIII teacher SMP Swasta Teladan Pematang Siantar

According to the minimum requirements for grade eight students at SMP Swasta Teladan Pematang Siantar, they need to score 75 in order to pass the English subject. However, during the researchers's teaching practice at the school, it was found that only 35% of students achieved this score in the reading skill assignment. The majority of students scored between 40-60, while some scored below 40. This data indicates that the students' overall achievement in learning English is low. The main reasons for their low scores are their difficulty in expressing their ideas, limited vocabulary, and inability to understand the meaning of words in the English texts they read.

There are various teaching methods and tools available for educators, but not all of them are effective for students. Some examples of these tools include mixed stories,

flashcards, sentence identification games, riddles, and word cards. It is important for teachers to consider the unique characteristics of young learners and not rely solely on textbooks when teaching English. Media can play a significant role in the teaching and learning process, as it can help students enjoy learning and improve their understanding of new vocabulary. According to Mateer & Linda (2018), the main purpose of using media is to engage students, increase their knowledge, motivate their interest in the subject, and provide an overview of the relevance of various concepts.

Crossword puzzles are popular tool in reading instruction. They involve filling in letters to create words or phrases based on clues. Crossword puzzles are often in the shape of square or rectangle and are effective in engaging students and helping them practice vocabulary and sentence structures. Many teachers have already used crossword puzzles with positive results, as they encourage students to think critically and improve their language skills. Due to the limited vocabulary and reading comprehension abilities of students, the researchers suggest using crossword puzzles to enhance their vocabulary and writing skills.

Prior research has examined the effects of crossword puzzle games on students' reading skills. Widyasari (2010) focused on using crossword puzzles to improve vocabulary mastery among high school students. Utami (2014) explored the use of crossword puzzles as a guessing game to enhance vocabulary achievement among eight-year-old students. The findings showed that crossword puzzles helped students improve their vocabulary knowledge. Zahara (2018) used an experimental research design to determine how crossword puzzles could enhance comprehension skills. The results showed that using crossword puzzles to teach reading comprehension had a positive impact on students' reading abilities.

The primary aim of this research is to investigate the potential of crossword puzzle games as effective teaching tools for reading, building upon the previously presented rationale. Given the inherent entertainment value and educational benefits of crossword puzzles, particularly in enhancing vocabulary, the researchers are motivated to explore their role in improving the reading skills of eighth-grade students. The focus lies on the ability of crossword puzzles to facilitate word recall and encourage proper word writing among students. If substantiated, this approach stands to furnish educators with a dynamic tool to enhance students' reading proficiencies, thereby enhancing the pedagogical landscape in the academic milieu.

2. LITERATURE REVIEW
2.1. Reading Skill

Reading is the act of understanding written symbols and giving them meaning. It is an active process that requires concentration and focus on a specific objective. The main goal of reading is to comprehend content, which involves reflecting on past knowledge and using techniques, themes, and textual cues to interpret words. All three components of reading are equally important. Argawati (2014) states that reading is a process where readers try to understand the message that the researchers is conveying using written language or words. It is important for students to use their prior knowledge to comprehend new material, whether it is complex ideas or simple language.

Harmer (2007) suggests that reading is beneficial for language learning, as long as students understand what they are reading. Simply flipping through pages is not enough; it requires reflection, revisiting certain aspects, and placing the information within a larger context. Readers often have questions about the content, and by seeking answers, they can learn even more. Similar to Harmer's idea, the more someone reads, the better they become at it, leading to improvements in vocabulary, spelling, and writing skills. According to Pebri Ila Rachma (2014), reading involves both a physical and mental process. To understand text, students need to use various cognitive abilities and actions. They must be able to recognize words and read them in order to comprehend the material. Recognition and comprehension are the two key steps in the reading process, as students need to be able to identify words and understand their meanings.

According to Barron(2017), reading involves a person's interaction with symbolic information. Symbolism is a tool used by researchers to convey ideas indirectly. It adds depth to their work and is also used in everyday life. Texts, such as written or printed materials, are examples of symbolic information with a physical structure. The research states that reading involves comprehending written words or symbols and using this skill to recognize, understand, and interpret information. It also helps to infer implied meanings and expand vocabulary. These findings are based on various studies mentioned earlier.

2.2. Crossword Puzzle

Wahyuningsih in Njoroge et al. (2013) defines a crossword puzzle as a game where words are guessed and placed into a grid of white and black squares. Crossword puzzles are popular and can be found in various forms such as newspapers, magazines, books, and smartphone apps. Crossword puzzles were originally created as an educational tool by Arthur Wynne. They have a long history and are now the most popular word game worldwide. They originated in England in the 19th century and were inspired by word squares. In the US, they became a popular pastime for adults, with the first published crossword puzzle created by Arthur Wynne in 1913. American newspapers started featuring crossword puzzles in the 1920s, and they became more standardized. Cryptic crosswords gained popularity in Europe, particularly in Britain, with D.S. Macnutt and A.F. Ritchie establishing guidelines for these puzzles. Students enjoy crossword puzzles as they help them learn new words and improve their vocabulary. They are engaging and challenging, requiring individuals to use their brains to find solutions.

According to Cruz in Jaramillo et al. (2012), using crossword puzzles in classroom helps students develop skills such as collective decision making, improving relationships, developing interest, retaining knowledge, thinking critically, and increasing vocabulary. McKeachie in Jaramillo et al. (2012) states that playing games such as crossword puzzles allows students to participate, make decisions, solve problems, and learn from the consequences. Additionally, Olivares in Jaramillo et al. (2012) believes that crossword puzzles can help people enhance their professional skills and increase their self-esteem. Franklin in Orawiwatnakul (2013) said that this could enhance students' motivation and excitement for subject. Moore and Dettlaff in Orawiwatnakul (2013) stated that crossword puzzles should be used alongside other methods to make learning enjoyable, rather than being relied on as sole method.

Based on the given definition, crossword puzzles are brain-training games where words are placed in boxes based on clues. These games are suitable for people of all ages, especially school children. Clues can be hinting words or text, and the answers are written in the provided boxes. The researchers in this research used instructions with text, finding synonyms and antonyms to determine the answers.

2.3. Previous Research

There are several previous research that related to this research, including the research by Khaedar & Alam (2023), Melasari et al. (2019), Ratnawati (2012), Rochmadhoni (2022), Siddik (2022), Utami (2014) Widyasari (2010) and Zahara (2018). Their research found that crossword puzzles could improve students' vocabulary mastery and increased their participation in class. The students became more engaged and their reading achievement also improved. Crossword puzzle games effectively expanded students' vocabulary and significantly influenced their motivation to study. Overall, the use of crossword puzzles had a significant impact on students' vocabulary achievement.

3. RESEARCH METHODS

This research used quantitative research methods to investigate the effect of crossword puzzle game on students' reading skills, specifically in vocabulary. The researchers employed a quasi-experimental design, which involved giving assignments to participants without assigning them to specific groups. The research took place in a class of eighth-grade students at SMP Swasta Teladan Pematang Siantar. Pre- and post-tests were conducted to ensure the validity of the results. The participants were divided into two groups: the experimental group, which received instruction using the crossword puzzle game, and the control group.

3.1. Population and Sample

Suen & Ary (2014) define a sample as a group chosen for a study out of the entire population. There are two classes overall in class VIII, each with forty students. Scientists employed a deliberate sampling method. Purposive sampling, according to Sugiyono (2018), is data sample method that is predicated on specific factors. The researchers chose this class based on the following reasons, both classes have almost the same abilities and interests in learning English, meaning that these students are neither good nor bad, especially in reading skill. Furthermore, there are just two classes in class VIII, totaling forty students. Two classes are selected, one to serve as the control group and the other as the experimental group. The control group is made up of those who don't play the crossword puzzle game, receive no additional therapy, or are managed regularly. The group that uses the crossword puzzle game or receives treatment is known as the experimental group. A sample of two classes, VIII-A and VIII-B, was taken. VIII-A serves as the control class, whereas VIII-B is the experimental class in the main class.

This research focused on population of grade eight students at SMP Swasta Teladan Pematang Siantar during the academic year 2022-2023. The researchers chose this population because they had previous experience interning at the school. The population consisted of all students from SMP Swasta Teladan Pematang Siantar in the 2022/2023 academic year, divided into two classes with total of 40 students. According to Suen &

Ary (2014), sample refers to selected group from whole population for research purposes. The sample were selected from population using purposive sampling, specifically choosing two classes with similar abilities and interests in learning English. Sugiyono (2018) defines purposive sampling as a data sampling technique based on specific criteria. One class served as control group, while the other class served as the experimental group.

3.2. Technique of Analyzing Data

This research examined the use of dependent and independent variables. The dependent variable is a quality or attribute that is influenced by an independent variable (Creswell & Creswell, 2017). The independent variable is variable that impacts dependent variable. In this research, the independent variable was Crossword puzzle, and dependent variable was reading comprehension of eighth-grade students' vocabulary. Instruments are tools that are used to collect and analyze quantitative data. John (2014) suggests using specific questions and potential answers as a way to prepare for research. In this research, pre- and post-tests were used to gather data on students' reading skills, specifically focusing on their vocabulary accuracy and choices. Following data collection, the researchers conducted the following procedures in data analysis, including scoring tets, finding mean score, standard deviation, standard error of mean difference, and testing hypothesis by using formula of Hatch & Farhady (1982).

The adoption of mean score, standard deviation, and hypothesis testing within the data analysis framework underscores a rigorous quantitative approach in the research design. The mean score serves as a pivotal measure of central tendency, offering insights into the average performance of eighth-grade students in the context of vocabulary comprehension impacted by the independent variable, Crossword puzzle. The incorporation of standard deviation enhances the analytical depth by elucidating the dispersion or variability around the mean, providing a nuanced understanding of the distribution of scores. Furthermore, the utilization of hypothesis testing indicates a commitment to ascertain the statistical significance of observed differences, albeit the specific test employed remains unspecified. This methodological choice reflects a meticulous and systematic approach to investigate the influence of the independent variable on the dependent variable within the nuanced realm of eighth-grade students' reading comprehension and vocabulary acquisition.

4. RESULTS AND DISCUSSION

A test with twenty multiple-choice questions was used to collect the data. The experimental group received instruction in vocabulary through crossword puzzles, while the control group received traditional instruction. Both groups took the same pre-test and post-test. The researchers used a specific method to analyze the student scores.

4.1. Data Analysis

The research involved twenty eighth-grade students from SMP Swasta Teladan Pematang Siantar. The students used crossword puzzle game to learn vocabulary in descriptive texts. Pre- and post-tests were conducted, and the results were analyzed. The

research found that using crossword puzzles as teaching medium was effective in improving reading skills and vocabulary.

Table 2. Data of Experimental Class

No	Initial	Pre-test (X_1)	$(X_1)^2$	Post-test (X_2)	$(X_2)^2$	Range
1	ADP	60	3600	70	4900	10
2	AZ	45	2025	60	3600	15
3	AS	65	4225	75	5625	10
4	CN	80	6400	100	10000	20
5	DM	20	400	80	6400	60
6	DS	50	2500	70	4900	20
7	IN	35	1225	75	5625	40
8	JS	50	2500	75	5625	25
9	JTS	40	1600	65	4225	25
10	KCPD	50	2500	70	4900	20
11	MGS	55	3025	90	8100	35
12	MKTS	30	900	75	5625	45
13	MRS	75	5625	100	10000	25
14	SP	50	2500	70	4900	20
15	SOS	40	1600	100	10000	60
16	SWS	5	25	45	2025	40
17	WS	15	225	70	4900	55
18	YVKN	20	400	75	5625	55
19	YAP	40	1600	80	6400	40
20	ZD	35	1225	55	3025	20
	N = 20	$\sum X_1 = 860$	$\sum X_1{}^2 =$	$\sum X_2 = 1.500$	$\sum X_2{}^2 =$	**640**
	Mean	$X_1 = 43$	44.100	$X_2 = 76.60$	116.400	**32**

Table 3. Data of Control Class

No	Initial	Pre-test (X_1)	Post-test (X_2)	Range
1	AICP	40	70	30
2	AP	55	70	20
3	ARN	35	50	15
4	AZS	70	75	5
5	AS	40	55	15
6	CVAS	20	65	45
7	CSS	85	70	15
8	DKMS	40	65	25
9	FAS	20	40	20
10	IRS	30	65	35
11	JRS	35	75	40
12	KFN	25	55	30
13	KYS	80	90	10
14	MVT	55	75	20
15	NA	45	80	35

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16	RRS	30	80	50
17	SRS	20	85	65
18	TON	80	70	10
19	VDP	25	75	50
20	KLS	25	70	45
N = 20		$\sum X_1 = 855$	$\sum X_2 = 1.350$	**270**
Mean		$X_1 = 42.75$	$X_2 = 67.5$	**10.8**

Table 4. The Variance and Standard Deviation in Post-Test of Experimental Class

No	Initial	Score (X_2)	Mean ($\overline{X}$)	Difference ($X_2 - \overline{X}$)	Difference Squared ($X_2 - \overline{X}$)^2
1	ADP	70	76.60	-6.6	43.56
2	AZ	60	76.60	-16.6	275.56
3	AS	75	76.60	-1.6	2.56
4	CN	100	76.60	23.4	547.56
5	DM	80	76.60	3.4	11.56
6	DS	70	76.60	-6.6	43.56
7	IN	75	76.60	-1.6	2.56
8	JS	75	76.60	-1.6	2.56
9	JTS	65	76.60	-11.6	134.56
10	KCPD	70	76.60	-6.6	43.56
11	MGS	90	76.60	13.4	179.56
12	MKTS	75	76.60	-1.6	2.56
13	MRS	100	76.60	23.4	547.56
14	SP	70	76.60	-6.6	43.56
15	SOS	100	76.60	23.4	547.56
16	SWS	45	76.60	-31.6	998.56
17	WS	70	76.60	-6.6	43.56
18	YVKN	75	76.60	-1.6	2.56
19	YAP	80	76.60	3.4	11.56
20	ZD	55	76.60	-21.6	466.56
			$\sum (X_2 - X)^2 = \sum d^2 = 3531.2$		

The total square of the post-test for the experimental class was 3531, as shown in Table 4. To calculate the post-test standard deviation for experimental class and compare it with the control class's post-test findings, these points were necessary.

Variance in Post-test of Experimental Class:

$$\sigma^2 = \frac{N.(\sum X_2{}^2) - (\sum X_2)^2}{N^2}$$

$$\sigma^2 = \frac{20(116400) - (1500)^2}{20^2}$$

$$\sigma^2 = \frac{2328000 - 2250000}{400}$$

$$\sigma^2 = \frac{78000}{400}$$

$$\sigma^2 = \frac{195}{}$$

$$\sigma = \sqrt{195} = 13.96$$

The standard deviation of the post-test in the experimental Class:

$$S^e = \sqrt{\frac{\sum d^2}{N-1}} = \sqrt{\frac{3531.2}{20-1}} = \sqrt{\frac{3531.2}{19}} = 13.63$$

Table 5. The Variance and Standard Deviation in Post-Test of control class.

No	Initial	Score (X_2)	Mean ($\overline{X}$)	Difference ($X_2 - \overline{X}$)	Difference Squared ($X_2 - \overline{X}$)^2
1	AICP	70	67.5	2.5	6.25
2	AP	70	67.5	2.5	6.25
3	ARN	50	67.5	-17.5	306.25
4	AZS	75	67.5	7.5	56.25
5	AS	55	67.5	-12.5	156.25
6	CVAS	65	67.5	-2.5	6.25
7	CSS	70	67.5	2.5	6.25
8	DKMS	65	67.5	-2.5	6.25
9	FAS	40	67.5	-27.5	756.25
10	IRS	65	67.5	-2.5	6.25
11	JRS	75	67.5	7.5	56.25
12	KFN	55	67.5	-12.5	156.25
13	KYS	90	67.5	22.5	506.25
14	MVT	75	67.5	7.5	56.25
15	NA	80	67.5	12.5	156.25
16	RRS	80	67.5	12.5	156.25
17	SRS	85	67.5	17.5	306.25
18	TON	70	67.5	2.5	6.25
19	VDP	75	67.5	7.5	56.25
20	KLS	70	67.5	2.5	6.25
			$\sum (X_2 - X)^2 = \sum d^2 = 2775$		

Based on data presented in Table 5, the control class's post-test total squared was 2572. This was necessary in order to compute the post-test standard deviation for the control group and compare it with the experimental group's post-test data.

4.1.1. Variance in Post-test of Control Class:

$$\sigma^2 = \frac{N.(\sum X_2{}^2) - (\sum X_2)^2}{N^2}$$

$$\sigma^2 = \frac{20(97950) - (1380)^2}{20^2}$$

$$\sigma^2 = \frac{1959000 - 1904400}{400}$$

$$\sigma^2 = \frac{54600}{400}$$

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$\sigma^2 = 136.5$

$\sigma = \sqrt{136.5}$ = 14.68

4.1.2. The standard deviation of the post-test in the control group:

$S^c = \sqrt{\dfrac{\sum d^2}{N-1}} = \sqrt{\dfrac{2775}{20-1}} = \sqrt{\dfrac{2775}{19}}$ = 9.08

4.1.3. Standard error of the difference of mean:

$SE(X_e - X_c) = \sqrt{\left(\dfrac{S_e}{\sqrt{N_e}}\right)^2 + \left(\dfrac{S_c}{\sqrt{N_c}}\right)^2}$

$SE(X_e - X_c) = \sqrt{\left(\dfrac{14.63}{\sqrt{20}}\right)^2 + \left(\dfrac{9.08}{\sqrt{20}}\right)^2}$

$SE(X_e - X_c) = \sqrt{\left(\dfrac{214.0369}{4.472}\right) + \left(\dfrac{82.4464}{4.472}\right)}$

$SE(X_e - X_c) = \sqrt{\dfrac{296.4833}{4.472135955}}$

$SE(X_e - X_c) = 4.03$

4.1.4. Data Analysis Using T-Test Formula

The utilization of the T-test formula was employed to determine the profound influence of employing crossword puzzles as pedagogical tool on enhancing students' reading skill.

$t_{test} = \dfrac{X_e - X_c}{SE(X_e - X_c)}$

$t_{test} = \dfrac{76.60 - 67.5}{4.03}$

$t_{test} = \dfrac{9.1}{4.03}$

$t_{test} = 2.258$

The researchers computed the degree of freedom (df) using the formula below after obtaining the t-test result of 2.258 :

$$Df = (N_e + N_c - 2) = 20 + 20 - 2 = 38$$

The t-table value was 1,686 and the t-test was 2.258. The following hypothesis was developed since the null hypothesis was rejected if the t- value exceeded the t-table pertaining to this :

t-value > t-table of 5%

2.258 > 1,686

The findings reveal that utilizing crossword puzzle games as a medium for enhancing reading skills, particularly in vocabulary acquisition through synonyms and

antonyms, has significant effect on eighth-grade students at SMP Swasta Teladan Pematangsiantar.

4.2. Findings

Based on the data analysis, the researchers found that the reading skills of eighth-grade students at SMP Swasta Teladan Pematang Siantar had considerably increased when they used crossword puzzle game. Here are the outcomes:

1. The research found that students who used crossword puzzle game to learn performed better than those who used traditional method. The results showed that mean score on pre-test for experimental group was 43, compared to 42.75 for the control group. After intervention, mean score on post-test for control group was 67.5, while experimental group scored mean of 76.60. The size of experimental group was 116,400, while control group had 1350 participants. The standard deviation of scores for experimental was 13.63 on pre-test and 13.96 on post-test, while control group had standard deviations of 8.02 and 9.08, respectively. Overall, it was found that experimental group performed better on the tests compared to the control group.

2. On post-test, students in both control and experimental groups showed improvement, with the experimental group making greater progress. The average improvement between the two groups was 5.892 points. The experimental group's mean scores increased from 43 on the pre-test to 76.60 on the post-test, while the control group's scores increased from 42.75 to 67.5. Overall, the mean improvement on post-test for the entire was 5.5.

3. A statistical test was conducted with df of 38 and a significance level of 5%. The calculated t-value was 2.258, which was greater than the critical t-value of 1.686. This means that the hypothesis being tested, which suggests that using crossword puzzles as learning tool for eighth-grade students improves their test results, is supported. As a result, the null hypothesis was rejected and the alternative hypothesis was accepted.

4.3. Discussion

The researchers conducted research to explore the positive influence of incorporating crossword puzzle games into media on students' reading abilities, particularly in vocabulary (synonyms and antonyms). Multiple-choice tests were administered to measure the impact. The data were then evaluated using the t-test. In comparison to students who did not use crossword puzzle ($x2=1350$), who had total mean of 67.5, crossword puzzle game users scored higher ($x2=1500$) with an average total mean of 76.60. The students' vocabulary (synonym and antonym) reading skills are demonstrated by the average of their pre- and post-test results.

The researchers used crossword puzzle games to enhance students' comprehension of descriptive text with synonyms and antonyms. They analyzed pre-test and post-test scores using a t-test, yielding a result of 2.258. With 38 degrees of freedom, they compared this result to a t-table and found it to be higher, leading to the acceptance of the alternative hypothesis and rejection of the null hypothesis. This suggests that employing crossword puzzle games as a teaching tool positively affected students' scores.

After analyzing the data, the researchers finally found the answer to the issue, which was to ascertain the value of crossword puzzle games in terms of vocabulary, particularly

synonym and antonym. This was shown by mean scores in the control class (67.5) and the experimental class (76.60). Researchers concluded that (Ha) was acceptable since t-value > t-table, specifically 2.258 > 1,686. The crossword puzzle game significantly affects students' reading skills. In control group, the students did not receive any treatment during the learning process. They were taught synonyms and antonyms using the traditional method, which was not effective in helping them understand descriptive literature. Because they struggled with reading and vocabulary, they did not enjoy learning. In the experimental group, the researchers used crossword puzzle to teach synonyms and antonyms. The students enjoyed this method and were able to use the game to learn and solve problems from their lessons. This increased their motivations, especially for vocabulary and reading.

Using crossword puzzle games as a teaching method can enhance students' reading comprehension, particularly their vocabulary. The use of crossword puzzles led to improved grades compared to those who did not use that. After analyzing the data, the researchers concluded that incorporating crossword puzzle games into instruction is more effective in enhancing eighth-grade students' reading skills, specifically their vocabulary, at SMP Swasta Teladan Pematangsiantar.

Previous research conducted by researchers, including Khaedar & Alam (2023), Melasari et al. (2019), Ratnawati (2012), Rochmadhoni (2022), Siddik (2022), Utami (2014) Widyasari (2010) and Zahara (2018), have shown that utilizing crossword puzzles in education can enhance students' vocabulary skills, increase their involvement in class, boost their engagement, and improve their reading achievements. These findings indicate that crossword puzzles are effective tool for expanding students' vocabulary and motivating them to study, leading to significant improvements in their vocabulary achievement.

5. CONCLUSION

The research findings suggest a significant positive impact of employing crossword puzzle games as a teaching tool on eighth-grade students' reading comprehension. The observed improvements in reading comprehension, increased student participation, broadened vocabulary, and enhanced effectiveness in acquiring synonyms and antonyms underscore the multifaceted benefits of integrating crossword puzzles into the educational curriculum. The statistical analysis, as indicated by the T-test results surpassing the critical value at the 5% significance level, provides empirical support for the rejection of the null hypothesis (Ho) and acceptance of the alternative hypothesis (Ha). This confirms that using crossword puzzle games provides tangible benefits, fostering an engaging and effective learning environment for eighth-grade students.

In light of these compelling findings, it is recommended that educators consider to incorporate crossword puzzle games in teaching to enhance reading comprehension and vocabulary acquisition. Furthermore, this positive impact suggests broader applications for interactive tools in language education, encouraging educators to diversify interactive activities for comprehensive language acquisition. Additionally, future research could delve deeper into the specific aspects of crossword puzzle games that contribute to these

positive outcomes, allowing for more targeted and refined pedagogical strategies in language education.

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