



Jurnal Review Pendidikan dan Pengajaran  
<http://journal.universitaspahlawan.ac.id/index.php/jrpp>  
 Volume 6 Nomor 2, 2023  
 P-2655-710X e-ISSN 2655-6022

Submitted : 04/08/2023  
 Reviewed : 11/08/2023  
 Accepted : 12/08/2023  
 Published : 26/08/2023

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## **THE EFFECTIVENESS OF ONLINE ANAGRAM GAME ON STUDENTS' VOCABULARY MASTERY**

### **Abstrak**

Pentingnya mencapai kemahiran dalam bahasa Inggris berfungsi sebagai faktor motivasi bagi para siswa, mendorong keterlibatan aktif mereka dalam proses pembelajaran. Hal ini melibatkan sejumlah elemen penting, dengan penguasaan kosakata menjadi kontributor utama, memfasilitasi pengembangan keterampilan berbahasa secara menyeluruh. Namun, sejumlah siswa mengalami kesulitan yang mencolok, terutama dalam hal penguasaan kosakata, yang sering kali berasal dari persepsi akan kompleksitas tugas tersebut. Tantangan ini secara signifikan tersebar luas di antara siswa kelas delapan di MTs Wahid Hasyim Balung. Akibatnya, muncul kebutuhan mendesak akan pendekatan pengajaran yang inovatif dan kreatif, di mana strategi berakar pada gamifikasi muncul sebagai jalur yang menjanjikan. Penelitian ini menyelidiki efektivitas pemanfaatan Permainan Anagram sebagai solusi potensial. Tujuan utama dari studi ini adalah untuk mengevaluasi dan membandingkan tingkat penguasaan kosakata antara siswa yang menerima instruksi melalui permainan anagram daring dengan rekan-rekan mereka yang terpapar pada metode pedagogis alternatif. Penelitian ini menggunakan pendekatan kualitatif dengan desain kuasi-eksperimental. Analisis data melibatkan uji T-sample independen dan uji T-sample berpasangan. Hasil menunjukkan bahwa permainan anagram daring secara efektif merangsang pemerolehan kosakata baru di kalangan siswa.

**Kata Kunci:** *Game Online*, Permainan Anagram, Penguasaan Kosakata Siswa.

### **Abstract**

The importance of achieving proficiency in the English language serves as a motivating factor for students, prompting their active involvement in the learning process. This encompasses a range of crucial elements, with vocabulary mastery standing out as a key contributor, facilitating a well-rounded development of language skills. However, a notable number of students encounter difficulties, particularly when it comes to mastering vocabulary, often stemming from the perceived intricacy of the task. This challenge is notably widespread among eighth-grade students at MTs Wahid Hasyim Balung. Consequently, there arises a pressing need for inventive and innovative teaching approaches, wherein strategies rooted in gamification emerge as a promising avenue. This research delves into the effectiveness of leveraging the Anagram Game as a potential remedy. The primary objective of the study is to evaluate and compare the level of vocabulary mastery among students who receive instruction through online anagram games with that of their counterparts who are exposed to alternative pedagogical methods. This study employed a qualitative approach with a quasi-experimental design. Data analysis involves independent sample T-test and paired sample T-test. Results indicate that the online anagram game effectively stimulates the acquisition of new vocabulary among students.

**Keywords:** Online Game; Anagram Game; Students' Vocabulary Mastery

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## INTRODUCTION

The English language plays an undeniable role as a global medium that provides extensive access to various educational, professional, and cultural opportunities in this modern era. Amid the rising tide of globalization and cross-cultural communication, proficiency in English has become an unavoidable necessity. One of the crucial components in mastering the English language that cannot be overlooked is vocabulary mastery. Fauziati (2002) stated that vocabulary is crucial to language and essentially significant to language learners in general. The ability to master English vocabulary goes beyond a mere process of memorizing new words; it serves as a fundamental cornerstone for comprehending and conveying messages accurately and effectively. According to Kiray (in Muhlise & Akyay, 2009), foreign language learners' lack of vocabulary is one of the main reasons why they do not like reading for pleasure in a foreign language. A diverse and extensive vocabulary enables students to communicate more fluidly, translate information with precision, and enhance their reading and writing skills with profound understanding.

The significance of mastering vocabulary in English extends beyond communication skills; it also contributes to enhancing thinking abilities, learning capabilities, and social interactions. Students equipped with a strong vocabulary can more easily comprehend English texts, both written and spoken, and effectively express ideas and opinions in a clear and structured manner. In the environment of Madrasah Tsanawiyah (MTs) Wahid Hasyim Balung, the importance of vocabulary mastery in English is highly relevant. As an educational institution committed to providing quality education, MTs Wahid Hasyim Balung carries the responsibility of preparing students to face the challenges of an increasingly complex global world. Proficiency in the English language is a key aspect of this effort, and vocabulary mastery serves as its foundational element.

However, the reality on the ground reveals that many students face difficulties in achieving adequate vocabulary mastery. Several factors can contribute to this situation, including suboptimal teaching methods, inadequate curriculum, and a lack of sufficient English language interaction outside the school environment. The struggles in comprehending and using English vocabulary can hinder comprehensive language development among students. Therefore, it is crucial to address these challenges through innovative and effective teaching approaches. One strategy that can be adopted is the incorporation of educational games, particularly the anagram game, as a tool to enhance vocabulary mastery in English. Such games not only encourage students to learn in an enjoyable manner but also help sharpen their cognitive and creative skills.

This research aims to address significant questions concerning the importance of vocabulary mastery in English among students at MTs Wahid Hasyim Balung. In this context, the primary objective of the study is to evaluate whether the online implementation of the anagram game can enhance students' vocabulary mastery more effectively than other teaching methods. Additionally, this research aims to assess the significant impact of using the online anagram game on students' vocabulary mastery. Through a holistic quantitative approach, this research will delve into the tangible impact of implementing the online anagram game in enhancing students' vocabulary mastery. The results of this study are expected to provide valuable insights for educators and stakeholders at MTs Wahid Hasyim Balung, while also promoting the adoption of more effective teaching strategies to prepare students for the challenges of an increasingly complex global world.

There are several previous studies related to this study. First, The thesis written by Lu'lu'ul Maknunah (2021) entitled "Exploring Make A Match technique on EFL Students' Vocabulary Mastery".<sup>14</sup> The research found a match technique on EFL vocabulary mastery which was implemented in the fifth grade students of MI Miftahul Ulum Jatisari Jenggawah. In this study, the researcher took a sample of 10 students, in collecting data in this research using interviews, observation, and documentation instruments. The results of the analysis of the data obtained can be concluded that making a match technique gave quite an effect in learning vocabulary, but the researcher gave suggestions for the next researcher to conduct the study using other techniques which motivate student EFL in learning vocabulary.

Sulistianingsih, Endang "The Effect of Anagram Game on Secondary Level Students' Reading Achievement. (2020) game in the reading achievement of class VII students. The population in this study consisted of six classes but the researcher only took 2 classes as a sample where one class was the experimental class and the second class was the control class, the control class used conventional techniques as the techniques often used by teachers when teaching. The results of this research Anagram was effective in teaching and learning reading. It happened since in Anagram implementation the students as the participants and the teacher as the facilitator. Because of that the researcher stated that this method is easier, useful and flexible for the teacher to apply because of no need for a lot of time, media, realia and place. So, this study gives recommendations for teachers and students to implement this method.

The thesis written by Nabila Hasanah (2020) entitled "Improving Students Vocabulary Mastery in Sentence Writing by Using Faster Thinking Game at 8BvClass of SMP Al- Falah Silo in Academic Year 2020/2021".<sup>16</sup> This research was conducted at Al-Falah Silo Middle School where eighth grade students were the research subjects. The method used in this research is class action research. So that in this research the researchers carried out observations, interviews, and surveys to find out the problems that existed in students, the results of the data

stated that students had problems with vocabulary mastery because then faster thinking games were implemented to solve these problems. Based on implementation results and data that has been obtained during observations in one cycle in 2 meetings. The results of this study stated that the game was a success with the number of data presentations 78% of students getting high scores. Nabila Hasanah "Improving Students Vocabulary Mastery in Sentence Writing by Using Faster Thinking Game at 8BvClass of SMP Al- Falah Silo in Academic Year 2020/2021(2020)

Journal written by R, Etika; A, Rita Meila; I, Ratna (2020)"Male and Female Students' Perception on the Use of Popular Song to Improve Students' Vocabulary Mastery".<sup>17</sup> In this study, the researcher used a case study qualitative research method to investigate the students' perception and the teachers' way to teach popular songs to improve students' vocabulary mastery. There are 2 research instruments used by researchers to collect data, namely observation and questionnaire. In this study the teacher gave audio in the form of popular music and at that time the students listened repeatedly. The results of the study stated that when listening to popular music students will hear several new vocabularies many times. Music language affects accent, grammar, memory, mood, enjoyment, and motivation.

Journal written by Rui L (2021)"Does Game-Based Vocabulary Learning APP Influence Chinese EFL Learners' Vocabulary Achievement, Motivation, and Self-Confidence?"<sup>18</sup> This journal is an experimental study in which the researcher uses 2 classes (groups), namely the experimental class and the control class. In this research the researcher wanted to know the effect of app games on Chinese EFL Learners' in increasing Vocabulary Achievement, Motivation, and Self-Confidence. To collect the data, researchers used pre-post tests and pre-post questionnaires. Results of the research that is the game-based vocabulary learning APP benefited students in vocabulary achievement, motivation, and selfconfidence.

The thesis written by Annisa'ul Afidah (2021) entitle "Student Difficulties in Vocabulary Mastery at Eleventh Grade of Sekolah Menengah Kejurusan (SMK) Ainul Yakin Ajung Jember Academic Year 2021/2022."<sup>19</sup> in this research the researcher focus on student difficulty in vocabulary mastery and know what is the factor what make student difficult in vocabulary mastery, to knowing that the researcher did the research at SMK Ainul Yakin Ajung on eleventh grade and the research subject just seven students cause the researchers used purposive sampling. The researcher used quantitative descriptive as the research approach, the data was collected by Observation, Interview, and document review. The result of this research are 1) the students have difficulties in translating words or sentences in English into Indonesia, pronunciation, misspelling, remembering and memorize; 2) and the factors that caused student difficulty in mastering vocabulary were reluctant to open dictionaries, less interested, and did not practice speaking.

In conclusion, the importance of mastering vocabulary in the English language goes beyond being a mere linguistic skill; it is an investment in the future education and professional

success of students. With an innovative and vocabulary-focused approach to learning, it is anticipated that students at MTs Wahid Hasyim Balung will be better equipped to overcome the challenges of acquiring strong English language proficiency. This will open up broader opportunities and enable them to confidently navigate the global world with exceptional skills and confidence.

**METHODOLOGY**

The type of research approach that was used in this research was quantitative research. Quantitative research method is one type of research approach whose specifications are systematic, planned and clearly structured from the beginning to the creation of the research design. In 2017 Sugiyono stated that “A research method based on the philosophy of positivism is used to research on a particular population or sample, data collection using research instruments, data analysis is quantitative/statistical in nature, with the aim of testing the established hypotheses”.<sup>41</sup> The purpose of this method is to test the hypothesis from the data that had been collected in accordance with previous theories and concepts. According to Creswell, he stated in this case, the researcher verifies the theory by defining specific hypotheses and gathering information to confirm or deny the assumptions. This research was an experimental research. Experimental research tries to examine whether there was a causal relationship or not. The aim of the experimental research was to find the effect of treatment on increasing learning creativity. The type of experimental used in this research is quasi experimental. Verification of the results was obtained by comparing the experimental class with the control class (non-experimental), where the experimental class was given online anagram game as treatment in the process of mastering vocabulary while the control class was not given online anagram game treatment.

Table 3.1 Pre-Test Post-Test Control Group Design

Class	Pre-Test	Treatment	Post-Test
Experiment	O1	X	O2
Control	O3		O4

(John Creswell W: 2018)

Notes:

O1 : pre-test of experimental group before applying treatment

O2 : post-test of experimental group after applying treatment

O3 : pre-test of control group before applying treatment

O4 : post-test of control group before applying treatment

X : Online Anagram Game treatment

According to Sugiyono, population is the area of generalization consisting of objects/subjects that have quantity & characteristics determined by the researcher to be learned and then a conclusion is drawn. Creswell defines that what is called a population is a group of individuals who have the same characteristics. In this research the population were all eighth grade students of MTs Wahid Hasyim Balung which consists of four classes, 8A, 8B, 8C, and 8D in total number 106 students.

The sample is part of the number and characteristics possessed by population. According to Creswell, sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population.<sup>46</sup> The sample of this research was taken from two classes, one class as the experimental class and the other one as the control class. The researcher used purposive sampling in this research, due to certain considerations.<sup>47</sup> In determining the research sample, it was recommended by the English teacher of MTs Wahid Hasyim Balung that class A as the experiment class and class B as the control class.

**Research Instruments**

Instrument is used to measure the value of the variable to be studied. The Instrument used in this research was a test that consisted of pretest and post-test. The test material is based on

standard competence (KI) and basic competencies (KD) of school based on the curriculum of junior high school eighth grade second semester of English subject. The instrument was used as a vocabulary test in the form of subjective test. The test consisted of three kinds of questions in the form of a writing test, where in the first form of questions students had to write down 25 vocabulary words that students memorized, in the second form of questions students were asked to rearrange letters, and in the third form of questions students were asked to find words on the table. Total question on the test is 50 questions that have to write correct word, with the score as follow:

Students score =  $\text{Accepted score} / \text{MaximalScore} \times 100$

(Arikunto:2009)

No.	Score	Criteria
1	80-100	Very Good
2	70-79	Good
3	60-69	Fair
4	0-59	Fail

a. Validity instrument

Instrument validity is an instrument test before the instrument is given to find out whether the instrument is valid or not, an instrument is said to be valid if the instrument can be used to measure what it is supposed to measure<sup>48</sup>. Furthermore, according to Creswell validity refers to the reliability of conclusions derived regarding the cause and effect of a relationship between an independent and dependent variable.<sup>49</sup> In order to determine whether the instrument was valid to be used the researcher examine its validity prior to administering it, in this research researchers used contain validity. Content validity is a type of validity that is estimated through testing the appropriateness of the test content through rational analysis by a competent panel or through expert judgment.

b. Reliability instrument

After testing the validity of instrument, then a reliability test was performed on the instrument to test whether the instrument was reliable or not. Reliable instrument is an instrument which when used several times to measure the same object will produce the same data.<sup>50</sup> In a while, if test takers' results fluctuate noticeably when administered by the same individual at different times, the test's degree of reliability may suffer. The reliability of the test was established by administering a try out. There are many types of reliability test, in this research internal consistency was used to test the reliability instrument. Testing the reliability of instruments with internal consistency was done by testing the instrument with one try out, then the data obtained was analyzed with certain techniques.<sup>51</sup> In this research the technique was used to analyze the reliability by using Cronbach Alpha through SPSS (special package of the social science) version 25 software, and the formula of Cronbach Alpha.

2. Data Collection Technique

a. Pre-Test

The pre-test was administered before treatment. The pretest was given to both experimental class and control class in order to know the students' vocabulary mastery. Both experimental and control classes were asked to answer a test that had been prepared by the researcher. The question consists of four kinds of questions where the aim is to find out how many students can mention the word according to the instructions of instrument

b. Treatment

The treatment was conducted after pre-test. In experimental class, the student was taught by using anagram game application as treatment, the aim of the treatment is to stimulate students to find new words then students are asked to look for the meaning of

these words to after delivery of material. The treatment was given in 2-3 meetings, while the control class was not given the same treatment.

c. Post-Test

Post-test was given after experimental class treatment had been completed. This post-test was given to both experimental and control classes. The aim of this test is to get the main scores of experimental class and control class. It was applied to know the effect of anagram game application for students' vocabulary mastery. The question consists of four kinds of questions where the aim is to find out how many students can mention the word according to the instructions of instrument.

#### Data Analysis Technique

Data analysis could be done when all the data has been collected. Before managing the data the researcher must classify data based on variables and types of respondents, tabulate data based on variables from all respondents, present data from the variables studied and perform calculations to answer the problem formulation and test hypotheses.<sup>54</sup> To analyze the data the researcher used the t-test formula in the SPSS software version 25, but before the t-test the researcher conducted the analysis descriptive statistics, normality and homogeneity test first. 1. Descriptive Statistic Data analysis referred to descriptive statistics describes procedures including data gathering, data presentation, data processing, and display of data in tables, graphs, or other formats. <sup>54</sup> Sugiono. *Metodologi Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: ALFABETA(2017).p.147 46 2. Normality test The normality test was carried out to test whether the independent/independent variable/(X) and the dependent/dependent variable/(Y) in the regression model have a normal distribution or not.<sup>55</sup> In this research SPSS was used by the researcher. The normality test could be carried out with the Kolmogorov-Smirnov test, the conditions that must be met when carrying out the one Sample Kolmogorov-Smirnov test are: a) If the significance value is  $> 0.05$  then the data used in the study has a normal distribution. b) If the significance value is  $0.05$ , it means that the data is homogeneous. <sup>55</sup> Juliandi et al., 2014 <sup>56</sup> Ananda, Rusydi & Fadhli, Muhammad. *statistica pendidikan*. (2018) 47 b). If the significance value is  $0.05$ , then null hypothesis ( $H_0$ ) is accepted and alternative hypothesis ( $H_a$ ) is rejected. Then, paired sample t-Test is a different test of two paired samples. Sample paired are the same subject but have different treatment, usually this test was used for sample that have test before gave treatment or pre-test and test that has been given treatment or post test. This test is used to study treatment effectiveness. The basis for making a decision to accept or reject null hypothesis ( $H_0$ ) in this test are as follows. <sup>48</sup> 1. If the significant value (2-tailed)  $> 0.05$  that mean null hypothesis ( $H_0$ ) is accepted or alternative hypothesis ( $H_a$ ) is rejected (insignificant performance difference). 2. If the significant value (2-tailed).

## RESULT AND DISCUSSION

The result of the research that had been conducted by the researcher on student vocabulary mastery at eighth grade of MTs Wahid Hasyim Balung. The research conducted by the researcher on two classes, those were experiment class that consist of 21 students and control class that consist of 28 students. Both of class gave pre-test by the researcher the aim of the test is to know how much English vocabulary that students memorize. On the pre-test researcher gave questions which had been provided. After conducting the pre-test, the researcher gave a treatment in the class.

At the treatment time, both of classes were given different treatment. In experiment class researcher gave online anagram game as the treatment on mastering vocabulary. At the treatment time students in experiment class were asked to made small group consisting of 3-4 students then asked to open the anagram application that had been download and played it, if each group had found the word they had to find out the meaning of the word. While in control class researcher gave conventional treatment. Researcher asked the student to write some word then memorize it.

After doing the treatment the researcher gave post-test for experiment class and control class. The aim of the post test is to know how much English vocabulary that students got after

treatment and to knowing the effectiveness of the anagram game treatment. Data from the pre-test and post-test of both class' students were gathered. Then created two tables from the data obtained. Table 4.1 showed the students performance and grades in the experimental class, while Table 4.2 showed the students' performance and grades in the control class. Each table had four columns: the first column showed the total number of students, the second column showed the subject, third and fourth columns showed the results of the pre- and post-tests. In the pre-test and post-test result columns (the third and fourth columns) are divided into two columns which show the words gained and score obtained

Table 4.1 Score of Experiment Class

No.	Subject	Pre-test		Post-test	
		Words Gained	score	Words Gained	score
1.	AW	38	76	45	90
2.	ATN	43	86	47	94
3.	ADU	42	84	44	88
4.	AHJL	40	80	42	84
5.	DAS	39	78	48	96
6.	DRPW	46	92	48	96
7.	IM	22	44	42	84
8.	K	25	50	41	82
9.	KAR	32	64	42	84
10.	MAW	22	44	43	86
11.	MZMS	39	78	45	90
12.	MDO	30	60	41	82
13.	MR	23	46	43	86
14.	MFAY	35	70	42	84
15.	MK	29	58	43	86
16.	NIM	45	90	47	94
17.	NSCH	41	82	45	90
18.	NZR	20	40	43	86
19.	NHTF	42	84	45	90
20.	SAZ	39	78	44	88
21.	ZAF	32	64	44	88
<b>Total</b>		724	1448	924	1848
<b>Average</b>			68.952381		88

Table 4.2 Score of Control Class

No.	Subject	Pre-test		Post-test	
		Words Gained	score	Words Gained	score
1.	AIU	33	66	34	68
2.	ARR	29	58	30	60
3.	AUA	25	50	26	52
4.	A	21	42	24	48
5.	ADS	29	58	31	62
6.	AFNY	36	72	33	66
7.	BK	12	24	23	46
8.	DPAW	36	72	29	58
9.	DKPAF	23	46	29	58
10.	IM	18	36	24	48
11.	KL	23	46	31	62

12.	KR	15	30	23	46
13.	LF	34	68	28	56
14.	MCK	23	46	27	54
15.	MNF	23	46	29	58
16.	MV	22	44	33	66
17.	MAM	21	42	30	60
18.	MFH	28	56	29	56
19.	MN	8	16	24	48
20.	MRH	25	50	29	58
21.	MSI	25	50	27	54
22.	NS	16	32	30	60
23.	NUP	16	32	34	68
24.	RAR	17	34	29	58
25.	SJS	34	68	34	68
26.	WA	25	50	27	54
27.	WRS	15	30	34	68
28.	MSR	28	56	28	56
<b>Total</b>		660	1320	810	1618
<b>Average</b>			47.142857		57.785714

After collecting the pre-test and post-test scores, the next procedure is analyzing the data. For analyzing the data, researchers applied parametric statistics by using SPSS software version 25. In this calculation phase the data was used to calculate by the researcher is combining the data score from pre-test and post-test in experiment class and control class, the data as follows:

Table 4.3 Data of Two Classes

No	Experiment Class		Control class	
	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
1	76	90	66	68
2	86	94	58	60
3	84	88	50	52
4	80	84	42	48
5	78	96	58	62
6	92	96	72	66
7	44	84	24	48
8	50	82	72	58
9	64	84	46	58
10	44	86	36	46
11	78	90	46	62
12	60	82	30	46
13	46	86	68	56
14	70	84	46	54
15	58	86	46	58
16	90	94	44	66
17	82	90	42	60
18	40	86	56	56
19	84	90	16	48
20	78	88	50	58
21	64	88	50	54
22			32	60
23			32	68



24			34	58
25			68	68
26			50	54
27			30	68
28			56	56

The researcher used SPSS software version 25 to evaluate the data above based on the findings of the study which was done over the course of a month, in classes 8A which served as the experimental class and 8B which served as the control class at MTs Wahid Hasyim Balung. And the outcome is as follows:

1. Descriptive Analysis

The researcher calculated the data in this phase using SPSS software version 25 by combining the pre- and post-test data scores for the experiment class and the control class.

The following data's outcome:

	N	Minimum	Maximum	Mean	Std. Deviation
Pretestexperiment	21	40	92	68.95	16.621
Posttestexperiment	21	82	96	88.00	4.290
Pretestcontrol	28	16	72	47.14	14.661
Posttestcontrol	28	46	68	57.79	6.696
Valid N (listwise)	21				

The data show above is data from the outcome of descriptive analysis, that cover: minimum score, maximum score, mean, and standard deviation. By looking at the data above we can find out mean of pre-test and post-test in experiment class and control class. The post test of experiment class has significant differences from pre-test result. This result suggests that the application of anagram games or online anagram game has an effect on students' vocabulary mastering in the eighth grade of MTs Wahid Hasyim Balung in the academic year 2022–2023.

2. Normality Test

The normalcy test is the second step in the data analysis process. In this research investigation, a normality test was carried out to verify the absolute before statistical analysis. Normality test is used to determine whether the data is normally distributed or not. There are two ways of performing the normality test in this phase those are Shapiro-Wilk and Kolmogrov-Smirnov. We can use both of them or choose one of them to be used. And in this research the researcher has chosen Kolmogrov-Smirnov as normality test in this researcher. Those outcomes are:

**Table 4.5 Tests of Normality**

Class	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	Df	Sig.	Statistic	df	Sig.	
students learning outcome	pre-test experiment class	.188	21	.051	.916	21	.071
	post-test experiment class	.156	21	.200*	.924	21	.107
	pre-test control class	.101	28	.200*	.972	28	.626
	post-test control class	.107	28	.200*	.939	28	.103

The aforementioned normality test only considered the significance value of the Kolmogorov-Smirnov. According to the table, the results of the normality test indicated that the pre-test experiment class's significance value is  $0.051 > 0.05$ , the post-test experiment class's significance value is  $0.200 > 0.05$ , the pre-test control class's significance value is  $0.200 > 0.05$ , and the post-test control class's significance value is  $0.200 > 0.05$ . The data appears to be normally distributed according to the Kolmogorov-Smirnov normality test, as indicated by the significance value of  $>0.05$ . As a result, one of the prerequisites for the t-test has been completed.

#### Homogeneity Test

This section performs a homogeneity test to determine the homogeneity or heterogeneity of the post-test data both the experimental class and the control class. Homogeneity test is one of requirements to carry out an independent sample t-test is homogeneous data. These are the outcomes:

Table 4.6 Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
students learning outcome	Based on Mean	3.313	1	47	.075
	Based on Median	3.145	1	47	.083
	Based on Median and with adjusted df	3.145	1	39.602	.084
	Based on trimmed mean	3.254	1	47	.078

The significance based on mean is known to be  $0,075 > 0,05$  based on the outcomes of the aforementioned data. Therefore, it could be said that the post- test results for the experimental class and the control class are homogenous. As a result, one of the prerequisites for the independent sample t-test has been completed.

#### E. Discussion

This research study used to determine the effect of an online anagram game on eighth-grader MTs Wahid Hasyim Balung's vocabulary mastery the academic year of 2109–2020. The researcher employed a test, especially vocabulary mastery test, to collect data. The test was handed out to eighth grade students in the experimental class and the control class. To compare the scores students received before and after treatment (online anagram), the researcher handed out pre-test and post-tests in the experimental class. The researcher used conventional teaching techniques to teach the material to the control class.

According to descriptive test the data that was taken from 21 student in the experimental class and 28 students in control class, it showed that the mean score of pre-test and post-test in experiment class and control class is differences. In experiment class mean pre-test score before using online anagram games to teach the class was 68.95, with the student's minimum score being 40 and their maximum being 92. It indicates that the data's average or mean is still quite low. After the researcher used an online anagram game to teach, the post-test's data analysis obtained a mean score of 88. The post-test has a minimum score requirement of 82 and a maximum score requirement of 96. Meanwhile in control class the mean pre-test score 47.14 with the student's minimum score being 16 and their maximum being 72, It indicates that the data's average or mean is still very low. Then the post-test's data analysis obtained a mean score of 57.79. The post-test has a minimum score requirement of 46 and a maximum score requirement of 68. It could be conclude that the used of online anagram game have positive effect on students vocabulary mastery. It is proven by result obtained by students' pretest and posttest score.

After analyzing the data using descriptive test, the next test are normality and homogeneity test. Based on table 4.5, it showed that the data of experiment and control class were normally distributed. The significant value of pre-test experiment class  $0.051 > 0.05$ , the significant value of post-test experiment class  $0.200 > 0.05$ , The significant value of pre-test control class  $0.200 > 0.05$ , the significant value of post-test control class  $0.200 > 0.05$ . Meanwhile on table 4.6 it

showed the outcome of homogeneity of the data based on mean is  $0.075 > 0.05$  it mean the data have same variance.

And the last analyze is T-test. On table 4.8 and table 4.9 it showed the outcome of independent sample t-test the result is  $0.000 < 0.05$  it mean null hypotheses ( $H_0$ ) is rejected and alternative hypotheses ( $H_a$ ) is accepted. Based on Sinaga, Herman and Pasaribu stated that their research was successful because the t-count was higher than the t-table so it could be concluded that online anagram game had a significant effect, so it can be conclude that, playing online anagram games is a very efficient approach to help students increase their vocabulary knowledge. As a result, the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected, as stated in the hypotheses testing. Therefore, playing an online anagram game helps students study while having fun and improves their vocabulary, especially on triggering students to produce new vocabulary

## CONCLUSION

Based on the result of the research study that has discussed in the data analysis, hypotheses testing and discussion in the previous chapter, it can be concluded that the students who are taught by online anagram game got better vocabulary than those who are taught by other strategy. The statement is reinforced by the results of independent sample T-test calculations on SPSS software version 25, which shows the significant 2 tailed value is  $0.00 < 0.05$

Then there is a significant effect of using online anagram game on students' vocabulary mastery at eighth grade of MTs Wahid Hasyim Balung in academic year 2022/2023. The Effect is triggerin students to produce new vocabulary. The statement is reinforced by the results of paired sample T-test calculations on SPSS software version 25, which shows the significant 2 tailed value is  $0.00 < 0.05$ . That statement above also provement by the average score of the pre-test result before in the experimental class was 68.95 and the control class showed 47.14. After the researcher gave a treatment using online anagram game to the experimental class, the average score of the post-test result in the experimental class has an increased score from 68.95 to 88 while the post-test result of the control class showed that the average score of the control class was 57.79. From the statement before, it means that there is a different score between an experimental class after being treatment using online anagram game and control class that was given conventional treatment. The increasing scores of experimental class students in the post-test, it mean students triggering to product new vocabulary also has increased. It was seen from the post-test that the researchers had done. The researchers considered that students word Gained had greatly improved along with the application of anagram game to the treatment. Therefore, the use of anagram game given an effect on students vocabulary especially on triggering studentsto product new vocabulary.

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