The Effect of Wordscapes Application Toward Students Vocabulary Mastery at the Seventh Grade of Al-Um Islamic Boarding School Nort Bengkulu

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Abstract. This study aimed to determine the effect of using the *Wordscapes* application on the vocabulary mastery of seventh-grade students at MTs Al-Um Islamic Boarding School, North Bengkulu Regency, in the 2024/2025 academic year. The research employed a quasi-experimental method with a nonequivalent control group design. The sample consisted of two classes: experimental and control. The research instrument was a vocabulary test in the form of multiple-choice questions, administered before and after the treatment. Data analysis was carried out using SPSS version 28. A validity test was conducted on 65 items, resulting in 26 valid questions. Furthermore, normality, homogeneity, t-test, and F-test were performed to determine the significance of score differences between the experimental and control groups. The results showed a significant increase in scores in the experimental class compared to the control class after being treated with the *Wordscapes* application. This indicates that the *Wordscapes* application is effective in enhancing students vocabulary mastery.

Keywords: Wordscapes, vocabulary mastery, MTs Al-Um

1. BACKGROUND

Vocabulary mastery is one of the basic elements that is very important in learning English. Without adequate vocabulary mastery, students will find it difficult to develop other language skills, such as reading, writing, listening and speaking. Vocabulary becomes the main tool for students to understand and express ideas, feelings, and information in English. Vocabulary was all the words known or used by a person in speaking about a particular subject in a particular language (Dewi et al., 2019). Therefore, improving vocabulary mastery should be a major concern in the English language learning process, especially at the primary and secondary education levels.

However, based on the initial observation conducted by the researcher at MTs Al-Um Islamic Boarding School, North Bengkulu Regency, it was found that the majority of seventh grade students still have low vocabulary skills. This can be seen from the low score on the vocabulary test and the lack of active participation in English learning. One of the causes of the low vocabulary mastery is because the learning methods used by teachers are still conventional, tend to be boring, and do not utilize the available technology. In fact, in today's

digital era, the use of technology-based media is very potential to increase student interest and learning outcomes.

However, based on initial observations made by researchers at MTs Al-Um Islamic Boarding School, North Bengkulu Regency, it was found that the majority of seventh grade students still have low vocabulary skills. This can be seen from the low score on the vocabulary test and the lack of active participation in English learning. One of the causes of the low vocabulary mastery is because the learning methods used by teachers are still conventional, tend to be boring, and do not utilize the available technology. In fact, in today digital era, the use of technology-based media is very potential to increase student interest and learning outcomes.

One of the innovative and interesting learning media is the Wordscapes app. This app is a digital-based word puzzle game that presents challenges in composing words from random letters. This game is not only entertaining, but also educational because it directly stimulates students in recognizing and understanding English vocabulary. Some previous studies have shown that educational game media can increase students' learning motivation and vocabulary mastery. Umbola, Mambo, and Yusak (2022) stated that the use of educational games in learning has a positive effect on increasing students' learning engagement and motivation (Umbola et al., 2022). Research by (Vu et al., 2022) also revealed that Wordscapes can help students in building connections between words and improving their lexical memory ability. Meanwhile, (Instr. Angham T. Saleh J., 2019)emphasized that game-based learning can create a fun learning atmosphere and reduce students' boredom level in learning languages.

Owever, in a pesantren-based educational environment such as MTs Al-Um, the utilization of technology-based applications is still very minimal. Teachers tend to use the lecture method or giving written assignments, which is less attractive to students. Even though supporting facilities such as projectors and internet networks are available. This condition shows a gap between the potential use of technology in learning and the reality of teaching practices in the field. Therefore, it is necessary to make an innovative breakthrough to present a learning model that is able to bridge the needs of students and the development of learning technology.

This research is important because it offers a new approach in vocabulary learning through Wordscapes application that has never been applied at MTs Al-Um. In addition, this research also aims to fill the gap in studies where there are still few studies that raise the use of Wordscapes application in the context of pesantren-based schools. By using the quasi-

experimental method and the help of SPSS version 28 software, this study is expected to provide empirical evidence regarding the effectiveness of Wordscapes application in improving students' vocabulary mastery. Thus, the purpose of this study is to determine the effect of using Wordscapes application on vocabulary mastery of seventh grade students of MTs Al-Um Islamic Boarding School, North Bengkulu Regency in the academic year 2024/2025.

2. METHODE

Research Design

This study uses quantitative methods to test the relationship between variables objectively by analyzing numerical data using statistical procedures (Creswell John and Creswell David, 2023). The method used is experimentation, which is research that aims to determine the effect of independent variables on the dependent variable under controlled conditions (Zyra et al., 2022). The design used is quasi-experimental with nonequivalent control group, where there is an experimental group and a control group where the experimental class gets treatment and the control class with conventional methods, which will be given a pre-test and post-test, so that the results between the experimental and control groups are compared to see the difference after treatment.

Population and Sample

The population of this study were all seventh grade students of Pondok Pesantren Al-Um Bengkulu Utara in the 2024/2025 school year, totaling 66 students. And two classes were used as samples by researchers, namely VII A and VII B classes totaling 43 students. Researchers must ensure that the sample is uniform and normal before starting the research.

Data Collection Technique

Pre-test and post-test were used in this study. There were twenty-six multiple choice questions in the test. The pre-test was used to determine students' initial vocabulary mastery, followed by the treatment and the post-test to determine the effect of the treatment on students vocabulary mastery.

Data Analysis Technique

This study used several statistical tests, namely validity, reliability, normality, homogeneity, t-test, and F-test. These tests ensured that the research instruments were valid, consistent, appropriate in difficulty level, and the data were normally distributed and homogeneous. The t-test was used to see the difference between two groups, while

the F-test (ANCOVA) compared the means of two or more groups with control variables. All analyses were conducted using SPSS version 28.

3. RESULTAND DISCUSSION

Analysis of the Data

A. Validity Test

Before conducting the research, Before conducting the research, the researcher tested the instrument's validity to ensure its suitability in measuring the intended aspects. Validity refers to how accurately an instrument measures what it is designed to measure (Kouam Arthur William, 2024). the researchers first tested the validity of the instrument using 65 multiple choice questions that were arranged based on specific vocabulary indicators. The trial was conducted at SMP Negeri 61 North Bengkulu which has the same level of accreditation as the main research location, namely MTs Al-Um. A total of 22 students were the subjects in this pilot test. Based on the results of the analysis using SPSS version 28 and comparing the r count value with r table (0.4227), it was found that 26 out of 65 questions were declared valid. This indicates that most of the instruments have not met the criteria for adequate validity and need to be revised before further use.

B. Reliabiity Test

Table 1

Reliability Statistics	
Cronbach's Alpha	N of Items
0,883	65
Reliabel	

In this reliability test, researchers used 65 multiple choice questions which were tested at SMP Negeri 61 North Bengkulu with 22 students as respondents. After analyzing using SPSS, a reliability coefficient of 0.883 was obtained. Based on the category, this value shows that the instrument is classified as highly reliable because it exceeds the minimum limit of 0.600. Thus, it can be concluded that the question instrument has a good level of reliability (Herlawan et al., 2021).

Table 2

Tests of Normality Experimental Class						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test Experimenta l Class	.158	22	.165	.923	22	.088
Post-Test Experimenta l Class	.167	22	.112	.924	22	.094
a. Lilliefors Significance Correction						

C. Normality Test

Based on the table above, the significance value of the Lilliefors test shows that the pre-test and post-test data in the experimental class are normally distributed. The significance value for post-test data is 0.094 and for pre-test data is 0.088. Since both values are greater than the significance limit of 0.05, the data is considered normally distributed. This indicates that the data from the experimental class qualifies for further statistical analysis.

Table 3

Tests of Normality Control Class						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test Control Class	.200	21	.027	.943	21	.245
Post-Test Control Class	.189	21	.050	.945	21	.279
a. Lilliefors Significance Correction						

Based on the table above, the significance value of the Lilliefors test shows that the pre-test and post-test data in the control class are normally distributed. The significance value for post-test data is 0.279 and for pre-test data is 0.245. Since both values are greater than the significance limit of 0.05, the data is considered normally distributed. This indicates that the data from the control class qualifies for further statistical analysis.

D. Homogenity Test

After the researchers calculated the normality of the data, then the researchers calculated the homogeneity which was calculated using the SPSS 28 program. The results of the homogeneity test will be explained in the table below:

Table 4

Test of Homogeneity of Variances		Levene Statistic	df1	df2	Sig.
Pre-Test	Based on Mean	.811	1	41	.373
	Based on Median	.482	1	41	.491
	Based on Median and with adjusted df	.482	1	39.666	.492
	Based on trimmed mean	.825	1	41	.369
Post-Test	Based on Mean	2.546	1	41	.118
	Based on Median	1.916	1	41	.174
	Based on Median and with adjusted df	1.916	1	38.170	.174
	Based on trimmed mean	2.573	1	41	.116

The results of the homogeneity test with the Levene test showed that the significance values of the pre-test and post-test were above 0.05, both in the experimental and control classes. For the pre-test, the significance values ranged from 0.369 to 0.491, and for the post-test between 0.116 to 0.174. Since all values are greater than 0.05, it can be concluded that the pre-test and post-test data from both classes have homogeneous or similar variances.

E. T-test

After the data from the experimental and control classes were declared normal and homogeneous, statistical analysis was carried out using the t-test with SPSS to compare the post-test learning outcomes of the two classes after the learning treatment. The T-test is effective, but its accuracy can be affected by non-normal data or mismatched samples (Novak, 2022). The results of the T-test will be explained in the table below:

Table 5

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Nilai Post-Test	Equal variances assumed	2.546	.118	5.603	41	.000	23.108	4.124	14.779	31.438
	Equal variances not assumed			5.572	38.082	.000	23.108	4.147	14.713	31.503

Independent Samples Test

The Independent T-test shows a calculated t value of 5.603 with a significance of 0.000, greater than t table 1.684 and smaller than 0.05. This means there is a significant difference between the post-test scores of the two classes, so the use of Wordscapes application is effective in improving students vocabulary mastery.

F. F-test

The F test (ANCOVA) was conducted to determine the significant effect of several factors on students' abilities individually or together. The F test, named by George W. Snedecor in honor of Sir Ronald Fisher, is used to compare variances between groups (Odek & Opuodho, 2023). This test is important to ensure that the treatment in the study has a real impact on students' vocabulary mastery. If the results are significant, the treatment is considered successful. The complete results of the F test can be seen in the following table:

Table 6

Tests of Between-Subjects Effects						
Dependent Variable: nilai post-test						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5737.289ª	1	5737.289	31.392	.000	.434
Intercept	176986.591	1	176986.591	968.390	.000	.959
kelas	5737.289	1	5737.289	31.392	.000	.434
Error	7493.316	41	182.764			
Total	191799.000	43				
Corrected Total	13230.605	42				
a. R Squared = ,434 (Adjusted R Squared = ,420)						

The F test results show that the calculated value of 31.392 is greater than the table value of 4.08, so Ho is rejected and Ha is accepted, meaning that the use of Wordscapes application has a significant effect on students' vocabulary mastery. The Partial Eta Squared value of 0.434 shows an effect of 43.4%, which is included in the moderate effect category.

4. DISCUSSION

After the learning process was completed, a series of statistical analyses were conducted to determine the effectiveness of using the Wordscapes application. The first step was to test whether the data met the requirements for further analysis. The normality test using the Shapiro-Wilk method showed that the significance values of the pre-test and post-test in the experimental class (0.088 and 0.094) and in the control class (0.245 and 0.279) were all more than 0.05. This means that the data is normally distributed. The homogeneity test using the Levene Test also shows a significance value of more than 0.05, so it can be concluded that the data from both groups have the same variance or homogeneous.

After ensuring the data is normal and homogeneous, an Independent Samples T-Test was conducted. The results showed a t value of 5.603 with a significance of 0.000, greater than the t table (1.683) and smaller than 0.05. This indicates a significant difference between the experimental and control classes, where the experimental class using Wordscapes experienced a higher improve in vocabulary mastery.

This finding is in line with the results of previous studies by (Oktamia Anggraini Putri, 2022) who stated that Wordscapes effectively improved students vocabulary mastery

and learning enthusiasm. In conclusion, the Wordscapes application has a significant effect on vocabulary mastery of seventh grade students of MTs Al-Um North Bengkulu. This result supports the theory of game-based learning and is expected to be a reference for teachers in creating more interesting and effective English learning.

5. CONCLUSION AND SUGGESTION

Based on the results of research on seventh grade students of MTs Al-Um Boarding School Nort Bengkulu, the use of Wordscapes application is proven to have a significant effect on improving students vocabulary mastery. The experimental class was treated using Wordscapes for four meetings, while the control class continued to use conventional methods. The pre-test and post-test results showed a greater improvement in the experimental class, with the average post-test score reaching 75.72, compared to the control class which only reached 52.61.

Statistical analysis using SPSS version 28 showed a calculated F value of 31.392, greater than the F table (4.08), with a Partial Eta Squared value of 43.4%. This shows that Ho is rejected and Ha is accepted, which means that the use of Wordscapes has a significant effect on students' vocabulary acquisition. Thus, it can be concluded that the Wordscapes application is effective in improving the vocabulary mastery of VII grade students at MTs Al-Um Nort Bengkulu.

As for the implications, for teachers, it is recommended to start utilizing interactive technology-based learning media such as Wordscapes to make learning more interesting. For students, the use of this media can increase engagement in learning. Schools are also encouraged to start integrating technology in the learning process in a more structured manner. For future researchers, this result can be a reference to develop game based learning media in other aspects of English. Suggestions from this study include the need for further research with a longer duration to see the long-term impact, teachers can combine Wordscapes with other methods for optimal results, and schools are expected to provide training to teachers regarding the utilization of digital learning media.

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