

The Effectiveness of Crossword Puzzle and Word Chain Game in Teaching Vocabulary at MTs Al-Islam Joresan, Ponorogo

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ARTICLE INFO	ABSTRACT
<p>Article History: Received: July 11, 2024 Revised: August 12, 2024 Accepted: September 13, 2024</p> <p>Keywords: crossword puzzle, word chain game, teaching vocabulary</p>	<p>This study examines the effectiveness of crossword puzzles and word chain games in teaching vocabulary at MTs Al-Islam Joresan, Ponorogo, highlighting the importance of vocabulary in learning English as a foreign language (EFL). The primary research question is whether students taught using crossword puzzles and word chain games have better vocabulary mastery than those not taught using these games. A quasi-experimental design with pre-tests and post-tests was used, involving an experimental group (taught with crossword puzzles and word chain games) and a control group (not taught with crossword puzzles and word chain games). The results showed that students taught with crossword puzzles and word chain games had better vocabulary mastery. The interactive nature of these tools helped students learn and retain new vocabulary more effectively. Analysis of test scores and student feedback confirmed the effectiveness of these media, highlighting the importance of interactive activities in language instruction to enhance learning and academic success.</p>
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INTRODUCTION

Education plays a fundamental role in the development and progress of a society. Enhancing the quality of education has a significant impact on both individual and societal growth. In the current era of rapid information technology advancement, the education sector faces significant challenges in optimally utilizing digital resources in the learning process. One of the most notable developments in this context is the use of educational games, which can be presented in various formats, ranging from online to offline.¹

Vocabulary, or the treasury of words, plays a crucial role in the process of learning English.² The ability to understand, remember, and use various words forms the foundation for effective communication. As one advances in expanding their vocabulary, they become capable of expressing ideas, emotions, and thoughts more precisely and richly. The importance of vocabulary becomes very clear when engaging in everyday conversations or formal situations such as presentations, interviews, or writing.³ A broad vocabulary provides the confidence to speak fluently and construct coherent sentences. Furthermore, good vocabulary comprehension allows us to better understand reading materials and listen more attentively. The process of building vocabulary can be undertaken through various means, including reading books, articles, and news in English (Utami, 2021; Tumengkol, 2022). Additionally, participating in conversations with native speakers or fellow English learners provides opportunities to apply learned words.

By enhancing vocabulary, one can also develop better writing skills.⁴ The right choice of words provides clarity and precision in conveying ideas, making written expressions more persuasive and convincing. Essentially, building vocabulary is not just about memorizing words but also about understanding, associating, and using them correctly. This is a crucial step toward comprehensive and impressive English language mastery.

One form of entertainment available on various devices is offline games. For children, offline games can serve as useful learning tools or media. When educational features are activated, they can assist children in the learning process while maintaining their focus on positive play activities, achieving a dual goal of learning through offline games.⁵ Various offline games can enhance students' English skills, such as Scrabble, Word Search, Hangman, Crossword Puzzle, Word Chain Game, Boggle, Story-Based Games, Board Games, Role-Playing Games, and Puzzle Games. The choice of games depends on the students' skill level, but consistent play can improve their English proficiency in a fun way.

¹ Ningsih, Ni Luh Ayu Budi Hari. "The Importance of Game-Based Learning in English Learning for Young Learners in the 21st Century." *The Art of Teaching English as a Foreign Language*, 4 (1). (2023): 25-30.

² Khan, Raja Muhammad Ishtiaq, et al. Learners' Perceptions on WhatsApp Integration as a Learning Tool to Develop EFL Vocabulary for Speaking Skill. *International Journal of Language Education* 5 (2). (2021): 1-14

³ Hoynes, Clara & Egan, Suzanne M. Shared Book Reading in Early Childhood: A Review of Influential Factors and Developmental Benefits. *An Leabhbh Og*, 12(1). (2019): 77-92.

⁴ Suryadi, suryadi, et al. The Use of Banten Folklore and Vocabulary Mastery on The Students' Narrative Text Writing Skill. *Ethical Lingua* 9 (1) (2022): 107-114

⁵ Solares, Analiza S. "VOGPro (Vocabulary Offline Gamification Program) and the Academic Vocabulary Skills of Grade 12 Students of Kalanawe II National High School." *International Journal of Open-Access, Interdisciplinary & New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)* 2. (2023): 923-933.

One of the most popular and engaging games is Crossword Puzzle and Word Chain Game. These games not only entertain but also actively engage children in critical thinking and problem-solving. Crossword Puzzle is a type of word puzzle that requires players to fill empty squares with words corresponding to given clues, necessitating creative and analytical thinking, as well as the ability to connect various concepts and knowledge. Crossword puzzle is a type of word puzzle that requires players to fill in blank squares with words that fit the given clues, necessitating creative and analytical thinking, as well as the ability to connect various concepts and knowledge.⁶ By improving cognitive reserves, regular engagement in crossword puzzle can help maintain brain health and slow the decline of cognitive function in adults vulnerable to such conditions. Therefore, the use of crossword puzzle is not only beneficial in an educational context but also holds the potential to enhance brain health and overall quality of life.⁷ Meanwhile, Word Chain Game tests children's ability to form words from given letters, requiring players to use their language skills to find the correct words within a set time. Word chain game not only offers enjoyment in playing but also serves as a beneficial exercise for the development of language skills and creative thinking abilities. This is why the game remains popular and entertaining for various demographics, including children and adults alike.⁸

This study aims to evaluate the effectiveness of using offline games, specifically Crossword Puzzle and Word Chain Game, in improving elementary school students' English vocabulary skills. Additionally, this research seeks to explore students' perceptions and attitudes towards using these offline games in learning English. This is important because the use of engaging offline educational games can motivate students to learn English and improve their skills comprehensively.

This research is expected to make a significant contribution to the development of innovative and engaging English teaching methods. The findings of this study can assist teachers and educational practitioners in designing and implementing more effective teaching strategies by utilizing offline games, specifically Crossword Puzzle and Word Chain Game, to enhance students' English vocabulary mastery. Furthermore, the results of this research can serve as a reference for further studies in the field of using technology and games in English learning.

Several previous studies have explored the benefits of using offline games in learning English. Solares (2023) investigated the effectiveness of the "VOGPro" (Vocabulary Offline Gamification Program) in improving students' academic vocabulary skills.⁹ The study

⁶ Kasor, Anisah. "The Influence Of Using Crossword Puzzle Towards Students' Vocabulary Mastery At The Second Semester Of The Seventh Grade Of Smpn 24 Bandarlampung In The Academic Year Of 2017/2018". *A Thesis Raden Intan State Islamic University Lampung* (2018): 1-220

⁷ Patrick, Shilpa, et.al. The Usefulness of Crossword Puzzle as a Self-Learning Tool in Pharmacology. *JAMP: Journal of Advance in Medical Education and Professionalism* 6(4), (2018): 181-185

⁸ Ramadani, Wahyuni, et.al. The Influence of Word Chain Game on Increasing the Eight Grade Student's Vocabulary at MTS Barana Jenepono. *English Language Teaching for EFL Learners*, Vol 2 (1). (2020): 1-11

⁹ Solares, Analiza S. "VOGPro (Vocabulary Offline Gamification Program) and the Academic Vocabulary Skills of Grade 12 Students of Kalanawe II National High School." *International Journal of Open-Access, Interdisciplinary & New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)* 2. (2023): 923-933

demonstrated that offline games could significantly enhance students' vocabulary mastery. Additionally, Suryadi et al. (2022) examined the use of Banten folktales and vocabulary mastery in improving students' narrative writing skills.¹⁰ Their findings indicated that enriched vocabulary could enhance students' writing abilities.

Although previous research has revealed the benefits of offline games in learning English, there is still a gap in the literature evaluating the specific effectiveness of using Crossword Puzzle and Word Chain Game. This study aims to fill this gap by systematically investigating the impact of using these offline games on junior high school students' English vocabulary improvement.

RESEARCH METHOD

The study employs a quasi-experimental design, involving pre-tests and post-tests to measure the impact of the interventions. The participants consist of two groups: the experimental group, which receives instruction incorporating crossword puzzle and word chain game, and the control group, which follows conventional teaching methods. Data collection techniques include standardized tests or custom-designed assessments to measure vocabulary skills. Researchers can also observe students as they engage using crossword puzzles and word chain games, documenting their interactions and progress. The data analysis techniques in this study involve using statistical methods to address the research questions. The researcher employs SPSS for Windows to conduct a normality test to determine if the data follows a normal distribution. Additionally, the homogeneity test is used to verify whether sample groups have similar variances, utilizing SPSS Statistics for Windows. For hypothesis testing, inferential statistics are applied, involving the formulation of null and alternative hypotheses, followed by a significance test using the Independent Sample T-test.

RESULT AND DISCUSSION

Result

In this research, researcher use two groups, control class and experimental class. In the experimental class, researcher use crossword puzzle and word chain game in teaching student vocabulary, and in control class the researcher taught vocabulary without using these media or the researcher taught vocabulary just using conventional method. The researchers used pretests and posttests in both classes to determine whether crossword puzzles and word chain games are effective for teaching vocabulary or not. After conducting research, both in the control class and the experimental class, the data results can be concluded as follows:

1. Normality Test

The normality test is a procedure used to ascertain whether data originates from a population with a normal distribution or exhibits patterns within a normal spread. The researcher used SPSS for Windows for normality test. The calculation result is as follows:

¹⁰ Suryadi, suryadi, et al. The Use of Banten Folklore and Vocabulary Mastery on The Students' Narrative Text Writing Skill. *Ethical Lingua*, 9 (1) (2022): 107-114

Table 1. Normality Testing Result

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	Df	Sig.
Hasil	PretestControl	.155	28	.085	.932	28	.069
	PosttestControl	.150	28	.106	.958	28	.310
	PretestEksperimen	.151	29	.091	.952	29	.207
	PosttestEksperimen	.139	29	.159	.958	29	.298

a. Lilliefors Significance Correction

In this study, the formula used to test the normality of data was the Kolmogorov-Smirnov because the sample was <30 for each class. If the value greater than 0.05 the data is theoretically normal. If it less than 0.05, the data deviates significantly from the normal distribution.

Based on the table above showed that the sig for Pretest Control class is 0.085. It can be concluded that the data of this research was normal because the value was higher than 0.05. Next, the Sig for Posttest Control class is 0.106. It can be concluded that the data of this research was normal because the value was higher than 0.05. Next, the Sig for Pre-test eksperimental class is 0.091. It can be concluded that the data of this research was normal because the value was higher than 0.05. And last, the Sig for Post-test eksperimental class is 0.159. It can be concluded that the data of this research was normal because the value was higher than 0.05.

2. Homogeneity Test

The homogeneity test is a statistical procedure aimed at demonstrating that two or more groups of sample data originate from populations with similar variances. This step aids in demonstrating the consistency or similarity of variability among these groups. The researcher used the program SPSS Statistics for Windows to calculate the homogeneity test.

The calculation result is as follows:

Table 2. Homogeneity Testing Result

		Test of Homogeneity of Variance			
		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	.341	1	55	.562
	Based on Median	.426	1	55	.517
	Based on Median and with adjusted df	.426	1	53.760	.517
	Based on trimmed mean	.380	1	55	.540

Based on the above homogeneity test table, shows the data is 0.540. We can conclude that the data variation is homogeneous because the value of statistic is the highest ($0.540 > 0.05$)

3. Hypotesis Test

Following the test for normality and homogeneity, researchers proceeded to test the hypothesis. Researcher used the T-test to analyze data with SPSS Statistic for Windows. The calculation result of the data is as follow:

Table 3. Hypotesis Testing Result

Group Statistics					
	Kelas	N	Mean	Std. Deviation	Std. Error Mean
HasilBelajar	ControlClass	28	72.57	5.834	1.102
	ExperimentClass	29	84.00	6.761	1.256

Independent Samples Test										
	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
HasilBelajar	Equal variances assumed	.341	.562	-6.822	55	.000	-11.429	1.675	-14.786	-8.071
	Equal variances not assumed			-6.840	54.329	.000	-11.429	1.671	-14.778	-8.079

From the table above shown that the experiment class and the control class consist of total of 57 students. The mean score of the control class was 72.57, while the mean score of the experimental class was 84.00. It can be concluded that there is a difference in the mean scores of students after the test between the control class and the experimental class. Independent Sample Test table above, shown that the value of Sig. (2-tailed) is 0.000 which is $0.000 < 0.05$. According to the decision-making criteria in the Independent sample T-Test formula ("If the Sig. (2-tailed) is < 0.05 , then H_0 is rejected and H_a is accepted. If the Sig. (2-tailed) is > 0.05 , then H_0 is accepted and H_a is rejected."), it can be confirmed that H_0 is rejected and H_a is accepted. This implies that there is significant difference in vocabulary mastery between students at Mts Al-Islam Joresan, Ponorogo who are taught using crossword puzzle and word chain game compared to those who are not taught using these media.

Discussion

In April 2024, researcher visited MTS Al-Islam Joresan to request permission to conduct a study spanning three sessions. The researchers conducted pretest and posttest

activities in both the experimental and control classes. In the experimental class, the researcher taught children's vocabulary using crossword puzzle and the word chain game, while in the control class, the researcher taught vocabulary without using these media or the researcher taught vocabulary just using conventional method.

By conducting these activities, the researcher aims to determine whether students who are taught using crossword puzzle and word chain game have better vocabulary mastery compared to those who are not taught using these media at MTs Al-Islam Joresan Ponorogo. The following are the hypotheses formulated by the researcher:

H₀= There is no significant difference in vocabulary mastery between students at Mts Al-Islam Joresan, Ponorogo who are taught using crossword puzzle and word chain games compared to those who are not taught using these media.

H₁= There is significant difference in vocabulary mastery between students at Mts Al-Islam Joresan, Ponorogo who are taught using crossword puzzle and word chain game compared to those who are not taught using these media.

From the calculation above, the result of this research that the value of Sig. (2-tailed) is 0.000 which is $0.000 < 0.05$. it can be confirmed that H₀ is rejected and H_a is accepted. This implies to the conclusion that there is a significant difference in vocabulary mastery between students at Mts Al-Islam Joresan, Ponorogo who are taught using crossword puzzle and word chain game compared to those who are not taught using these media. These findings suggest that crossword puzzle and word chain game are effective learning media for teaching vocabulary at MTs Al-Islam Joresan, Ponorogo. This game has been proven to enhance players' critical thinking and vocabulary skills, as explained by Dwi Nur Hadiyansah S. Wijaksono, and Ainun Habiba Ramadani Siddik (2022) in their study on crossword puzzles. According to them, crossword puzzles not only increase vocabulary knowledge but also train the brain to think more logically and systematically in solving problems. By combining elements of challenge and education, this game offers dual benefits: entertainment and learning. As a result, players not only enjoy their time playing but also experience significant improvements in cognitive abilities.¹¹ This is also in line with the statement by Wahyuni Ramadani, Wahyuddin Naro, and Nur Aliyah Nur (2020) about the word chain game. The word chain game not only offers enjoyment in playing but also serves as a beneficial exercise for the development of language skills and creative thinking abilities. Word chain games assist students in remembering and internalizing the vocabulary they learn. By repeatedly practicing the use of these words within the game context, new vocabulary becomes easier to recall and remains ingrained in students' minds for longer periods.¹²

Based on the two theories above and the results of the research conducted by researchers at MTs Al-Islam Joresan, it can be concluded that crossword puzzles and word chain games are effective in teaching students' vocabulary.

¹¹ S.Wijaksono, Dwi Nur Hadiyansah, & Siddik, Ainun Habiba Ramadani. The Effectiveness of Using Crossword Puzzle Games Through Student's Vocabulary Mastery. *JOEY: Journal of English Ibrahimy*, 1(1). (2022): 1-10

¹² Ramadani, Wahyuni, et.al. The Influence of Word Chain Game on Increasing The Eight Grade Student's Vocabulary at MTS Barana Jeneponto. *English Language Teaching for EFL Learners*, Vol 2 (1). (2020): 1-11

CONCLUSION

The study investigated the effectiveness of using crossword puzzle and word chain game in teaching vocabulary at MTs Al-Islam Joresan, Ponorogo. The researcher conducted research at MTs Al-Islam, encompassing pre-tests and post-tests for both control and experimental classes, implementing crossword puzzle and word chain game in the experimental class. Subsequent analysis concluded that these media effective for teaching vocabulary. The study highlighted a notable disparity between students utilizing these interactive media and those not exposed to them, demonstrating the efficacy of crossword puzzle and word chain game in improving vocabulary acquisition.

The result from this research is the students who are taught by using crossword puzzle and word chain game get a better score of the students' post-test from the experimental class (84) is higher than the control class (72,57). The results of this research are also evident in the outcomes of the Independent Sample T-Test, the result of this research that the value of Sig. (2-tailed) is 0.000 which is $0.000 < 0.05$. it can be confirmed that H_0 is rejected and H_a is accepted. This study shows that teaching vocabulary using crossword puzzle and word chain game can increase student's vocabulary mastery.

The researcher, after drawing conclusions from the research findings, provides several recommendations for students, teachers, schools, and readers to enhance vocabulary learning using crossword puzzles and word chain games. Students are encouraged to actively engage in learning, explore various media, and practice consistently. Teachers should incorporate interactive activities and maintain effective communication with students. Schools should offer professional development for teachers and provide necessary facilities. Lastly, the researcher invites readers to offer constructive suggestions to improve the study.

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