

CHAPTER IV

DISCUSSION

In this chapter, the results of data analysis were presented. There are many subs, those are the calculation of trying out instrument, data description, data analysis and discussion.

4.1 The Calculation of Trying Out Instrument

In this research, trying out of instrument was used to know the validity and reliability of the instrument. The researcher took 31 students as the respondent before guiding the pre-test and post-test in experiment class and controlled class. The researcher used two trying out tests, those were multiple choices and questionnaire.

4.1.1 The Validity of Trying Out Test

The significant level of 5% showed that r_{table} is 0,3550%. The instrument was called valid if $r_{xy} > r_{table}$. It means the instrument was valid if $r_{xy} > 0,3550\%$.

Formula:

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

Table 5 Validity Computation Using Manual Calculation

No.	The Value of r_{xy}	Criteria
1.	$r_{xy} = 0,9006$	Valid
2.	$r_{xy} = 0,4935$	Valid
3.	$r_{xy} = 0,0244$	Invalid
4.	$r_{xy} = 0,918$	Valid
5.	$r_{xy} = -0,203$	Invalid
6.	$r_{xy} = 0,8727$	Valid
7.	$r_{xy} = 0,0937$	Invalid
8.	$r_{xy} = 0,3767$	Valid
9.	$r_{xy} = -0,0233$	Invalid
10.	$r_{xy} = 0,7913$	Valid
11.	$r_{xy} = 0,3620$	Valid
12.	$r_{xy} = 0,5720$	Valid
13.	$r_{xy} = 0,0116$	Invalid
14.	$r_{xy} = 0,7973$	Valid
15.	$r_{xy} = 0,5702$	Valid
16.	$r_{xy} = 0,2043$	Invalid
17.	$r_{xy} = 0,0504$	Invalid
18.	$r_{xy} = 0,0092$	Invalid
19.	$r_{xy} = 0,3604$	Invalid
20.	$r_{xy} = 0,5702$	Valid
21.	$r_{xy} = 0,8728$	Valid
22.	$r_{xy} = 0,8728$	Valid

23.	$r_{xy} = 0,3708$	Valid
24.	$r_{xy} = 0,5720$	Valid
25.	$r_{xy} = 0,3353$	Invalid
26.	$r_{xy} = 0,1424$	Invalid
27.	$r_{xy} = 0,0102$	Invalid
28.	$r_{xy} = 0,3767$	Valid
29.	$r_{xy} = -1,2237$	Invalid
30.	$r_{xy} = 0,8728$	Valid
31.	$r_{xy} = -0,045$	Invalid
32.	$r_{xy} = 0,3618$	Valid
33.	$r_{xy} = 0,5720$	Valid
34.	$r_{xy} = 0,3708$	Valid
35.	$r_{xy} = 0,4935$	Valid
36.	$r_{xy} = 0,9182$	Valid
37.	$r_{xy} = 0,2043$	Invalid
38.	$r_{xy} = 0,7818$	Valid
39.	$r_{xy} = 0,9182$	Valid
40.	$r_{xy} = 0,0088$	Invalid
41.	$r_{xy} = 0,1108$	Invalid
42.	$r_{xy} = 0,0032$	Invalid
43.	$r_{xy} = 0,0105$	Invalid
44.	$r_{xy} = 0,9182$	Valid
45.	$r_{xy} = 0,0190$	Valid
46.	$r_{xy} = 0,2043$	Invalid
47.	$r_{xy} = 0,5720$	Invalid

48.	$r_{xy} = 0,37973$	Valid
49.	$r_{xy} = 0,1755$	Invalid
50.	$r_{xy} = 0,0228$	Invalid

From the table above, it could be seen that the valid items were 27 and the invalid items were 23. From 27 questions which were valid, the researcher used 25 questions that were given to the experimental group and control group. After the researcher did manual calculation of validity test, the researcher also calculated the validity test using SPSS. It can be seen in appendices.

Table 6 Number of Valid Item

Number of Items	Criteria
1,2,4,6,8,10,11,12,14,15,20,21,22,23,24,28,30,32,33,34,35,36,38, 39,44,45,48	Valid
3,5,7,9,13,16,17,18,19,25,26,27,29,31,37,40,41,42,43, 46,47,49,50	Invalid

For the validity test of the questionnaire, there were 20 questions. The valid items were 15 and the invalid items were 5. Then, from the questionnaire that was valid, the researcher gave 15 questions to experimental group and control group. The researcher calculated them by using SPSS also. The table is in appendices.

4.1.2 Reliability of Trying Out Instrument

Formula:

$$r_1 = \frac{k}{(k-1)} \left(1 - \frac{M(k-M)}{kV_t} \right)$$

The item test is reliability if $r_{nn} > 0.05$

$$r_1 = \frac{k}{(k-1)} \left(1 - \frac{M(k-M)}{kV_t} \right)$$

$$r_1 = \frac{50}{(50-1)} \left(1 - \frac{31.61(50-31.61)}{50 \times 86.91} \right)$$

$$r_1 = \frac{50}{(49)} \left(1 - \frac{31.61(18.39)}{4345.5} \right)$$

$$r_1 = 1.0204 \left(1 - \frac{581.3079}{4345.5} \right)$$

$$r_1 = 1.0204 (1 - 0.1337)$$

$$r_1 = 1.0204 (0.8773)$$

$$r_1 = 0.8951$$

Table 7 Reliability of Trying Out Test

Case Processing Summary			
		N	%
Cases	Valid	31	100.0
	Excluded^a	0	.0
	Total	31	100.0

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

Reability Statistics

Cronbach's Alpa	N of Items
.832	50

From the table above, it could be concluded that the instrument of trying out test was reliable because the total of the calculation was higher than 0.05 ($0.832 > 0.005$)

Table 8 Reliability of Trying Out Questionnaire

Case Processing Summary			
		N	%
Cases	Valid	33	100.0
	Excluded ^a	0	.0
	Total	33	100.0

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

Reability Statistics

Cronbach's Alpa	N of Items
.769	20

From the table above, it could be concluded that the instrument of trying out questionnaire was reliable because the total of the calculation was higher than 0.05 ($0.768 > 0.05$).

4.2 Data Description

The researcher would display the score from test and questionnaire of experimental group and control group. The score consisted of pretest score and posttest score from both groups. The results of them are as follow:

4.2.1 The Score of Experimental Class for Test

1. Pretest Score

Table 9 Pretest Score of Experimental Class for Test

No	Code of Students	Score
1.	E1	72
2.	E2	52
3.	E3	60
4.	E4	64
5.	E5	64
6.	E6	52
7.	E7	84
8.	E8	60
9.	E9	64
10.	E10	56
11.	E11	72
12.	E12	52
13.	E13	60
14.	E14	56
15.	E15	56
16.	E16	76
17.	E17	84
18.	E18	52
19.	E19	76
20.	E20	60
21.	E21	72
22.	E22	52
23.	E23	68
24.	E24	60
25.	E25	60
26.	E25	60
27.	E27	64
28.	E28	52
29.	E29	72
30.	E30	60
31.	E31	52
32.	E32	48
Total Score		1992
Mean		62.25

From the table above, the mean of the pretest score was 62.25. The lowest score was 48 and the highest score was 84.

2. Posttest Score

Table 10 Posttest Score of Experimental Class for Test

No	Code of Students	Score
1.	E1	76
2.	E2	76
3.	E3	72
4.	E4	80
5.	E5	68
6.	E6	80
7.	E7	88
8.	E8	68
9.	E9	68
10.	E10	64
11.	E11	80
12.	E12	72
13.	E13	68
14.	E14	72
15.	E15	80
16.	E16	84
17.	E17	88
18.	E18	80
19.	E19	80
20.	E20	88
21.	E21	84
22.	E22	80
23.	E23	80
24.	E24	68
25.	E25	76
26.	E25	72
27.	E27	68
28.	E28	76
29.	E29	84
30.	E30	68
31.	E31	76

32.	E32	76
Total Score		2440
Mean		76.25

From the table above, the mean of the posttest score was 76.25. The lowest score was 64 and the highest score was 88. According to both tables above, it could be concluded that they had increase their score after giving treatment. It could be seen based on the mean of the posttest score, the mean of experimental score increased from 62.25 to 76.25.

4.2.2 The Score of Control Class for Test

1. Pretest Score

Table 11 Pretest Score of Control Class for Test

No	Code of Students	Score
1.	C1	20
2.	C2	56
3.	C3	40
4.	C4	44
5.	C5	24
6.	C6	32
7.	C7	60
8.	C8	52
9.	C9	44
10.	C10	64
11.	C11	40
12.	C12	40
13.	C13	60
14.	C14	64
15.	C15	32
16.	C16	48
17.	C17	64
18.	C18	40
19.	C19	44
20.	C20	64

21.	C21	52
22.	C22	44
23.	C23	60
24.	C24	36
25.	C25	52
26.	C25	20
27.	C27	36
28.	C28	48
29.	C29	44
30.	C30	24
31.	C31	68
32.	C32	64
Total Score		1480
Mean		46.25

From the table above, the mean of the pretest score was 46.25. The lowest score was 20 and the highest score was 68.

2. Posttest Score

Table 12 Posttest Score of Control Class for Test

No	Code of Students	Score
1.	C1	40
2.	C2	64
3.	C3	60
4.	C4	56
5.	C5	56
6.	C6	56
7.	C7	76
8.	C8	60
9.	C9	64
10.	C10	72
11.	C11	52
12.	C12	48
13.	C13	68
14.	C14	68
15.	C15	60
16.	C16	60
17.	C17	68

18.	C18	60
19.	C19	72
20.	C20	72
21.	C21	64
22.	C22	64
23.	C23	68
24.	C24	60
25.	C25	60
26.	C25	40
27.	C27	60
28.	C28	64
29.	C29	52
30.	C30	40
31.	C31	72
32.	E32	68
Total Score		1944
Mean		60.75

From the table above, the mean of the posttest score was 60.75. The lowest score was 32 and the highest score was 76. According to both tables above, it could be concluded that they had increase their score after giving treatment. It could be seen based on the mean of the posttest score, the mean score of control class increased from 46.25 to 60.75.

4.2.3 The Score of Experimental Class for Questionnaire

1. Questionnaire Score Before Treatment

Table 13 Score of Experimental Class for Questionnaire

No	Code of Students	Total	Average	Criteria
1	E1	43	2.87	Well
2	E2	49	3.27	High
3	E3	42	2.80	Well
4	E4	42	2.80	Well
5	E5	41	2.73	Well
6	E6	37	2.47	Low

7	E7	45	3.00	Well
8	E8	56	3.73	High
9	E9	45	3.00	Well
10	E10	53	3.53	High
11	E11	44	2.93	Well
12	E12	39	2.60	Well
13	E13	51	3.40	High
14	E14	40	2.67	Well
15	E15	45	3.00	Well
16	E16	51	3.40	High
17	E17	57	3.80	High
18	E18	38	2.53	Well
19	E19	50	3.33	High
20	E20	45	3.00	Well
21	E21	50	3.33	High
22	E22	47	3.13	Well
23	E23	40	2.67	Well
24	E24	52	3.47	High
25	E25	43	2.87	Well
26	E25	50	3.33	High
27	E27	47	3.13	Well
28	E28	43	2.87	Well
29	E29	43	2.87	Well
30	E30	49	3.27	High
31	E31	41	2.73	Well
32	E32	43	2.87	Well
Σ	1461		Mean	45.7

From the table above, it can be concluded that the students who were highly motivated were 11, well-motivated were 20 and low motivated was 1. The mean score was 45.7.

2. Questionnaire Score After Treatment

Table 14 Score of Experimental Class for Questionnaire

No	Code of Students	Total	Average	Criteria
1	E1	50	3.33	High
2	E2	52	3.47	High
3	E3	52	3.47	High
4	E4	49	3.27	High
5	E5	48	3.20	Well
6	E6	49	3.27	High
7	E7	48	3.20	Well
8	E8	59	3.93	High
9	E9	50	3.33	High
10	E10	56	3.73	High
11	E11	50	3.33	High
12	E12	49	3.27	High
13	E13	55	3.67	High
14	E14	54	3.60	High
15	E15	53	3.53	High
16	E16	54	3.60	High
17	E17	59	3.93	High
18	E18	48	3.20	Well
19	E19	54	3.60	High
20	E20	51	3.40	High
21	E21	55	3.67	High
22	E22	51	3.40	High
23	E23	49	3.27	High
24	E24	57	3.80	High
25	E25	49	3.27	High
26	E25	53	3.53	High
27	E27	50	3.33	High
28	E28	49	3.27	High
29	E29	48	3.20	Well
30	E30	53	3.53	High
31	E31	52	3.47	High
32	E32	52	3.47	High
Σ	1658		Mean	51.81

From the table above, it can be concluded that the students who were highly motivated were 28 and well motivated were 4. The mean score was 51.81. It was higher than questionnaire score before treatment of experimental class which was 45.7. It meant that there were significant difference between score before treatment of experimental class and score after treatment of experimental class.

4.2.4 The Score of Control Class for Questionnaire

1. Questionnaire Score Before Treatment

Table 15 Score of Control Class for Questionnaire

No	Code of Students	Total	Average	Criteria
1	C1	43	2.77	Well
2	C2	49	3.03	Well
3	C3	42	2.97	Well
4	C4	42	2.53	Well
5	C5	41	2.50	Low
6	C6	37	2.80	Well
7	C7	45	2.97	Well
8	C8	56	2.80	Well
9	C9	45	2.83	Well
10	C10	53	3.30	High
11	C11	44	3.33	High
12	C12	39	2.97	Well
13	C13	51	3.07	Well
14	C14	40	2.90	Well
15	C15	45	2.97	Well
16	C16	51	3.00	Well
17	C17	57	2.67	Well
18	C18	38	2.87	Well
19	C19	50	3.17	Well
20	C20	45	3.00	Well
21	C21	50	2.87	Well
22	C22	47	2.97	Well

23	C23	40	2.70	Well
24	C24	52	2.67	Well
25	C25	43	2.87	Well
26	C25	50	2.97	Well
27	C27	47	3.00	Well
28	C28	43	2.80	Well
29	C29	43	2.47	Low
30	C30	49	2.70	Well
31	C31	41	2.73	Well
32	C32	43	2.40	Low
Σ	1376		Mean	43

From the table above, it can be concluded that the students who were highly motivated were 2, well-motivated were 27 and low motivated were 3. The mean score was 43.

2. Questionnaire Score After Treatment

Table 16 Score of Control Class for Questionnaire

No	Code of Students	Total	Average	Criteria
1	C1	50	3.33	High
2	C2	46	3.07	Well
3	C3	50	3.33	High
4	C4	44	2.93	Well
5	C5	41	2.73	Well
6	C6	46	3.07	Well
7	C7	49	3.27	High
8	C8	47	3.13	Well
9	C9	45	3.00	Well
10	C10	48	3.20	Well
11	C11	57	3.80	High
12	C12	49	3.27	High
13	C13	47	3.13	Well
14	C14	52	3.47	High
15	C15	41	2.73	Well
16	C16	54	3.60	High
17	C17	43	2.87	Well

18	C18	47	3.13	Well
19	C19	49	3.27	High
20	C20	53	3.53	High
21	C21	44	2.93	Well
22	C22	49	3.27	High
23	C23	49	3.27	High
24	C24	43	2.87	Well
25	C25	48	3.20	Well
26	C25	50	3.33	High
27	C27	49	3.27	High
28	C28	52	3.47	High
29	C29	45	3.00	Well
30	C30	44	2.93	Well
31	C31	49	3.27	High
32	C32	45	3.00	Well
Σ	1525		Mean	47.66

From the table above, it can be concluded that the students who were highly motivated were 15 and well-motivated were 17. The mean score was 47.66. It was higher than questionnaire score before treatment of control class which was 43. It meant that there was significant difference between score before treatment of control class with score after treatment of control class.

4.3 The Data Analysis

After the researcher got the score of experimental group and control group, the researcher analyzed the data to find out manova calculation for pretest and posttest using SPSS 16. Here are the following tables below:

4.3.1 Manova Pretest

Table 17 Descriptive Statistics of Manova Pretest

Descriptive Statistics				
	Class	Mean	Std. Deviation	N
Vocabulary	1	62.25	9.582	32
	2	46.25	13.891	32
	Total	54.25	14.323	64
Motivation	1	45.66	5.147	32
	2	43.00	4.586	32
	Total	44.33	5.018	64

Based the table above, it could be categorized into vocabulary score and motivation score for both classes. In vocabulary test, the mean score of experimental class showed 62.25 while control class showed 46.25. Then, standard deviation value of experimental class was 9.58 and control class was 13.89. In motivation test, the mean score of experimental class showed 45.66 while control class showed 43.00. Then, standard deviation value of experimental class was 5.15 and control class was 4.59.

Table 18 Box M Homogeneity Test of Manova Pretest**Box's Test of Equality of Covariance Matrices^a**

Box's M	5.231
F	1.683
df1	3
df2	6.919E5
Sig.	.168

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Class

Based on the table above, the significant value was 0.168 ($0.168 > 0.005$). It can be concluded that the dependent variables had homogenous and the manova test could be continued.

Table 19 Homogeneity Test of Manova Pretest**Levene's Test of Equality of Error Variances^a**

	F	df1	df2	Sig.
Vocabulary	4.912	1	62	.030
Motivation	.768	1	62	.384

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Class

Based on the table above, the data showed significant value of vocabulary was 0.030 ($0.039 > 0.005$). While the significant value of learning motivation was 0.384 ($0.384 > 0.005$). It can be concluded that the

data of experimental class and control class had homogenous because both of the data had significant value higher than 0.005.

Table 20 Manova Test

Multivariate Tests^b

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.989	2.710E3 ^a	2.000	61.000	.000
	Wilks' Lambda	.011	2.710E3 ^a	2.000	61.000	.000
	Hotelling's Trace	88.857	2.710E3 ^a	2.000	61.000	.000
	Roy's Largest Root	88.857	2.710E3 ^a	2.000	61.000	.000
Class	Pillai's Trace	.319	14.304 ^a	2.000	61.000	.000
	Wilks' Lambda	.681	14.304 ^a	2.000	61.000	.000
	Hotelling's Trace	.469	14.304 ^a	2.000	61.000	.000
	Roy's Largest Root	.469	14.304 ^a	2.000	61.000	.000

a. Exact statistic

b. Design: Intercept + Class

Based on the table above, the data showed significant value of vocabulary was 0.030 ($0.039 > 0.005$). While the significant value of learning motivation was 0.384 ($0.384 > 0.005$). It can be concluded that the data of experimental class and control class had homogenous because both of the data had significant value higher than 0.005.

Table 21 Test of Between Subjects of Manova Pretest

Tests of Between-Subjects Effects						
Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	Vocabulary	4096.000 ^a	1	4096.000	28.767	.000
	Motivation	112.891 ^b	1	112.891	4.751	.033
Intercept	Vocabulary	188356.000	1	188356.000	1.323E3	.000
	Motivation	125758.891	1	125758.891	5.293E3	.000
Class	Vocabulary	4096.000	1	4096.000	28.767	.000
	Motivation	112.891	1	112.891	4.751	.033
Error	Vocabulary	8828.000	62	142.387		
	Motivation	1473.219	62	23.762		
Total	Vocabulary	201280.000	64			
	Motivation	127345.000	64			
Corrected Total	Vocabulary	12924.000	63			
	Motivation	1586.109	63			

a. R Squared = .317 (Adjusted R Squared = .306)

b. R Squared = .071 (Adjusted R Squared = .056)

Based on the table pretest above, the significant value of vocabulary was 0.000 ($0.000 < 0.005$). While the significant value of motivation was 0.033 ($0.033 > 0.005$). It can be concluded that there was significant difference on students' vocabulary but there was no significant difference on students' learning motivation. So, Kahoot was only effective in teaching vocabulary but it was ineffective in improving students' learning motivation. It meant that H_0 was accepted and H_a was rejected.

4.3.2 Manova Posttest

Table 22 Descriptive Statistic of Manova Posttest

Descriptive Statistics				
	Kelas	Mean	Std. Deviation	N
Vocabulary	1	76.25	6.735	32
	2	60.75	9.391	32
	Total	68.50	11.257	64
Motivation	1	51.69	3.084	32
	2	47.66	3.695	32
	Total	49.67	3.940	64

From the table above, it could be categorized into vocabulary score and motivation score. In vocabulary test, the mean of experimental class showed 76.25 while control class showed 60.75. Then, standard deviation value of experimental class was 6.74 and control class was 9.39. In motivation test, the mean of experimental class showed 51.69 and control class showed 47.66. Then, standard deviation value of experimental class was 3.08 and control class was 3.70. It meant that there was significant difference between manova pretest and manova posttest. It could be seen from the mean of manova pretest and manova posttest.

In vocabulary pretest, the mean total showed 54.25. In motivation pretest, the mean total showed 44.33. While in vocabulary posttest, the mean total showed 68.50. In motivation posttest, the mean total showed

49.67. It meant that there was significant difference between pretest and posttest.

Table 23 Box M Homogeneity Test of Manova Posttest

Box's Test of Equality of Covariance Matrices^a

Box's M	10.021
F	3.224
df1	3
df2	6.919E5
Sig.	.022

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Class

Based on the table above, the significant value was 0.022 ($0.022 > 0.005$). It can be concluded that the dependent variables had homogenous variety and the manova test could be continued.

Table 24 Homogeneity Test of Manova Posttest

Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
Vocabulary	4.432	1	62	.039
Motivation	.539	1	62	.466

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Class

Based on the table above, the data showed significant value of vocabulary was 0.039 ($0.039 > 0.005$). While the significant value of

learning motivation was 0.466 ($0.466 > 0.005$). It could be concluded that both of the data had homogenous.

Table 25 Manova Test

Multivariate Tests^b

Effect	Value	F	Hypothesis df	Error df	Sig.	
Intercept	Pillai's Trace	.997	9.211E3 ^a	2.000	61.000	.000
	Wilks' Lambda	.003	9.211E3 ^a	2.000	61.000	.000
	Hotelling's Trace	301.992	9.211E3 ^a	2.000	61.000	.000
	Roy's Largest Root	301.992	9.211E3 ^a	2.000	61.000	.000
Class	Pillai's Trace	.640	54.271 ^a	2.000	61.000	.000
	Wilks' Lambda	.360	54.271 ^a	2.000	61.000	.000
	Hotelling's Trace	1.779	54.271 ^a	2.000	61.000	.000
	Roy's Largest Root	1.779	54.271 ^a	2.000	61.000	.000

a. Exact statistic

b. Design: Intercept + Class

Based on the table above, the data showed significant value of each variable was 0.000 ($0.000 < 0.005$). It can be concluded that there was significant difference from experimental class and control class in students' vocabulary and learning motivation after giving Kahoot. So, Kahoot gave positive effect to students' vocabulary and students' learning motivation.

Table 26 Test of Between Subjects

Tests of Between-Subjects Effects						
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Vocabulary	5112.250 ^a	1	5112.250	86.850	.000
	Motivation	276.391 ^b	1	276.391	23.471	.000
Intercept	Vocabulary	310806.250	1	310806.250	5.280E3	.000
	Motivation	158304.516	1	158304.516	1.344E4	.000
Class	Vocabulary	5112.250	1	5112.250	86.850	.000
	Motivation	276.391	1	276.391	23.471	.000
Error	Vocabulary	3649.500	62	58.863		
	Motivation	730.094	62	11.776		
Total	Vocabulary	319568.000	64			
	Motivation	159311.000	64			
Corrected Total	Vocabulary	8761.750	63			
	Motivation	1006.484	63			

a. R Squared = .583 (Adjusted R Squared = .577)

b. R Squared = .275 (Adjusted R Squared = .263)

Based on the table above, the data showed significant value of each variable was 0.000 ($0.000 < 0.005$). It can be concluded that H₀ (hypothesis null) was rejected and H_a (hypothesis alternative) was accepted. So, there was significant difference between vocabulary and learning motivation of students before giving the treatment and after giving the treatment. So, Kahoot was effective in teaching vocabulary and learning motivation.

4.4 Discussion

This study was aimed to know the effectiveness of using Kahoot in teaching vocabulary and learning motivation of tenth grade students at SMA Negeri 1 Kembang. It is also to find out if there is any significant difference between students who were taught by using Kahoot and who were not taught by Kahoot.

There were two groups in this research, those were experimental class and control class. The researcher taught both of classes. The experimental class was in X MIPA 2 and the control class was in X MIPA 1. The researcher gave pretest, treatment and posttest to each group.

The researcher gave pretest in the first meeting. The purpose was to know the initial ability of each class. The second and third meeting, the researcher gave treatment. The researcher did learning process to each classes, but different treatment. The researcher gave Kahoot to experimental class and other technique to control class. In the last meeting, the researcher gave posttest to both classes. It was aimed to know the significant difference of each class after giving treatment.

Based on the result of vocabulary test, score of experimental class and control class were higher than before based on mean score. Experimental class got 62.25 in the pretest and 78.23 in the posttest. Then, control class got 46.25 in the pretest and 60.75 in the posttest. It meant that both of them had increased their score.

Based on motivation test, the score of experimental class and control class increased. It showed from the mean of pretest for experimental class was 45.7 and the posttest was 51.81. Then, the mean of pretest for control class was 43 and the posttest was 47.66. It meant that there was significant difference between the learning motivation of students who were taught by Kahoot and who taught were without Kahoot.

Based on manova pretest, there were two groups that had to test. In vocabulary test, the total mean score of both groups were 54.25. Then, the total of standard deviation was 14.32. In motivation test, the mean score of both groups was 44.33. Then, the total of standard deviation was 5.02.

Based on manova posttest, there were two tests. In vocabulary test, the total mean score of both groups were 68.50. Then, the total of standard deviation was 11.26. In motivation test, the total mean score of both groups was 49.67. Then, the total of standard deviation was 3.94. From manova pretest and manova posttest, it can be seen that there was significant difference between pretest and posttest. It meant that Kahoot gave positive effect in students' vocabulary and learning motivation.

From the explanation above, it can be concluded that the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted. It can be concluded that there was significant difference between vocabulary and learning motivation of students who were taught by Kahoot and who were taught without

Kahoot. The result of the research at SMA Negeri 1 Kembang that Kahoot was effective in teaching vocabulary and learning motivation of students.

