THE EFFECTIVENESS OF USING GAMES TO IMPROVE STUDENTS' VOCABULARY LEARNING AT SMP NEGERI 3 TONDANO

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Abstract: This research focuses on the effectiveness of using games to increase student vocabulary learning at SMP Negeri 3 Tondano. The research sample consisted of 44 students from classes VII A and VII B. The research method used was quantitative using a True-Experimental pre-test and post-test control group design. The instruments used in this research were multiple-choice tests. Data were analyzed using the average score formula to see significant differences between pre-test and post-test scores. The research results showed that there was a significant difference between the pretest and posttest scores. The pre-test results for the experimental class were 41.14 and the post-test were 86.82. The difference in scores between the pre-test and post-test is 39,54. and the pre-test result from the control class was 40,68 and the post-test was 69,77. The difference in scores in the control class was 31,37. The research results showed that the average post-test score in the experimental class was higher than the initial test. and data analysis using N-Gain Score shows that in the experimental class, an average score of 77,6 % was obtained, including the effective category. And in the control class (not using puzzle games) 53.52% were in the less effective category. So providing learning treatment using games, is effective in increasing students' vocabulary learning.

Keywords: Effectiveness, Games, Vocabulary, Improving

INTRODUCTION

English is a very important language in the era of the Industrial Revolution 4.0. English is an international language used for communication between different countries in the world (Liando et al., 2023a). Therefore, children must be taught English from an early age. In addition, at this time, there are still many children who have not yet attended English classes (Panti et al., 2019).

Language generally refers to language skills related to the effective use of language for communication (Liando et al., 2023b; Liando et al., 2022; Liando et al., 2023c). These skills can be broadly categorized into four main areas, the first of which is Listening, which is the ability to understand spoken language. Good listening skills include the ability to understand spoken words, understand tone and inflection, and capture the intended message. Second, speaking is the ability to express thoughts, ideas, and feelings using words. Speaking skills involve pronunciation, fluency, use of vocabulary, and the ability to convey messages clearly and effectively, the third is reading is the ability to understand written language. Reading skills include comprehension, vocabulary recognition, and interpreting and understanding written texts, and the fourth is writing, which is the ability to create written language. Writing skills include spelling, grammar, punctuation, sentence structure, and the ability to convey ideas coherently through written text (Husain, 2015).

There are several language components such as vocabulary is one of the important components of language. Vocabulary refers to the list of words that are understood and used by speakers of a language (Kumayas & Lengkoan, 2023). This includes nouns, adjectives, verbs, adverbs, phrases, idioms, and other words used to convey meaning. Second, a sentence is a language unit that consists of one or more words and expresses a thought or idea. Sentences have a certain structure that includes a subject, predicate, and object (if any). Sentences can be statements, questions, commands, or exclamations. third is intonation, melodic patterns, or tone of voice in speaking. Intonation includes variations in speed, pitch, and emphasis on certain syllables or words in a sentence. Intonation can influence the meaning of a sentence. For example, rising intonation at the end of a sentence often indicates a question. and fourth, grammar is the rules that regulate sentence structure and the way words are arranged in a particular language. This includes rules about verbs, nouns, adjectives, word layout, conjugation (changes in verb forms), and so on. Grammar helps language speakers create grammatical and meaningful sentences (Nur et al., 2023).

Vocabulary is the words spoken by an individual to be in contact with each other in all scopes with the of use a language user's knowledge of words.

Vocabulary is also can be defined as the number of words we need to master to effectively communicate with others, expressing our ideas, thoughts, and feelings as well as comprehending what other people say to us (Zahrotul Elmi, 2022). Games are activities or forms of entertainment that involve interaction between players or between players and the environment, are governed by certain rules, and usually have certain goals. Games can be played by one person (single-player games) or more (multiplayer games), and they have a wide variety of forms, goals, and complexities. The importance of using games to improve students' learning vocabulary lies in their potential to improve language learning outcomes. By incorporating games into language lessons, educators can create a more engaging and interactive learning environment that meets the needs and interests of students.

Games can allow students to practice and apply their vocabulary skills in a fun and challenging way, which can help reinforce their learning and improve their fluency. Furthermore, the research contributes to the development of innovative and effective language teaching methods that benefit both students and teachers. It provides insight into the most effective types of play and strategies that can be used to increase students' interest and learning English vocabulary, and factors that can influence the success of such interventions. The findings of the study could also inform the development of instructional materials and resources that incorporate games into language teaching (Syahid, A., & Setiawan, 2018). Media is a means of channeling messages or learning information that the source of the message wants to convey to the target or recipient of the message. Learning media can be used by teachers in teaching and learning activities. The use of learning media in teaching and learning activities can generate new interests and desires, generate motivation and stimulate learning activities, and even have a psychological influence on students. The learning media that are less than optimal in the implementation of teaching and learning activities can affect student learning outcomes (Nurpratiwiningsih et al., 2018)

Materials that can be used to make crossword puzzles (crosswords) in the form of learning media can include:

a) Paper or worksheet: You can use plain paper or use an existing crossword template.

b) Pencil or pen: Used to fill in the crossword boxes with the appropriate letters.

c) List of questions or clues: You will need to prepare a list of questions or clues for each word to be filled in in the crossword puzzle.

d) Dictionaries or reference sources: To ensure the safety and appropriateness of words used in crosswords, you can use dictionaries or other reference sources.

This research begins with the researcher's observation of the condition of students who experience difficulties in mastering vocabulary so that English language skills become limited. In addition, students often feel bored and less enthusiastic in studying Students find it difficult to master vocabulary so English language skills are limited Students often feel bored and less enthusiastic in learning English the importance of interesting media to improve vocabulary mastery is by using puzzle games. Expected results is puzzle games can help students master English vocabulary and puzzle games can be an alternative to teaching English vocabulary.

They often dislike learning English because it is difficult to understand it properly. Therefore, many schools have started to implement learning methods that can help students understand English subjects so that English can eventually become one of the subjects that students like in school (Silalahi, 2019).

This is because teachers rarely use fun learning media. Efforts to overcome these problems require learning media that are interesting and able to help students master language vocabulary in English, namely by using games. The purpose of the study is to see whether the use of games is effective in improving students' learning English vocabulary or not.

RESEARCH METHOD

In this study, Quantitative researchers used a true experimental research design. Experimental research methods can be interpreted as research methods

used to find the effect of certain treatments on others under controlled conditions (Prof.Dr. Sugiyono, 2008).

In this research used a true-experimental pretest-posttest control group design

Population is the subject of research. The population is all the data that concerns us in the scope and time that we specify (Dan et al., 2021). The population of this research is the Junior high school SMP Negeri 3 Tondano. The sample is part of the number and characteristics possessed by the population (Prof.Dr. Sugiyono, 2008). Withdrawal of samples in this study using sampling techniques purposive. The sample for this research is class seventh grade junior high school students, The control class (7B), and the experimental class (7A) Furthermore, the first class will be given learning without using Treatment, while the second class will use Treatment.

Data collection is an initial test (Pretest) In this study, the initial test or better known as pretest designation. The pretest was carried out to measure the initial abilities of the research subjects before being given treatment. The test given to the control class must be the same as the experimental class (Iii, 2010). Final Test (Posttest) The final test which is often referred to as the posttest is carried out after treatment of the subject is given. The final test was carried out not only in the treated class but also in the control class. This is to see the difference in test results that occur between the control class and the experimental class where one is given treatment and the other is not. The test questions given in the final test are the same as the test questions in the initial test (Iii, 2010).

Data analysis the purpose of data processing in this study was to find out whether the use of games could increase students' motivation to learn vocabulary

Normality test of the data with the Liliefors test. The frequency distribution normality test is carried out to determine whether the data distribution is normal or not, which is a requirement for determining the type of statistics used in further analysis. The data that need to be tested for frequency normality in this research are the experimental class and control class learning result data groups. The distribution normality test calculation uses the Liliefors Test formula as follows:

Statistical hypothesis:

H0: data spreads normally

H1: data is not distributed normally

Testing Criteria

Confidence Level (α) = 0.05, n = 44

Accept H0 if Lcount < Ltable

Reject H0 if Lcount > Ltable

The homogeneity test of variance was used on the initial and test score data at the end of the experimental and control groups. The variance homogeneity test was carried out to determine whether the two samples taken, namely the experimental and control groups, had a homogeneous variance or not. The homogeneity test is carried out using the formula:

$$F = \frac{S_A^2}{S_B^2}$$

Description:

S_A^2 =largest variance

S_B^2 = smallest variance   (Iii, 2010)

The value of Fcount is then compared with Ftable if Ftable with numerator dk = n-1 and dk denominator = n-1. In this case, the provisions apply, if Fcount is smaller or equal to Ftable (Fh ≤ Ft), then the data shows homogeneity. The gain index is a normalized gain developed by (Meltzer, 2002) which is formulated in the form below:

Indeks gain (skor posttest-skor pretest)/ (maxsimun value-skor pretest)

The gain index is interpreted using the criteria disclosed by (Meltzer, 2002).

        G Value   Interpretation

        > 40   Ineffective

40-55	Less effective
56-75	Quite effective
>76	Effective

The gain index data analysis technique was carried out to see the differences in average, whether there is an increase or not. If the average result of the experimental group is higher, then the use of interactive multimedia as a learning tool can improve deaf children's initial reading ability is proven to be better.

FINDINGS AND DISCUSSION

The research results referred to in this study are all data obtained during the research period. This research activity was carried out on students in class VII a with a total of 22 students and class VII b with many 22 students in the 2023/2024 academic year at SMPN 3 Tondano. The implementation of this research activity begins in the Odd Semester month of the 2023/2024 academic year, where Class VII a is the Experiment class, while Class VII b is the Control Class.

Before learning begins, an initial test (pretest) and a final test (posttest) are carried out after learning using games. Data on initial test results and final test in the Experiment class can be seen in Table 4.1 below

	Pre-test	**Post-test**
Mean ($\bar{x}$)	**41,14**	**86,82**
Maximum	**50**	**95**
Minimum	**30**	**75**
St. Deviation	**5,759**	**5,465**

Data from the initial test results (pretest) for the experimental class, the highest score was 50 while the lowest score was 30. Based on the data, the following statistical data were obtained: Mean= 41.14; Standard deviation 5.759; data on the results of the final test (posttest) of experiments using games, the highest score was 95 while the lowest score was 75. Based on the data, the following statistical data were obtained: Mean = 86.82; Standard deviation 5.465;. Data on student learning outcomes after receiving treatment (post-test) can be seen in Table 4.2 below.

	Pre-test	Post-test
Mean ($\overline{x}$)	40,68	69,77
Maksimum	50	80
Minimum	30	60
St. Deviation	5,626	5,633

Data on learning results from the initial control test (pretest) using conventional learning, the highest score was 50 while the lowest score was 30. Based on the data, the following statistical data were obtained: Mean = 40.68; Standard deviation 5.626. results from the final control test (posttest) using conventional learning, the highest score was 80 while the lowest score was 60. Based on the data, the following statistical data were obtained: Total Mean = 69,77; Standard deviation 6.633.

One of the requirements before testing the gain index data analysis is to first carry out the analysis requirements with a normality test and a homogeneity test. The data used is initial ability data from the two classes, namely the experimental class and the control class. This test was carried out to determine the normality of the data as a condition for conducting experiments on the two classes that have been determined. Therefore, the normality test of learning outcomes data using the Liliefors Test formula is presented using SPSS version 25 as follows:

The learning normality test began with a pretest and a posttest in both research classes. Data from initial test results and final test in the Experimental learning and control learning classes using the normality test, through SPSS version 25 testing, obtained the following results:

Tests of Normality

	Result	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.

		.215	22	.010	.910	22	.047
Result of Learning	pre-test experiment	.215	22	.010	.910	22	.047
	post-test experiment	.220	22	.007	.914	22	.058
	pre-test control	.188	22	.042	.920	22	.076
	post-test control	.219	22	.008	.897	22	.026

a. Lilliefors Significance Correction

From the normality test table, the initial test results obtained are experimental pretest Lcount = 0.010; Lcount posttest experiment = 0.007, and Lcount of control class pretest = 0.42; Lcount of control class posttest = 0,008; while Ltable = 0.190 and N = 22 with α = 0.05. Because Lcount < Ltable, Ha indicates that the population is normally distributed or accepted.

The homogeneity test was carried out to find out whether the samples taken had different variants from each other. The homogeneity test can be determined using the F test by looking at the results of the significance. If Fcount is smaller than Ftable with a significance of 5%, then the data is declared the same or there is no difference between the groups of variants studied. Testing the homogeneity of learning result data for experimental classes and control classes in English language subjects Class VII A and Class VII B at SMPN 3 Tondano was carried out in the following stages:

Test of Homogeneity of Variance

	Levene Statistic	df1	df2	Sig.
Based on Mean	1.623	1	42	.210

Result of learning	Based on Median	1.500	1	42	.227
	Based on Median and with adjusted df	1.500	1	41.733	.228
	Based on trimmed mean	1.628	1	42	.209

From the results of the homogeneity test analysis of the initial and final test data (pretest and posttest), the table gives Fcount = 0.209 and is significant > 0.05. It turns out that 0.209 ≥ 0.05 means that the pre-test and post-test data for the Experimental Group (VII A) and Control Group (VII B) in the English subject regarding vocabulary at SMPN 3 Tondano is "Homogeneous".

Interpretation of the N-Gain Score test

Statistics		
	exp	control
Mean	77.6782	49.1793
Minimum	61.54	27.27
Maximum	91.67	63.64
Range	30.13	36.36

Referring to the N-Gain value in percent form and the descriptive output table, Based on the results of the N-Gain Score Test calculation, it shows that the average N-Gain Score value for the experimental class (use of puzzle games) was 77.6782%, including in the effective category with a minimum value of 61,54% and a maximum

of 91,67 %. And in the control class (not using puzzle games) 49,1793% were included in the less effective category with a minimum value of 27,27% and a maximum of 63.64%.

So based on the N-Gain score test, the use of puzzle games in vocabulary learning in the Experiment class (VII A) at SMPN 3 Tondano is effective, whereas in the control class (VII B) using conventional learning at SMPN 3 Tondano is less effective.

DISCUSSION

This research was conducted in English subjects in Class VII of SMP Negeri 3 Tondano. The research subjects were 44 students who were divided into two class groups, namely the Experiment Class (22 students) and the Control Class (22 students).

Before learning was carried out, students were given test questions (pretest) on the English subject of vocabulary material in both classes to determine whether the initial conditions of the two research classes were the same or equivalent in terms of knowledge, as well as to determine the normality and homogeneity of data distribution from the two classes. After learning the English vocabulary subject, the students were again given test questions (posttest) to determine the final condition of the students in the two research classes after being given different treatments. The treatment was divided into two, namely in class VIIA the process used puzzle games, and in class VIIB it used control class learning.

Before the learning was carried out, the pretest results showed that the experimental class learning results had the highest score of 50 and the lowest score of 30 with an average of 41.14. After carrying out the learning process using the Puzzle game, the posttest results were obtained with the lowest score being 75 and the highest being 95 with an average of 86.82. Meanwhile, the Control Class pretest had the highest score of 50 and the lowest 30 with an average of 40.68. The Control Class posttest had the lowest score of 60 and the highest score of 80 with an average of 69,77.

From these results, the data was then processed using the normality test formula with the help of the SPSS version 25 program to determine whether the data was normal and homogeneous or not. From the normality test table, the initial test results

obtained are experimental pretest Lcount = 0.010; Lcount posttest experiment = 0.007, and Lcount of control class pretest =0.42; Lcount of control class posttest = 0,008; while Ltable = 0.190 and N = 22 with α = 0.05. Because Lcount < Ltable, Ha indicates that the population is normally distributed or accepted.

Meanwhile, calculating homogeneity using the F test compares the Fcount value with Ftable, for α = 0.05 and dk in the numerator = n − 2 = 44 - 2 = 42 (for the largest variance), dk in the denominator = n − 1 = 44 - 2 = 42, (for the smallest variance) we get Ftable = 1.68 with the following test criteria:

If Fcount <Significant> 0.05, it means the data is not homogeneous

If Fcount > Significant > 0.05, it means the data is homogeneous.

From the results of the homogeneity test analysis of the initial and final test data (pretest and posttest), the table gives Fcount = 0.209 and is significant > 0.05. It turns out that 0.209 ≥ 0.05 means that the pre-test and post-test data for the Experimental Group (VII A) and Control Group (VII B) in the English subject regarding vocabulary at SMPN 3 Tondano is "Homogeneous".

Referring to the N-Gain value in percent form and the descriptive output table. Based on the results of the N-Gain Score Test calculation, it shows that the average N-Gain Score value for the experimental class (use of puzzle games) was 77.6782%, including in the effective category with a minimum value of 61,54% and a maximum of 91,67 %. And in the control class (not using puzzle games) 49,1793% were included in the less effective category with a minimum value of 27,27% and a maximum of 63.64%.

So based on the N-Gain score test, the use of puzzle games in vocabulary learning in the Experimental class (VII A) at SMPN 3 Tondano was effective, while in the control class (VII B) using conventional learning at SMPN 3 Tondano was less effective.

Based on the results of the analysis above, it show that there are significant differences in the learning outcomes of the two classes, where the learning outcomes of students who are taught using puzzle games are higher than the learning outcomes of students who use conventional learning. English subjects. at SMP Negeri 3 Tondano.

The difference in average learning outcomes occurs due to differences in learning activities that apply methods in the experimental class and the control class.

In general, it can be said that the results of experimental research conducted at SMP Negeri 3 Tondano Class VIIA, totaling 22 Students, were using games. The control class was held in Class VIIB, totaling 22 students with conventional learning. Providing learning treatment using games, is effective in improving students' vocabulary learning.

CONCLUSION

Based on the research results, it can be concluded that the use of games is effective in improving students' vocabulary learning. Data analysis based on the results of the N-Gain Score Test calculation shows that the average N-Gain Score value for the experimental class (use of puzzle games) is 77.6782%, including in the effective category with a minimum value of 61,54% and a maximum of 91,67 %. This research shows that students respond positively to learning approaches that involve games, which create a more interactive and enjoyable learning environment. Students who were involved in learning games showed a significant increase in vocabulary mastery compared to conventional learning methods.

The use of games not only provides a more enjoyable learning experience for students but also builds students' self-confidence and interest in the subject matter. Students tend to participate more actively, dig deeper into the material, and feel motivated to continue learning. These results show that games in learning are not just a means of entertainment, but are also an effective and meaningful learning strategy.

Educators can try different types of games that focus on vocabulary development. Diversifying the types of games can meet students' diverse interests and enrich their learning experience. It is recommended for teachers to develop learning using games in English learning activities. The use of this game-learning model is an effective way to improve students' vocabulary learning.

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