CHAPTER IV

RESEARCH FINDING AND DISCUSSION

This chapter presents research findings and discussion. It is devided into the calculation of try-out test, the data description, the data analysis, the data interpretation and discussion.

4.1 The Calculation of Try-out Test

This analysis meant to find out the validity and reliability of the instrument before it was used as questions for pre-test and post-test. This test was conducted on January 08, 2020. In this part, the data shows the calculation validity and reliability of try-out test.

1. The Validity of Try-out Test

Formula:

$$r_{xy} = \frac{(N.\sum XY) - (\sum X.\sum Y)}{\sqrt{\{N.\sum X^2 - (\sum X)^2\}\{N.\sum Y^2 - (\sum Y)^2\}}}$$

The item test is valid if $r_{xy} > r_{table}$

$r_{table} = 0.349$

The following is the example of counting the validity of item number 15. The value of r_{xy} is as follows:

$$r_{xy} = \frac{(N.\sum XY) - (\sum X.\sum Y)}{\sqrt{\{N.\sum X^2 - (\sum X)^2\}\{N.\sum Y^2 - (\sum Y)^2\}}}$$

$$= \frac{(32.826) - (28.906)}{\sqrt{\{32.28 - (28)^2\}\{32.27118 - (906)^2\}}}$$

$$= \frac{(26432) - (25368)}{\sqrt{\{896 - 784\}\{867776 - 820836\}}}$$

$$= \frac{1064}{\sqrt{\{112\}\{46940\}}}$$

$$= \frac{1064}{\sqrt{5257280}}$$

$$= \frac{1064}{2292} = 0.464$$

From the calculation of item number 15 above, it shows that the try-out test was valid since it is r_{xy} = 0.464 were higher than r_{table} = 0.349.

Table 4.1

The Validity Computation Using SPSS Calculation

		b1	b2	b3	b4	b5	b6	b7
b1	Pearson Correlation	1	-.088	.323	.252	.262	.163	-.126
	Sig. (2-tailed)		.631	.071	.164	.147	.374	.492
	N	32	32	32	32	32	32	32
b2	Pearson Correlation	-.088	1	.012	.318	.234	.115	.064
	Sig. (2-tailed)	.631		.948	.076	.197	.531	.729
	N	32	32	32	32	32	32	32
b3	Pearson Correlation	.323	.012	1	-.063	.030	.178	.063
	Sig. (2-tailed)	.071	.948		.733	.870	.330	.733
	N	32	32	32	32	32	32	32
b4	Pearson Correlation	.252	.318	-.063	1	.160	.000	.250

	Sig. (2-tailed)	.164	.076	.733		.381	1.000	.168
	N	32	32	32	32	32	32	32
b5	Pearson Correlation	.262	.234	.030	.160	1	-.041	.160
	Sig. (2-tailed)	.147	.197	.870	.381		.822	.381
	N	32	32	32	32	32	32	32
b6	Pearson Correlation	.163	.115	.178	.000	-.041	1	.258
	Sig. (2-tailed)	.374	.531	.330	1.000	.822		.154
	N	32	32	32	32	32	32	32
b7	Pearson Correlation	-.126	.064	.063	.250	.160	.258	1
	Sig. (2-tailed)	.492	.729	.733	.168	.381	.154	
	N	32	32	32	32	32	32	32
Total	Pearson Correlation	.387*	.422*	.293	.489**	.460**	.389*	.397*
	Sig. (2-tailed)	.029	.016	.104	.004	.008	.028	.024
	N	32	32	32	32	32	32	32

Item number 8 to 14

		b8	b9	b10	b11	b12	b13	b14
b8	Pearson Correlation	1	.076	.378*	.189	.024	.393*	.029
	Sig. (2-tailed)		.681	.033	.301	.896	.026	.877
	N	32	32	32	32	32	32	32
b9	Pearson Correlation	.076	1	.000	-.258	.064	.289	.000
	Sig. (2-tailed)	.681		1.000	.154	.729	.109	1.000
	N	32	32	32	32	32	32	32

b10	Pearson Correlation	.378*	.000	1	.086	-.064	.289	.378*
	Sig. (2-tailed)	.033	1.000		.640	.729	.109	.033
	N	32	32	32	32	32	32	32
b11	Pearson Correlation	.189	-.258	.086	1	-.181	-.050	.358*
	Sig. (2-tailed)	.301	.154	.640		.322	.787	.044
	N	32	32	32	32	32	32	32
b12	Pearson Correlation	.024	.064	-.064	-.181	1	.110	.072
	Sig. (2-tailed)	.896	.729	.729	.322		.548	.695
	N	32	32	32	32	32	32	32
b13	Pearson Correlation	.393*	.289	.289	-.050	.110	1	.000
	Sig. (2-tailed)	.026	.109	.109	.787	.548		1.000
	N	32	32	32	32	32	32	32
b14	Pearson Correlation	.029	.000	.378*	.358*	.072	.000	1
	Sig. (2-tailed)	.877	1.000	.033	.044	.695	1.000	
	N	32	32	32	32	32	32	32
Total	Pearson Correlation	.449*	.092	.462**	.427*	.160	.378*	.562**
	Sig. (2-tailed)	.010	.615	.008	.015	.381	.033	.001
	N	32	32	32	32	32	32	32

Item number 15 to 21

		b15	b16	b17	b18	b19	b20	b21
b15	Pearson Correlation	1	.203	-.166	.355*	.048	.238	.265
	Sig. (2-tailed)		.266	.365	.046	.796	.189	.143
	N	32	32	32	32	32	32	32
b16	Pearson Correlation	.203	1	-.087	-.128	.365*	.149	.389*
	Sig. (2-tailed)	.266		.635	.487	.040	.417	.028
	N	32	32	32	32	32	32	32
b17	Pearson Correlation	-.166	-.087	1	.255	-.323	.434*	-.012
	Sig. (2-tailed)	.365	.635		.159	.071	.013	.948
	N	32	32	32	32	32	32	32
b18	Pearson Correlation	.355*	-.128	.255	1	-.308	.323	.267
	Sig. (2-tailed)	.046	.487	.159		.087	.071	.140
	N	32	32	32	32	32	32	32
b19	Pearson Correlation	.048	.365*	-.323	-.308	1	-.270	.168
	Sig. (2-tailed)	.796	.040	.071	.087		.135	.357
	N	32	32	32	32	32	32	32
b20	Pearson Correlation	.238	.149	.434*	.323	-.270	1	.168
	Sig. (2-tailed)	.189	.417	.013	.071	.135		.357
	N	32	32	32	32	32	32	32
b21	Pearson Correlation	.265	.389*	-.012	.267	.168	.168	1
	Sig. (2-tailed)	.143	.028	.948	.140	.357	.357	
	N	32	32	32	32	32	32	32
Total	Pearson Correlation	.464**	.379*	.191	.419*	.022	.422*	.527**

	Sig. (2-tailed)	.007	.032	.294	.017	.904	.016	.002
	N	32	32	32	32	32	32	32

Item number 22 to 28

		b22	b23	b24	b25	b26	b27	b28
b22	Pearson Correlation	1	.162	-.141	.162	-.055	.271	-.071
	Sig. (2-tailed)		.376	.442	.376	.764	.133	.699
	N	32	32	32	32	32	32	32
b23	Pearson Correlation	.162	1	-.020	-.097	.109	.342	-.109
	Sig. (2-tailed)	.376		.916	.597	.553	.056	.553
	N	32	32	32	32	32	32	32
b24	Pearson Correlation	-.141	-.020	1	-.228	-.059	.114	.059
	Sig. (2-tailed)	.442	.916		.210	.747	.536	.747
	N	32	32	32	32	32	32	32
b25	Pearson Correlation	.162	-.097	-.228	1	.260	.173	.194
	Sig. (2-tailed)	.376	.597	.210		.150	.343	.287
	N	32	32	32	32	32	32	32
b26	Pearson Correlation	-.055	.109	-.059	.260	1	.109	.129
	Sig. (2-tailed)	.764	.553	.747	.150		.553	.480
	N	32	32	32	32	32	32	32
b27	Pearson Correlation	.271	.342	.114	.173	.109	1	.170
	Sig. (2-tailed)	.133	.056	.536	.343	.553		.353
	N	32	32	32	32	32	32	32
b28	Pearson Correlation	-.071	-.109	.059	.194	.129	.170	1

	Sig. (2-tailed)	.699	.553	.747	.287	.480	.353	
	N	32	32	32	32	32	32	32
Total	Pearson Correlation	.108	.091	.160	.438*	.413*	.419*	.364*
	Sig. (2-tailed)	.556	.619	.383	.012	.019	.017	.041
	N	32	32	32	32	32	32	32

Item number 29 to 35

		b29	b30	b31	b32	b33	b34	b35
b29	Pearson Correlation	1	-.236	.160	-.209	.028	.190	.120
	Sig. (2-tailed)		.193	.382	.252	.879	.297	.512
	N	32	32	32	32	32	32	32
b30	Pearson Correlation	-.236	1	-.124	.000	.153	.072	.000
	Sig. (2-tailed)	.193		.498	1.000	.403	.695	1.000
	N	32	32	32	32	32	32	32
b31	Pearson Correlation	.160	-.124	1	.197	-.080	-.071	.418*
	Sig. (2-tailed)	.382	.498		.279	.664	.699	.017
	N	32	32	32	32	32	32	32
b32	Pearson Correlation	-.209	.000	.197	1	-.270	-.191	.144
	Sig. (2-tailed)	.252	1.000	.279		.136	.295	.431
	N	32	32	32	32	32	32	32
b33	Pearson Correlation	.028	.153	-.080	-.270	1	.129	-.078
	Sig. (2-tailed)	.879	.403	.664	.136		.483	.672
	N	32	32	32	32	32	32	32
b34	Pearson Correlation	.190	.072	-.071	-.191	.129	1	-.037

	Sig. (2-tailed)	.297	.695	.699	.295	.483		.842
	N	32	32	32	32	32	32	32
b35	Pearson Correlation	.120	.000	.418*	.144	-.078	-.037	1
	Sig. (2-tailed)	.512	1.000	.017	.431	.672	.842	
	N	32	32	32	32	32	32	32
Total	Pearson Correlation	.409*	.059	.423*	.194	.151	.377*	.410*
	Sig. (2-tailed)	.020	.747	.016	.288	.411	.034	.020
	N	32	32	32	32	32	32	32

Item number 36 to 40

		b36	b37	b38	b39	b40
b36	Pearson Correlation	1	-.063	.004	.129	.021
	Sig. (2-tailed)		.733	.983	.480	.911
	N	32	32	32	32	32
b37	Pearson Correlation	-.063	1	-.063	.188	.066
	Sig. (2-tailed)	.733		.733	.303	.721
	N	32	32	32	32	32
b38	Pearson Correlation	.004	-.063	1	-.255	-.152
	Sig. (2-tailed)	.983	.733		.159	.405
	N	32	32	32	32	32
b39	Pearson Correlation	.129	.188	-.255	1	.111
	Sig. (2-tailed)	.480	.303	.159		.544
	N	32	32	32	32	32
b40	Pearson Correlation	.021	.066	-.152	.111	1
	Sig. (2-tailed)	.911	.721	.405	.544	
	N	32	32	32	32	32
Total	Pearson Correlation	.382*	.065	.071	.395*	.412*

	Sig. (2-tailed)	.031	.725	.699	.025	.019
	N	32	32	32	32	32

Item number 41 to 45

		b41	b42	b43	b44	b45
b41	Pearson Correlation	1	-.063	.133	.038	-.014
	Sig. (2-tailed)		.733	.469	.836	.941
	N	32	32	32	32	32
b42	Pearson Correlation	-.063	1	.332	.257	-.234
	Sig. (2-tailed)	.733		.064	.155	.197
	N	32	32	32	32	32
b43	Pearson Correlation	.133	.332	1	.602**	.072
	Sig. (2-tailed)	.469	.064		.000	.693
	N	32	32	32	32	32
b44	Pearson Correlation	.038	.257	.602**	1	.120
	Sig. (2-tailed)	.836	.155	.000		.512
	N	32	32	32	32	32
b45	Pearson Correlation	-.014	-.234	.072	.120	1
	Sig. (2-tailed)	.941	.197	.693	.512	
	N	32	32	32	32	32
Total	Pearson Correlation	.150	.358*	.460**	.453**	.398*
	Sig. (2-tailed)	.412	.044	.008	.009	.024
	N	32	32	32	32	32

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The analysis the other items of try-out test was presented in the following table, it can be seen as follows:

Table 4.2

The Validity of Try-out Instrument

Criteria	Number Item of Try-out Test	The Total Number
Valid	1,2,4,5,6,7,8,10,11,13,14,15,16, 18,20,21,25,26,27,28,29,31,34, 35,36,39,40,42,43,44,45	31
Invalid	3,9,12,17,19,22,23,24,30,32,33, 37,38,41	14

From the table above, it can be seen that the try-out test had 31 item numbers valid and 14 item numbers invalid from 45 questions of multiple-choice. The complate result of try-out analysis can be seen in Appendix 3.

2. The Reliability of Try-out Test

Formula:

$$r_{11} = \frac{k}{(k-1)}\left\{\frac{s_{t-\sum p.q}^2}{s_t^2}\right\}$$

The item test is reliable if $r_{11} > r_{table}$

$r_{table} = 0.349$

Based on the try-out instrument, the calculation can be seen as follows:

$$S_t^2 = \frac{\sum X_t^2 - \frac{(\sum X_t)^2}{n}}{n}$$

$$= \frac{27118 - \frac{(906)^2}{32}}{32}$$

$$= \frac{27118 - \frac{820836}{32}}{32}$$

$$= \frac{27118 - 25651}{32}$$

$$= \frac{1467}{32}$$

$$= 45843$$

So, it can be gotten:

$$r_{11} = \frac{k}{(k-1)}\left\{\frac{s_t^2 - \sum p.q}{s_t^2}\right\}$$

$$r_{11} = \frac{45}{(45-1)}\left\{\frac{45843 - 9521}{45843}\right\}$$

$$r_{11} = \frac{45}{44}\left\{\frac{36322}{45843}\right\}$$

$$r_{11} = 1.0227 \text{ x } 0.7923$$

$$r_{11} = 0.810$$

The result of computing reliability of the try-out instrument was 0.810. For α = 5% with N= 32, r_{table} = 0.349. Therefore, the try-out test is reliable

because $r_{11} > r_{table,}$ since it is r_{11} = 0.810 were higher than r_{table} = 0.349. Then, the calculation of reliability test was also done by using SPSS calculation. It can be seen as follows:

Table 4.3

The Reliability Computation Using SPSS Calculation

Case Processing Summary

		N	%
Cases	Valid	32	97.0
	Excluded[a]	1	3.0
	Total	33	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.810	45

From the SPSS calculation above showed that in Cronbach's Alpha column the reliability statistics was 0.810. Reliability in manual calculation was 0.810 and in SPSS was 0.810 both of them were same, and they were higher than r_{table} = 0.349. So, it can be said that the instrument of this research was reliable.

4.2 The Data Description

The researcher held field the research by teaching and learning process in the classroom. It was done into two classes from nine class at the seventh grade of the school. The students of VII B as the experimental group and the VII C as the control group. The researcher got the data after doing pre-test and post-test in the class. Pre-test was given before the researcher gave the treatment and post-test was given the researcher after the treatment.

The data is described into three tables: the list students of experimental group and control group presented in table 4.4, the pre-test scores presented in table 4.5 and post-test scores presented in table 4.6.

1. **The Students of Experimental Group and Control Group**

   There were 32 students both in the experimental group and control group. VII B as experimental group and VII C as control group. Table 4.4 shows the list of students of experimental group and control group.

Table 4.4

The Students of the Research

No	Experimental Group	Control Group
1	E1	C1
2	E2	C2
3	E3	C3
4	E4	C4
5	E5	C5
6	E6	C6
7	E7	C7
8	E8	C8
9	E9	C9

10	E10	C10
11	E11	C11
12	E12	C12
13	E13	C13
14	E14	C14
15	E15	C15
16	E16	C16
17	E17	C17
18	E18	C18
19	E19	C19
20	E20	C20
21	E21	C21
22	E22	C22
23	E23	C23
24	E24	C24
25	E25	C25
26	E26	C26
27	E27	C27
28	E28	C28
29	E29	C29
30	E30	C30
31	E31	C31
32	E32	C32

2. The Pre-test Scores

In this part, table 4.5 reports the students' pre-test scores of the experimental group and control group. There were 32 students of the experimental group and control group.

Table 4.5

The Students' Pre-test Scores

Students	The Pre-test Scores of Experimental Group	The Pre-test Scores of Control Group
1	43	40
2	55	37
3	55	37
4	40	46
5	61	55
6	61	43
7	37	58
8	52	61
9	43	40
10	40	40
11	40	52
12	58	49
13	55	40
14	46	40
15	37	40
16	37	46
17	46	40
18	40	40
19	55	58
20	43	61
21	43	46
22	43	37
23	55	37
24	40	49
25	61	40
26	49	43
27	43	43

28	40	40
29	55	55
30	40	46
31	40	55
32	49	58
∑	1502	1472
Mean	46.94	46.00

The table above shows the students' pre-test scores of the experimental group and control group. The data shows that both the experimental group and control group got 61 as the highest score and 37 as the lowest score. The test was given in the first meeting before giving the treatment. In addition, the mean score of the experimental group was 46.94 and the control group was 46.00. So, it can be concluded that the pre-test scores of experimental group and control group seemed to be equivalent.

After conducting the pre-test, the researcher gave treatment for students in the experimental group and control group. But, only the experimental group was given a treatment by using kim's memory game. Then, after the experimental group and control group were given a treatment, they had to do the post-test.

3. The Post-Test Scores

In this part, table 4.6 described the students' post-test scores of the experimental group and control group. There were 32 students of VII B and VII C as experimental group and control group.

Table 4.6

The Students' Post-test Scores

Students	The Post-test Scores of Experimental Group	The Post-test Scores of Control Group
1	61	61
2	70	58
3	76	58
4	64	55
5	82	64
6	85	70
7	61	70
8	70	70
9	70	61
10	70	58
11	67	64
12	82	61
13	76	61
14	64	55
15	67	52
16	79	61
17	70	58
18	70	58
19	79	64
20	70	70
21	64	55
22	61	52
23	82	64
24	73	64
25	82	58
26	73	58
27	70	55

28	70	67
29	73	67
30	73	58
31	73	64
32	67	67
∑	2294	1958
Mean	71.69	61.19

The table above shows the students post-test scores of the experimental group and control group. The data shows that the highest score of experimental group was 85 and the control group was 70. Furthermore, the lowest score of experimental group was 61 and the control group was 52. The test was given in the last meeting after giving the treatment. In addition, the mean score of the experimental group was 71.69 and the control group was 61.19. So, it can be concluded that the experimental group had the higher score than the control group (71.69>61.19).

4.3 The Data Analysis

After got the scores data of pre-test and post-test for the experimental and control groups, the researcher analyzed the data. This part was intended to answer the research questions whether Kim's memory game was effective to improve students' vocabulary mastery at the seventh grade students of MTs. Darul Ulum Purwogondo or not. The data analysis was devided into five sections; there were the data analysis of pre-test score, the data analysis of post-test score, the homogeneity of test, the normality of test and the T-test.

1. **The Data Analysis of Pre-test Score**

In this part, described the data analysis of pre-test scores of the experimental group and the control group by using SPSS. The aim was to know the comparison of pre-test scores between the experimental group and the control group there was significant or not.

Table 4.7

The Comparison Homogeneity of Pre-test between Experimental Group and Control Group

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Group	N	Percent	N	Percent	N	Percent
Result	Experimental group	32	100.0%	0	0.0%	32	100.0%
	Control group	32	100.0%	0	0.0%	32	100.0%

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Result Score of Homogeneity Test	Based on Mean	.147	1	62	.703
	Based on Median	.018	1	62	.893
	Based on Median and with adjusted df	.018	1	61.588	.893
	Based on trimmed mean	.125	1	62	.725

The tables above shows the homogeneity test of the experimental group and control group in pre-test. In the table test of homogeneity of variance, it shows that the based on mean was significance at 0.703. If the score of significance level in based on mean > 0.05, it meant the test was homogeneity. Meanwhile, if the score of significance level in based on

mean < 0.05, it meant the test was not homogeneity. There was homogeneity between the experimental group and control group which is the significance level of 0.703 was higher than 0.05 (0.703>0.05).

Table 4.8

The Comparison Normality of Pre-test between Experimental Group and Control Group

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Group	Statistic	Df	Sig.	Statistic	Df	Sig.
Result Score of Normality Test	Experimental group	.223	32	.000	.881	32	.002
	Control group	.216	32	.001	.869	32	.001

a. Lilliefors Significance Correction

The table above shows the normality test of the experimental group and control group in pre-test. In the table test of normality Shapiro-Wilk, it shows that the experimental group was significance at 0.002 and the control group was significance at 0.001. If the score of significance level > 0.05, it meant the test was normality. Meanwhile, if the score of significance level < 0.05, it meant the test was not normality. There was not normality between the experimental group and control group, which is the significance level of experimental group at 0.002 was lower than 0.05 (0.002<0.05). Meanwhile, the significance level of control group at 0.001 was lower than 0.05 (0.001<0.05). So, it can be concluded that the experimental group and control group were not normality.

Table 4.9

The Comparison T-test of Pre-test Scores between Experimental Group and Control Group

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Result score of pre-test	Experimental Group	32	46.94	7.861	1.390
	Control Group	32	46.00	7.808	1.380

Independent Samples Test

		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
Result Score of pre-test	Equal variances assumed	.147	.703	.479	62	.634	.938	1.959	-2.978	4.853
	Equal variances not assumed			.479	61.997	.634	.938	1.959	-2.978	4.853

The tables above shows the difference scores pre-test of the experimental group and control group. In the group statistics table shows that the mean of the experimental group was 46.94 and the mean of the

control group was 46.00. The analysis showed that the difference was significance at 0.634. There was no significant difference between the pre-test score of the experimental group and control group which is the significance level of 0.634 was higher than 0.05 (0.634>0.05). It meant that pre-test scores of the experimental group and control group were equal. In addition, the result of the statistic calculation above, the score $t_{observe}$ was 0.479 by using degree of freedom 5%, the value of 62 (the degree of significance) as stated in the t-table was 1.999. It meant that from the pre-test score there was not significant because $t_{observe} < t_{table}$ (0.479<1.999).

2. The Data Analysis of Post-test Score

The table below, described the data analysis of post-test scores of the experimental group and control group by using SPSS. In this part, it was important to know whether there was significance difference between experimental group and control group. In this analysis also to know whether the alternative hypothesis (Ha) was accepted or rejected.

Table 4.10

The Comparison Homogeneity of Post-test between Experimental Group and Control Group

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Group	N	Percent	N	Percent	N	Percent
Result	Experimental Group	32	100.0%	0	0.0%	32	100.0%
	Control Group	32	100.0%	0	0.0%	32	100.0%

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Result Score of Homogeneity Test	Based on Mean	1.157	1	62	.286
	Based on Median	.615	1	62	.436
	Based on Median and with adjusted df	.615	1	53.191	.436
	Based on trimmed mean	1.117	1	62	.295

The tables above shows the homogeneity test of the experimental group and control group in post-test. In the table test of homogeneity of variance, it shows that the based on mean was significance at 0.286. If the score of significance level in based on mean > 0.05, it meant the test was homogeneity. Meanwhile, if the score of significance level in based on mean < 0.05, it meant the test was not homogeneity. There was homogeneity between the experimental group and control group which is the significance level of 0.286 was higher than 0.05 (0.286>0.05).

Table 4.11

The Comparison Normality of Post-test between Experimental Group and Control Group

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Group	Statistic	Df	Sig.	Statistic	df	Sig.
Result Score of Normality Test	Experimental Group	.163	32	.031	.944	32	.095
	Control Group	.165	32	.027	.941	32	.081

a. Lilliefors Significance Correction

The table above shows the normality test of the experimental group and control group in post-test. In the table test of normality Shapiro-Wilk, it shows that the experimental group was significance at 0.095 and the control group was significance at 0.081. If the score of significance level > 0.05, it meant the test was normality. Meanwhile, if the score of significance level < 0.05, it meant the test was not normality. There was normality between the experimental group and control group, which is the significance level of experimental group at 0.095 was higher than 0.05 (0.095>0.05). Meanwhile, the significance level of control group at 0.081 was higher than 0.05 (0.081>0.05). So, it can be concluded that the experimental group and control group were normality.

Table 4.12

The Comparison T-test of Post-test Scores between Experimental Group and Control Group

Descriptives

	Group			Statistic	Std. Error
Result	Experimental Group	Mean		71.69	1.174
		95% Confidence Interval for Mean	Lower Bound	69.29	
			Upper Bound	74.08	
		5% Trimmed Mean		71.60	
		Median		70.00	
		Variance		44.093	
		Std. Deviation		6.640	
		Minimum		61	
		Maximum		85	
		Range		24	
		Interquartile Range		9	
		Skewness		.273	.414
		Kurtosis		-.611	.809
	Control Group	Mean		61.19	.933
		95% Confidence Interval for Mean	Lower Bound	59.29	
			Upper Bound	63.09	
		5% Trimmed Mean		61.21	
		Median		61.00	
		Variance		27.835	
		Std. Deviation		5.276	
		Minimum		52	
		Maximum		70	
		Range		18	
		Interquartile Range		6	
		Skewness		.165	.414
		Kurtosis		-.844	.809

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Result Score of Post-test	Experimental Group	32	71.69	6.640	1.174
	Control Group	32	61.19	5.276	.933

Independent Samples Test

		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
Result Score of Post-test	Equal variances assumed	1.157	.286	7.004	62	.000	10.500	1.499	7.503	13.497
	Equal variances not assumed			7.004	58.986	.000	10.500	1.499	7.500	13.500

The tables above described the difference from measurement score of the experimental group and the control group. In table the descriptives and group statistics, shows that the mean of the experimental group was 71.69 and the mean of the control group was 61.19. The standard deviation of the experimental group was 6.640 and the control group was 5.276. The minimum and maximum scores of the experimental group was 61 and 85.

Meanwhile, the minimum and maximum scores of the control group was 52 and 70.

In the table independent samples test, showed that the difference was significance at 0.000 (Sig.(2-tailed)). If the score of Sig. (2-tailed) > 0.05, the H_o was accepted and the H_a was rejected, it meant that there was no significant difference between the experimental and control group. Meanwhile, if the score of Sig. (2-tailed) < 0.05, the H_o was rejected and the H_a was accepted, it meant that there was significant difference between the experimental and the control group. The analysis above the Sig. (2-tailed) was 0.000 this scores was lower than 0.05 (0.000<0.05). It meant that there was significant difference between experimental and control group.

In addition, the result of the statistic calculation above, the score $t_{observe}$ was 7.004 by using degree of freedom 5%, the value of 62 (the degree of significance) as stated in the t-table was 1.999. If the score of $t_{observe} > t_{table}$, the H_o was rejected and the H_a was accepted, it meant that there was significant difference between the experimental group and control group. Meanwhile, if the score of $t_{observe} < t_{table}$, the H_o was accepted and the H_a was rejected, it meant that there was no significant difference between the experimental and control group. The analysis above the $t_{observe}$ was 7.004 this scores was higher than t_{table} = 1.999. So, it can be concluded that there was significant difference between experimental and control group because $t_{observe} > t_{table}$ (7.004>1.999).

4.4 The Data Interpretation

In this section, the researcher described the interpretation of the research finding and summarized the hypothesis. This research was held to answer the question whether the use of Kim's Memory Game is effective to improve students' vocabulary mastery in teaching vocabulary at the seventh grade of MTs. Darul Ulum Purwogondo. In order to answer the question, the researcher states the Alternative Hypothesis (H_a) and the Null Hypohesis (H_o) as follows:

1. The Null Hypothesis (H_o): there was no significant difference of the students' achievement in vocabulary between the students who are taught by using Kim's memory game and the students who are taught without by using Kim's memory game in the seventh grade of MTs. Darul Ulum Purwogondo.
2. The Alternative Hypothesis (H_a): there was significant difference of the students' achievement in vocabulary between the students who are taught by using Kim's memory game and the students who are taught without by using Kim's memory game in the seventh grade of MTs. Darul Ulum Purwogondo.

To prove the hypothesis, the data acquired in experimental and control groups were calculated by using t-test formula with assumption as follows:

1. If $t_o > t_{table}$, the Null Hypothesis (H_o) was rejected and Alternative Hypothesis (H_a) was accepted. It was proven that Kim's memory game was effective to improve students' vocabulary mastery in the seventh grade of MTs. Darul Ulum Purwogondo.

2. If $t_o < t_{table}$, the Null Hypothesis (H_o) was accepted and Alternative Hypothesis (H_a) was rejected. It was poven that Kim's memory game was not effective to improve students' vocabulary mastery in the seventh grade of MTs. Darul Ulum Purwogondo.

Based on the analysis above, there was a significant difference between the result of pre-test and post-test score of the experimental and the control group. The results showed that the experimental group got higher score than the control group. It can be seen in the pre-test score and post-test score between the experimental group and the control group. Afterwards, the researcher calculated by using SPSS, the result showed that the post-test score got significant measurement score than the pre-test score.

The result showed that t-test from pre-test was $t_{observe} < t_{table}$ (0.479<1.999). It meant taht there was no significant. Meanwhile, t-test from post-test was $t_{observe} > t_{table}$ (7.004>1.999). It meant that there was a significant from the result score. So, it can be defined that teaching vocabulary to improve students' vocabulary mastery by using Kim's memory game was effective than teaching vocabulary without by using Kim's memory game since the alternative hypothesis (H_a) was accepted and the null hypothesis (H_o) was rejected.

4.5 Discussion

After the researcher got the data which had been collected for experimental group and control group, the researcher analyzed it and got the results. In this part, the researcher discusses the research findings in order to answer the research question of this study. In the first meeting, the researcher

gave a same pre-test for experimental and control group for 32 students' in the class. The students got 30 questions of multiple-choice. The students still difficult and confused to understand the meaning for each words when they answer the questions, because they were still less vocabulary.

In the learning process, the researcher taught the experimental group by using Kim's memory game. The students very interesting for learning process in the classroom. They were also very enthusiasm to answer some questions gave from the researcher. The students feel enjoy and easy to understand the material. While, the researcher taught the control group without using Kim's memory game. The students feel bored, noisy and not pay attention in the learning process.

In the last meeting, the researcher gave a same post-test for experimental and control group. For the experimental group, the students easier to answer the questions got from the researcher. In the classroom also very quiet during doing the test, because the students focus to answer the questions. It happened because Kim's memory game made the students easily when they learnt and remembered new words. While, the control group still difficult to answer the questions and the classroom noisy during doing the test. So, it made the experimental group got higher score in post-test than the control group score in post-test.

From the pre-test scores, the experimental group and control group had the same scores in the highest and lowest score, there was 61 as the highest scores and 37 as the lowest scores. The test was given in the first meeting before giving the treatment. Than, the mean score of the experimental group

was 46.94 and the control group was 46.00. After analyzed the result of pre-test score by using SPSS, the result showed that the significant of t-test was 0.479. If this is compared with t-table by using degree of freedom 5%, the value of 62 (the degree of significance) as stated in the t-table was 1.999. So, this is not significant because the result showed that t-test from pre-test was lower than t-table, $t_{observe} < t_{table}$ (0.479<1.999).

In addition, the result scores from post-test showed that, the experimental group and control group had the different scores. The lowest score of the experimental group was 61 and the control group was 52. Meanwhile, the highest score of the experimental group was 85 and the control group was 70. The test was given in the last meeting after giving the treatment. Then, the mean score of the experimental group was 71.69 and the control group was 61.19. Furthermore, the result of SPSS from post-test score showed that the score of $t_{observe}$ was 7.004 by using degree of freedom 5%, the value of 62 (the degree of significance) as stated in the t-table was 1.999. It meant that from the post-test score there was a significant, because $t_{observe}$ = 7.004 was higher than t_{table} = 1.999, ($t_{observe} > t_{table}$, 7.004>1.999). So, it can be concluded that the H_o was rejected and the H_a was accepted since the score of $t_{observe} > t_{table}$.

Clearly, it can be seen that post-test score of the experimental group was higher than the score of the control group, and only the experimental group that had a significant score. It was also supported by the average between the experimental group and the control group that the result showed that the post-test scores were better than the pre-test scores. The average of the experimental group was 46.94 (pre-test) and 71.69 (post-test) and the average

for the control group was 46.00 (pre-test) and 61.19 (post-test). Based on the result, it can be seen that there is no significant difference of mean score in pre-test of the experimental and the control group. After the researcher gave the treatment to the experimental group by using Kim's memory game, there was significant difference mean score of the experimental group from pre-test to post-test (46.94 to 71.69). On the other hand, there is no significant improvement from pre-test to post-test mean score of the control group (46.00 to 61.19). It could happen, because the students were taught without using Kim's memory game.

Based on the finding above, the researcher can conclude that the implementation of Kim's memory game can improve the students' English vocabulary mastery. It was also supported by previous study conducted by Fitriyani (2018) who stated that using Kim's memory game gave positive effect on students' vocabulary mastery, because it created a fun and happy relationship between teacher and students in learning process. The implementation of using Kim's memory game was really helped students in memorizing words. They can improve achievement in vocabulary. Moreover, the implementation of using Kim's memory game also could effectively improve the students' motivation and improve their interest in learning English. It was also supported by the statement written by Yulisa (2018) who stated that Kim's game can give a significant influence towards students' vocabulary mastery. It was supported by the scores achieved by the students in which they got higher scores after the researcher gave the treatment using Kim's game as a technique in learning vocabulary. Moreover, using Kim's

memory game in teaching speaking in the class, it can be effective for the improvement of students' speaking skill. It was supported by previous study conducted by Suryani and Riandi (2018) stated that using Kim's memory game in teaching speaking can improve students' speaking skill. It is showed by the enthusiasm of students to follow the process of teaching and learning English language in the class.

According to the explanation above, based on the research of MTs. Darul Ulum Purwogondo Kalinyamatan Jepara. The use of Kim's memory game more effective than using conventional method to improve students' vocabulary mastery. It was proven by the mean scores differences of post-test results, and t-test results for the experimental and the control group. After got the treatment, the score of the experimental group was increased. It means that, using Kim's memory game is effective in teaching vocabulary mastery.