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The Use of Chain Spelling Game to Improve Students' Vocabulary Mastery at The 7th Grade of SMP Muhammadiyah Ajakkang

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Abstract

This study investigates the effectiveness of the chain spelling game in improving vocabulary skills among 7th-grade students at SMP Muhammadiyah Ajakkang and evaluates their perceptions of its effectiveness. A pre-experimental design was employed with a sample of 11 students selected through total sampling. The primary instrument for data collection was a vocabulary test, and the data were analyzed using SPSS version 27. The results indicated a significant improvement in the average vocabulary score from the pre-test (39.54) to the post-test (65.45). -7.42, with 10 degrees of freedom (df), and the p-value is less than 0.001 ($p < 0.001$), confirming that the chain spelling game positively impacted students' vocabulary mastery. The paired sample t-test analysis showed a mean score difference of 33.68, reflecting a substantial improvement in students' scores after the intervention. The standard deviation of (11.57) and the standard error of the mean (3,49) indicate individual differences and the reliability of the results. The 95% confidence interval for the mean difference ranged from (39.54) to (65.45), suggesting the improvement is statistically significant. In conclusion, the chain spelling game proved to be an effective and engaging tool for enhancing vocabulary skills, providing an interactive and enjoyable method for improving students' language proficiency.

Keywords: English Learning Strategy; Chain Spelling Game; Vocabulary Mastery

INTRODUCTION

Vocabulary is an essential aspect of English language learning that should be given priority (Daskalovska, 2014; Sadikin & Martyani, 2020; Uiphanit et al., 2020). It is important for educators to be creative in selecting and adapting instructional materials that will capture students' attention and foster their interest in learning new words (Jeliseh & Gilakjani, 2022; "The use of chain spelling game to improve student's vocabulary mastery at the 7th grade of SMP Muhammadiyah Ajakkang," 2023; Zhang & Graham, 2020). A wide vocabulary knowledge enables learners to understand and convey their feelings in the target language. A strong vocabulary foundation allows students to participate in conversations and express themselves clearly both in speech and writing (Schmitt, 2019; Yawiloeng, 2020). Despite its importance, acquiring vocabulary can be difficult, especially when considering other aspects of language such as pronunciation and grammar. Effective communication is built on language, and language itself relies heavily on vocabulary (Megawati et al., 2023; Schmitt & Schmitt, 2020; Wang, 2005). Therefore, building a solid vocabulary is crucial in learning English, as mastering a foreign language entails developing various skills. Nufus (2019) emphasizes that without a strong command of vocabulary and efficient strategies for acquiring new words, students often fail to reach their full potential and may lose interest in opportunities to practice the language, such as listening to the radio, interacting with native speakers, using the language in various contexts, reading, or watching television. In schools, numerous obstacles continue to exist in teaching and learning English, as the language differs considerably from Indonesian in aspects like structure, vocabulary, and pronunciation (Krepel et al., 2021; Newton, 2020). For

example, students frequently forget the meanings of words they've encountered in prior lessons. Typically, vocabulary is taught through memorization. For educators, creating an effective and engaging English learning environment is a challenging task. Consequently, English teachers must be adept at organizing their teaching methods. They need to present the material using suitable techniques and strategies. Effective teaching methods aid students in understanding and mastering the content in class. Similar to other subjects that require appropriate techniques, teaching English involves particular methods and strategies. However, memorizing vocabulary can be monotonous and disengaging for some students. The conventional methods used to teach vocabulary may seem repetitive, leading students to disengage, as they primarily focus on memorizing verb forms, nouns, adjectives, and adverbs. This study explored the challenges seventh-grade students face in writing vocabulary, as many still make frequent errors when writing English words and sometimes have difficulty pronouncing them correctly. To address these challenges, teachers need to employ specific strategies to improve students' vocabulary understanding. One useful method is to incorporate engaging teaching techniques that capture students' attention and increase their motivation to learn. One such technique is the use of chain spelling games in the classroom. In this research, the researcher applied chain spelling games as a teaching strategy. This activity is widely used by educators to support vocabulary development. As explained by Ellis (2023), spelling activities activate cognitive functions like recall and association, which help students retain vocabulary. For example, the sequence could be: Love, Eat, Tea, Apple, Ear, Room, Monkey. The main goal of this game is to reinforce students' vocabulary mastery. Ellis (2023) explains that chain spelling games engage cognitive processes such as recall and association, which help students retain vocabulary. This method is also effective for boosting memory. In the game, students take turns providing words that start with the last letter of the previous word, requiring them to quickly recall words and thus exercise their memory. Additionally, they must remember the order of the words to avoid repeating any. Regularly playing the chain spelling game can improve students' memory and enhance their ability to retrieve and connect words, ultimately strengthening their cognitive skills.

Conversely, the researcher held a short interview with an English teacher from the school where the research is set to occur. Based on the interview with the English teacher of the seventh grade, students at SMP Muhammadiyah Ajakkang encounter difficulties in learning English, especially when it comes to understanding vocabulary. The students frequently forget words from their vocabulary lists, lose interest quickly, and become disengaged in class. Many have trouble remembering the meanings of words they've learned, and they feel hesitant and anxious about making mistakes while speaking or writing English. Additionally, their academic performance is generally poor, with most students receiving average or below-average marks. According to the teacher, many students still struggle with vocabulary writing. The teacher highlighted the importance of employing effective teaching methods that can capture students' focus during lessons. Many researchers have proposed that games are a great way to engage students, and earlier studies have demonstrated that chain spelling games can effectively capture students' attention and enhance their vocabulary skills.

While several studies have explored the importance of vocabulary in English language learning and various methods to enhance it, a gap remains in terms of the application of interactive techniques, such as the chain spelling game, in vocabulary acquisition, particularly in the context of junior high school students. Previous research has highlighted the effectiveness of games and playful activities in increasing student engagement and improving memory retention (Ellis, 2023; Jeliseh & Gilakjani, 2022), but specific studies examining the impact of chain spelling games on vocabulary mastery in 7th-grade students are limited.

Moreover, existing literature often focuses on the role of vocabulary acquisition in higher levels of language proficiency or adult learners, leaving a gap in understanding how young learners,

specifically those at the 7th-grade level, can benefit from such methods. Studies that explore vocabulary acquisition strategies tend to overlook how game-based learning techniques influence both the cognitive aspects of language retention and students' perceptions of learning English. While chain spelling games have shown promise in different contexts, their targeted application in improving writing, pronunciation, and overall vocabulary mastery in secondary school students remains under-researched. Therefore, this study aims to fill this gap by assessing the effectiveness of chain spelling games as a method for enhancing vocabulary mastery in 7th-grade students at SMP Muhammadiyah Ajakkang, Barru.

The researcher aims to examine whether chain spelling games can be an effective method for enhancing vocabulary acquisition among elementary school students. The primary research question guiding the study is: "Can chain spelling games significantly improve vocabulary mastery among 7th-grade students at SMP Muhammadiyah Ajakkang?"

This research intends to explore if chain spelling games contribute to better vocabulary understanding in 7th-grade students. The goal is to assess whether this method can be an effective learning strategy for junior high students. The outcomes of this study may provide insights to refine teaching techniques and vocabulary instruction, ultimately benefiting 7th-grade learners at SMP Muhammadiyah Ajakkang in Barru.

METHOD

In this study, the researcher employed a pre-experimental design, which establishes the necessary conditions to examine cause-and-effect relationships. This design helps determine how one variable affects another. To assess vocabulary proficiency before and after the treatment, students took a pre-test to evaluate their vocabulary skills and a post-test to measure improvement following the spelling game intervention. The researcher implemented a pre-test, treatment, and post-test. Below is an illustration of the pre-test and post-test design for a single group.

Pre-Test	Treatment	Post-Test
X1	O	X2

X1 = Pre-Test
O = Treatment
X2 = Post-Test

Research Participant

The research took place at SMP Muhammadiyah Ajakkang, selected because many students in the school had limited experience with English and were just starting to learn it. The participants were seventh-grade students from class VII, who were at a beginner level in their English skills. This class was chosen as the focus of the study because it offered a representative group of students encountering English as a new language. The class consisted of 11 students, with 6 boys and 5 girls.

Technique of Data Collection

To collect data for the study, the researchers applied both observation and assessment methods. Initially, they identified suitable participants and obtained their consent (Creswell, 2012). An observation checklist was employed to systematically record various classroom behaviors and student actions that could impact the learning process. Additionally, a test was administered to evaluate students' comprehension of the material. Field notes were also kept as a reflective tool, allowing the researchers to document and adjust the teaching techniques used during the study (Burns, 2010).

Instruments of Data Collection

The data collection instruments used in this study included test questions and an observation sheet. A test serves as a tool to measure knowledge through questions, commands, and instructions provided to the participants, prompting them to respond accordingly. The students were given a multiple-choice test consisting of 20 questions designed to assess their English vocabulary proficiency. In addition, the observation sheet was created by compiling a checklist of activities that focused on student engagement, interaction, and activity levels during the Chain Spelling Game.

Data analysis

To assess the students' vocabulary mastery, the researcher follows this procedure:

1. **Assessing Vocabulary Knowledge**
   In vocabulary learning, assessment plays a crucial role. According to Nurgianto (2001), the goal of assessment is to evaluate how well students understand the material that has been taught. Research instruments are used for this purpose. Arikunto (2011) mentions that objective tests, including true-false questions, multiple-choice, matching, and fill-in-the-blank tests, are commonly used. In this system, correct answers receive 5 points, while incorrect answers are given 0 points.

Table 1. Criteria of Mean Score (Heaton, 1990)

Students' score	Category	Qualification
80-100	A	Good to excellent
60-79	B	Average to good
50-59	C	Poor to average
0-49	D	Poor

2. Test

Scoring the students vocabulary test answer:

$$\text{Score} = \left(\frac{\text{Student's Correct Answers}}{\text{Total Points}}\right) \times 100$$

3. Calculating the test result of vocabulary mastery

The researcher used the SPSS 27 edition to calculate the percentage and mean score of the students' vocabulary test at once the pre-test and post- test were determined.

RESULTS AND DISCUSSION

Results

The researcher assessed the scores in the pre-test, post-test, and questionnaire. The purpose of this assessment was to compare students' performance before and after the treatment. In addition, the questionnaire was used to gather students' perceptions. The collected data was then analyzed statistically, and the findings are presented below.

1. **VocabularybTestbResults**
   In this section, the researcher presents the results of the vocabulary test conducted before and after the treatment.

a.**Pre-test**

During the pre-test, the researcher calculated the number of correct answers from the students to assess their understanding of the vocabulary list. Additionally, the researcher used SPSS 27 to statistically calculate the pre-test scores. The results of the students' pre-test scores are as follows:

Table 2. Students' Vocabulary Pre-Test Score

No.	Students	Pre-Test	Status
1	Student 1	75	Average to good
2	Student 2	35	Poor
3	Student 3	30	Poor
4	Student 4	55	Poor to average
5	Student 5	35	Poor
6	Student 6	25	Poor
7	Student 7	60	Average to good
8	Student 8	25	Poor
9	Student 9	25	Poor
10	Student 10	45	Poor
11	Student 11	25	Poor

According to the data shown in Table, the post-test scores of the students reflect varying levels of achievement in vocabulary. The results indicate a broad range of scores among the 11 students, with most of them falling into the "Poor" category. Specifically, 7 students (Student 2, 3, 5, 6, 8, 9, and 11) scored below average, pointing to a need for substantial improvement in their vocabulary knowledge. Among these, several students had the lowest scores, with Students 6, 8, 9, and 11 all scoring 25, which indicates they are struggling the most with the material.

On the other hand, 4 students scored in the "Average to Good" range. Students 1, 4, and 7 achieved scores of 75, 55, and 60, respectively. These students demonstrated a better understanding of vocabulary, with Student 1 scoring the highest within the average range.

In general, the results suggest that while some students have a solid grasp of vocabulary, most students require additional support to enhance their vocabulary skills. The large number of students in the "Poor" category underscores the necessity for additional teaching strategies or interventions to help them improve their vocabulary knowledge.

The researcher also statistically analyzed the students' pre-test scores using SPSS 27. The detailed results of the statistical scores are provided below.

Table 3. Descriptive Statistics of Students' Pre-test Scores

	N	Minimum	Maximum	Mean	Std. Deviation

Pre_Test_Score	11	25,00	75,00	39,5455	17,09599
Valid N (listwise)	11				

The descriptive statistics of the students' pre-test scores indicate that 11 students participated in the test. The lowest score was 25, signifying that some students faced considerable challenges with the material, while the highest score reached 75, indicating that a few students had a stronger understanding of the content. The mean score of 35,55 reflects a relatively low average performance, suggesting that, overall, students struggled with the material. Moreover, the standard deviation of 17.10 points to moderate variability in the students' scores, meaning that while some performed notably better, others performed much worse. These results emphasize the need for additional support and interventions to improve students' understanding before future assessments.

Table 4. The Rating Percentage Score of Students' Correct Answers in Pre-Test

No.	Classification	Range	Frequency	Percentage
1	Excellent	86-100	0	0%
2	Good	71-85	1	7.2 %
3	Average	56-70	2	18.2 %
4	Poor	< 55	8	72.7 %
Total			11	100%

b. Post-Test

In the post-test, the researcher calculated the students' correct answers in order to analyze the vocabulary list understanding. Furthermore, the researcher calculated the post-test score statistically by using SPSS 27.

Table 5. Students Vocabulary Post-Test Score

No.	Students	Post-test	Status
1	Student 1	90	Good to Excellent
2	Student 2	65	Average to good
3	Student 3	30	Poor
4	Student 4	85	Good to excellent
5	Student 5	65	Average to good
6	Student 6	60	Average to good
7	Student 7	75	Average to good
8	Student 8	55	Poor to average
9	Student 9	65	Average to good
10	Student 10	70	Average to good
11	Student 11	60	Average to good

According to the data from the students' post-test scores, the highest score achieved was 90, categorized as "Good to Excellent," earned by Student 1. Two other students scored 85 and 75, indicating notable improvements in their vocabulary knowledge. However, some students still

performed poorly, with Student 3 scoring the lowest at 30, which falls under the "Poor" category. Student 8, with a score of 55, fell in the "Poor to Average" range, while the remaining students scored between 60 and 70, placing them in the "Average to Good" range. The overall trend suggests that while a few students made substantial progress compared to the pre-test, many still scored in the "Average to Good" or lower ranges.
This highlights the need for additional support to help students achieve a higher level of vocabulary proficiency.

Table 6. Descriptive Statistics of Students' Post-test Scores

	N	Minimum	Maximum	Mean	Std. Deviation
pre_test_score	11	30,00	90,00	65,4545	15,88310
Valid N (listwise)	11				

The descriptive statistics of the students' post-test scores indicate that there were 11 students in total. The lowest score was 30, showing that one student had difficulty with the material, though it marked an improvement from the pre-test. The highest score was 90, reflecting a solid understanding of the content by at least one student. The mean score of 65,45 suggests an overall moderate performance, with noticeable improvement compared to the pre-test. However, the standard deviation of 15.88 indicates significant variation in students' scores, highlighting that while some students excelled, others still faced challenges. This implies that, despite overall progress, additional support might be necessary to help address individual performance gaps.

Table 7. The Rating Percentage Score of Students' Correct Answers in Post-Test

No.	Classification	Range	Frequency	Percentage
1	Excellent	86-100	2	18.18 %
2	Good	71-85	4	36.36 %
3	Average	56-70	4	36.36 %
4	Poor	< 55	1	9.09 %
Total			11	100%

The data from the post-test reveals that the majority of students demonstrated a moderate level of achievement. Two students (18.18%) earned scores in the "Excellent" range (86-100), indicating strong performance. Four students (36.36%) scored in the "Good" range (71-85), while another four students (36.36%) were in the "Average" range (56-70), reflecting a solid grasp of the material. Only one student (9.09%) scored in the "Poor" category (≤55), suggesting continued difficulty with the content. Overall, the results show a positive trend, with most students improving their vocabulary knowledge compared to the pre-test.

2. The Statistic Analysis Score

a. The Paired Sample T-test

Table 8. Paired Sample T-test Results

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pre_test_score	39,5455	11	17,09599	5,15463
	post_test_score	65,4545	11	15,88310	4,78893

Based on the results of the Paired Samples t-test, the mean score for the pre-test is 39.55, indicating that students' understanding of the material before the intervention was relatively low. After the teaching or intervention, the mean score for the post-test increased to 65.45, showing a significant improvement in student comprehension. Although there was an improvement, there is still variability in the scores, with the standard deviation for the pre-test being 17.10 and the post-test slightly lower at 15.88. This decrease in standard deviation indicates that, while variability remains, post-test scores were more concentrated and consistent among students compared to the pre-test. Additionally, the standard error mean for the pre-test is 5.15, suggesting more variability in the estimation of the pre-test mean, whereas the post-test's standard error mean is reduced to 4.79, showing more stability in the estimation of the post-test mean. Overall, these results suggest that the intervention or instruction had a positive impact on student understanding, although there are still differences in performance across students.

b. Paired Sample Correlation

Table 9. Paired Sample Correlation

		N	Correlation	Sig.
Pair 1	pre_test_score & post_test_score	11	,756	,007

The results for Paired Sample Correlation show a moderate to strong positive correlation (r = 0.756) between the pre-test and post-test scores. This indicates that students who performed well on the pre-test were likely to perform well on the post-test as well. The p-value of 0.007 suggests that the difference between the pre-test and post-test scores is statistically significant. Since the p-value is less than 0.05, this means that the observed difference is unlikely to have occurred by chance, and the intervention or instruction had a meaningful impact on improving student understanding. Overall, these results demonstrate that there was a significant improvement in students' scores after the intervention, and the relationship between the pre-test and post-test scores is strong.

c. The Paired Sample Test

Table 10. The Paired Sample Test

					95% confidence interval of the diffrence				
		Mean	Std.Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre-test score Post-test score	25,90909	11,57976	3,49143	-33,688848	-18,1297	-7,421	10	<,001

The paired sample t-test results show a significant difference between the pre-test and post-test scores. The mean difference between the pre-test and post-test scores is 25.91, with a standard deviation of 11.58 and a standard error mean of 3.49. The 95% confidence interval for the mean difference ranges from -33.69 to -18.13, indicating that the true mean difference is likely to fall within this range with 95% certainty. The t-value is -7.42, with 10 degrees of freedom (df), and the p-value is less than 0.001 ($p < 0.001$). This p-value indicates that the

observed difference between the pre-test and post-test scores is highly statistically significant, meaning the null hypothesis (that there is no difference between the two sets of scores) is rejected. Therefore, it can be concluded that there was a significant improvement in scores from the pre-test to the post-test in this study indicating the effectiveness of the chain spelling game in promoting vocabulary mastery.

This study demonstrates the effectiveness of using the chain spelling game technique to improve vocabulary mastery, as evidenced by the statistical results. According to the SPSS 27 analysis, the two-tailed significance value is less than 0.001, which is lower than the standard significance level of 0.05 ($p < 0.001$). This statistical result led to the acceptance of the alternative hypothesis (H_1) and the rejection of the null hypothesis (H_0). The findings indicate that the chain spelling game technique significantly enhances students' vocabulary mastery. The experimental group, consisting of 11 students, showed notable improvement.

Discussion

The use of the chain spelling game technique made vocabulary instruction more engaging and motivated students to participate actively in the learning process. Students were excited to engage in the activity, which helped them stay focused and reduce boredom during English lessons. The technique proved useful in facilitating students' vocabulary mastery. These findings align with Toni Haryanto's (2015) research, which highlighted that introducing new techniques into the learning process makes it more engaging. Additionally, the results are consistent with the work of Hemmati, Teimoori, and Jafarigohar (2013), who found that game-playing, such as storytelling and games, positively impacted vocabulary recognition among Iranian EFL kindergartners. One possible explanation for the positive outcomes could be that, as Ur (1996) suggests, active involvement in learning through interactive and fun activities like games enhances student performance. Games are designed to promote engagement and competition in achieving specific objectives. The competitive nature of the games used in this study added excitement to the classroom atmosphere. Students often learn more effectively when they are actively involved in discovery and experimentation, especially in a motivating and relaxed environment where the game's goals are clear and attainable. The games used in this study successfully motivated students, particularly the chain spelling game, where students eagerly awaited their turn to contribute words. This approach encouraged cooperative and team-based learning, with the competitive aspect further boosting student engagement as they were motivated by the desire to win. However, the researchers cautioned that relying solely on games as a teaching strategy could have negative effects. They suggested that games should complement other teaching methods rather than replace them. In line with this, Ayu Wahyuni's (2020) research found that seventh-grade students at SMP Negeri 19 Palembang showed improvement in their vocabulary through the use of guessing games. This improvement was evident in the students' increased motivation and enjoyment in learning vocabulary. In conclusion, the students appeared to be both comfortable and actively engaged in the learning process. Most students made significant progress when the guessing whispering spelling game technique was implemented. Furthermore, the versatility of this game, with its adaptable sequence, makes it a flexible and effective tool in various teaching methods.

CONCLUSION

Based on the analysis and findings of the data, the researcher concludes that the use of the chain spelling game has proven effective in enhancing students' vocabulary mastery. The improvement in the students' post-test scores, which were higher than their pre-test scores,

demonstrates the success of the treatment phase in aiding students to strengthen their vocabulary skills. Additionally, the application of the chain spelling game can be regarded as an appropriate technique for teaching and boosting vocabulary mastery.

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