

CHAPTER IV

FINDING AND DISCUSSION

This chapter consists of two sections, the section deals with the findings of the research and discussions of the research. The finding of the research cover description of the result of data collected through a test that can be discussed in the section below.

4.1 Findings

The data were collected from students; pre-test and post-test at two classes. experimental class and control class, in which VII.2 as the experimental class and VII.4 as the control class. As the explanation in chapter III, the experimental class was taught vocabulary by using the mnemonic keyword method, and the control class was not. the result of the data can be described as the following:

4.1.1 Pre-test and Post-test the students of the Experimental Class

Table 4.1 The score pre-test and post-test of the experimental class

No	Nama	Pre-Test		Post-Test	
		Correct Answer	Score	Correct Answer	Score
1	AF	14	28	22	44
2	AS	40	80	46	92
3	HK	22	44	28	56
4	GN	30	60	28	84
5	NBA	40	80	42	84
6	HN	16	32	28	56
7	MJM	36	72	46	92
8	AN	36	72	48	96
9	FK	22	44	42	56
10	SR	32	64	48	96
11	TH	16	32	28	56
12	AF	32	64	42	84
13	SY	28	56	46	92

14	HT	40	80	48	96
15	AA	14	28	22	44
16	NH	36	72	44	88
17	YT	30	60	40	80
18	YM	32	64	42	84
19	RS	28	56	34	68
20	NS	36	72	48	96
21	KA	40	80	48	96
22	MH	20	40	25	50
23	RW	28	56	44	88
24	FM	30	60	40	80
25	NW	20	40	32	64
Total			1436	Total	1922
Mean			57,44	Mean	76,88

Table 4.1 above has shown that the lowest pretest value of the experimental class is 28 and the highest pretest value is 80 with an average value of 57.44. While the lowest posttest is 44 and the highest posttest is 96 with an average value of 76.88. From the results of the assessment above, the value of the experimental class students can be classified as follows:

Table 4.2 Classification, Frequency and Percentage Score of the experimental class

No	Classification	Scores	Frequency		Percentage	
			Pretest	Posttest	Pretest	Posttest
1	Very Good	80-100	4	16	16%	64%
2	Good	66-79	4	1	16%	4%
3	Fair	56-65	9	5	36%	20%
4	Poor	40-55	4	3	16%	12%
5	Very Poor	0-39	4	0	16%	0%
Total			25		100%	

Table 4.2 has shown that in the experimental class pre-test four students got a very good score, four students got a good score, nine students got fair scores, four students got a poor score and four students got a very poor score. Whereas in the post-test there were sixteen there were four students who got a very good score, one student got a good score, five students got a fair score, three students got a poor score and none of the students got a very poor score.

Table 4.3 The worksheet of the calculation of score on pre-test an post-test of experimental class

No	Pre-Test	Post-Test	X_1	X_2	$D(X_2-X_1)$	$D^2(X_1-X_2)^2$
1	28	44	784	1936	16	256
2	80	92	6400	8464	12	144
3	44	56	1936	3136	12	144
4	60	84	3600	7056	24	576
5	80	84	6400	7056	4	16
6	32	56	1024	3136	24	576
7	72	92	5184	8464	20	400
8	72	96	5184	9216	24	576
9	44	56	1936	3136	12	144
10	64	96	4096	9216	32	1024
11	32	56	1024	3136	24	576
12	64	84	4096	7056	20	400
13	56	92	3136	8464	36	1296
14	80	96	6400	9216	16	256
15	28	44	784	1936	16	256
16	72	88	5184	7744	16	256
17	60	80	3600	6400	20	400
18	64	84	4096	7056	20	400
19	56	68	3136	4624	12	144

20	72	96	5184	9216	24	576
21	80	96	6400	9216	16	256
22	40	50	1600	2500	10	100
23	56	88	3136	7744	32	1024
24	60	80	3600	6400	20	400
25	40	64	1600	4096	24	576
	1436	1922	89520	155620	486	10772

Pre-Test

$$S_1^2 = \frac{\sum X_1^2 - \frac{(\sum X_1)^2}{N_1}}{N_1 - 1}$$

$$= \frac{89520 - \frac{(1436)^2}{25}}{25 - 1}$$

$$= \frac{89520 - \frac{2062096}{25}}{24}$$

$$= \frac{89520 - 82483,84}{24}$$

$$= \frac{7036,16}{24}$$

$$= 293,17$$

$$S_1 = \sqrt{\frac{\sum X_1^2 - \frac{(\sum X_1)^2}{N_1}}{N_1 - 1}}$$

$$= \sqrt{293,17}$$

$$= 17,12$$

Post-Test

$$S_2^2 = \frac{\sum X_2^2 - \frac{(\sum X_2)^2}{N_2}}{N_2 - 1}$$

$$= \frac{155620 - \frac{(1922)^2}{25}}{25 - 1}$$

$$= \frac{155620 - \frac{3694084}{25}}{24}$$

$$= \frac{155620 - 147763,4}{24}$$

$$= \frac{7856,64}{24}$$

$$= 327,36$$

$$S_2 = \sqrt{\frac{\sum X_2^2 - \frac{(\sum X_2)^2}{N_2}}{N_2 - 1}}$$

$$= \sqrt{327,36}$$

$$= 18,09$$

Table 4.4 Standard Deviation Pre-Test of Experimental Class

Interval Score	f_i	X_i	$X_i - \bar{X}$	$(X_i - \bar{X})^2$	$f_i (X_i - \bar{X})^2$
80-100	4	90	32,56	1060,15	4240,61
66-79	4	72,5	15,06	226,804	907,214
56-65	9	60,5	3,06	9,3636	84,2724
40-55	4	47,5	-9,94	98,8036	395,214
0-39	4	19,5	-37,94	1439,44	5757,77
Total	25				11385,1

$$\begin{aligned}
 S &= \sqrt{\frac{\sum f_i (X_i - \bar{X})^2}{(n-1)}} \\
 &= \sqrt{\frac{11385,1}{24}} \\
 &= \sqrt{474,38} \\
 &= 21,78
 \end{aligned}$$

Table 4.5 Standard Deviation Post-Test of Experimental Class

Interval Score	f_i	X_i	$X_i - \bar{X}$	$(X_i - \bar{X})^2$	$f_i (X_i - \bar{X})^2$
80-100	16	90	13,12	172,134	2754,15
66-79	1	72,5	-4,38	19,1844	19,1844
56-65	5	60,5	-16,38	268,304	1341,52
40-55	3	47,5	-29,38	863,184	2589,55
0-39	0	19,5	-57,38	3292,46	0
Total	25				6704,41

$$\begin{aligned}
 S &= \sqrt{\frac{\sum f_i (X_i - \bar{X})^2}{(n-1)}} \\
 &= \sqrt{\frac{6704,41}{24}} \\
 &= \sqrt{279,35} \\
 &= 16,71
 \end{aligned}$$

Table 4.6 N-Gain Score of Experimental Class

No	Name	Pre-Test	Post-Test	N-Gain
1	AF	28	44	0,22
2	AS	80	92	0,60
3	HK	44	56	0,21
4	GN	60	84	0,60
5	NBA	80	84	0,20
6	HN	32	56	0,35
7	MJM	72	92	0,71
8	AN	72	96	0,29
9	FK	44	56	0,21
10	SR	64	96	0,89
11	TH	32	56	0,35
12	AF	64	84	0,29
13	SY	56	92	0,09
14	HT	80	96	0,20
15	AA	28	44	0,39
16	NH	72	88	0,57
17	YT	60	80	0,30
18	YM	64	84	0,44
19	RS	56	68	0,09
20	NS	72	96	0,86
21	KA	80	96	0,60
22	MH	40	50	0,07
23	RW	56	88	0,67
24	FM	60	80	0,30
25	NW	40	64	0,27

Table 4.7 The Calculation of Correlation Product Moment

No	Pre-Test (X)	Post-test (Y)	(X _i -X) x	(Y _i -Y) y	x ²	y ²	xy
1	28	44	-29,4	-32,9	866,7	1.081,1	968,0
2	80	92	22,6	15,1	509,0	228,6	341,1
3	44	56	-13,4	-20,9	180,6	436,0	280,6
4	60	84	2,6	7,1	6,6	50,7	18,2
5	80	84	22,6	7,1	509,0	50,7	160,6
6	32	56	-25,4	-20,9	647,2	436,0	531,2
7	72	92	14,6	15,1	212,0	228,6	220,1
8	72	96	14,6	19,1	212,0	365,6	278,4
9	44	56	-13,4	-20,9	180,6	436,0	280,6
10	64	96	6,6	19,1	43,0	365,6	125,4
11	32	56	-25,4	-20,9	647,2	436,0	531,2
12	64	84	6,6	7,1	43,0	50,7	46,7
13	56	92	-1,4	15,1	2,1	228,6	-21,8
14	80	96	22,6	19,1	509,0	365,6	431,3
15	28	44	-29,4	-32,9	866,7	1.081,1	968,0
16	72	88	14,6	11,1	212,0	123,7	161,9
17	60	80	2,6	3,1	6,6	9,7	8,0
18	64	84	6,6	7,1	43,0	50,7	46,7
19	56	68	-1,4	-8,9	2,1	78,9	12,8
20	72	96	14,6	19,1	212,0	365,6	278,4
21	80	96	22,6	19,1	509,0	365,6	431,3
22	40	50	-17,4	-26,9	304,2	722,5	468,8
23	56	88	-1,4	11,1	2,1	123,7	-16,0
24	60	80	2,6	3,1	6,6	9,7	8,0
25	40	64	-17,4	-12,9	304,2	165,9	224,6

	57,44	76,88	0,0	0,0	7.036,2	7.856,6	6.784,3
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$$\begin{aligned}
 r_{xy} &= \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} \\
 &= \frac{6784,3}{\sqrt{(7036,2)(7856,6)}} \\
 &= \frac{6784,3}{\sqrt{135,4167}} \\
 &= \frac{6784,3}{7435,09} \\
 &= 0,91
 \end{aligned}$$

The result above shows that the correlation product moment of the experimental class was 0,91. The result indicated that correlation between mnemonic keyword method as independent variable and students' vocabulary mastery was strong related to table 3.3.

4.1.2 Pre-test and Post-test the students of Control Class

Table 4.8 The score pre-test and post-test of the control class

No	Name	Pre-Test		Post-Test	
		Correct Answer	Score	Correct Answer	Score
1	HAM	14	28	22	44
2	AN	40	80	46	92
3	RH	22	44	28	56
4	RE	30	60	40	80
5	MF	40	80	42	84
6	RR	16	32	28	56
7	UV	36	72	46	92
8	NFZ	36	72	40	80
9	NH	22	44	28	56
10	AA	32	64	48	96
11	MN	16	32	28	56
12	AF	36	72	40	80

13	IM	28	56	30	60
14	AR	40	80	42	84
15	AP	14	28	28	56
16	MAJ	36	72	44	88
17	AWR	30	60	36	72
18	CM	32	64	40	80
19	NR	28	56	30	60
20	PO	36	72	48	96
21	AT	40	80	46	92
22	AH	20	40	22	44
23	MFR	32	64	44	88
24	MA	30	60	36	72
25	MDM	20	40	28	56
Total			1452	Total	1820
Mean			58,08	Mean	72,8

Table 4.1 above has shown that the lowest pretest value of the experimental class is 28 and the highest pretest value is 80 with an average value of 58.08. While the lowest posttest is 44 and the highest posttest is 96 with an average value of 72,8. From the results of the assessment above, the value of the experimental class students can be classified as follows:

Table 4.9 Classification, Frequency and Percentage Score of the control class

No	Classification	Scores	Frequency		Percentage	
			Pretest	Posttest	Pretest	Posttest
1	Very Good	80-100	4	13	16%	52%
2	Good	66-79	5	2	20%	8%
3	Fair	56-65	8	8	32%	32%
4	Poor	40-55	4	2	16%	8%

5	Very Poor	0-39	4	0	16%	0%
Total			25		100%	

Table 4.2 has shown that in the experimental class pre-test four students got a very good score, five students got a good score, eight students got fair scores, four students got a poor score and four students got a very poor score. Whereas in the post-test there were thirteen students who got a very good score, two student got a good score, eight students got a fair score, two students got a poor score and none of the students got a very poor score.

Table 4.10 The worksheet of the calculation of score on pre-test an post-test of control class

No	Pre-Test	Post-Test	X_1	X_2	$D(X_2-X_1)$	$D^2(X_1-X_2)^2$
1	28	44	784	1936	16	256
2	80	92	6400	8464	12	144
3	44	56	1936	3136	12	144
4	60	80	3600	6400	20	400
5	80	84	6400	7056	4	16
6	32	56	1024	3136	24	576
7	72	92	5184	8464	20	400
8	72	80	5184	6400	8	64
9	44	56	1936	3136	12	144
10	64	96	4096	9216	32	1024
11	32	56	1024	3136	24	576
12	72	80	5184	6400	8	64
13	56	60	3136	3600	4	16
14	80	84	6400	7056	4	16
15	28	56	784	3136	28	784
16	72	88	5184	7744	16	256
17	60	72	3600	5184	12	144

18	64	80	4096	6400	16	256
19	56	60	3136	3600	4	16
20	72	96	5184	9216	24	576
21	80	92	6400	8464	12	144
22	40	44	1600	1936	4	16
23	64	88	4096	7744	24	576
24	60	72	3600	5184	12	144
25	40	56	1600	3136	16	256
	1452	1820	91568	139280	368	7008

Pre-Test

$$\begin{aligned}
 S_1^2 &= \frac{\sum X_1^2 - \frac{(\sum X_1)^2}{N_1}}{N_1 - 1} & S_1 &= \sqrt{\frac{\sum X_1^2 - \frac{(\sum X_1)^2}{N_1}}{N_1 - 1}} \\
 &= \frac{91568 - \frac{(1452)^2}{25}}{25 - 1} & &= \sqrt{301,49} \\
 &= \frac{91568 - \frac{2108304}{25}}{24} & &= 17,36 \\
 &= \frac{91568 - 84332,16}{24} \\
 &= \frac{7235,84}{24} \\
 &= 301,49
 \end{aligned}$$

Post-Test

$$\begin{aligned}
 S_2^2 &= \frac{\sum X_2^2 - \frac{(\sum X_2)^2}{N_2}}{N_2 - 1} & S_2 &= \sqrt{\frac{\sum X_2^2 - \frac{(\sum X_2)^2}{N_2}}{N_2 - 1}} \\
 &= \frac{139280 - \frac{(1820)^2}{25}}{25 - 1} & &= \sqrt{282,66} \\
 &= \frac{139280 - \frac{3312400}{25}}{24} & &= 16,81 \\
 &= \frac{139280 - 132496}{24}
 \end{aligned}$$

$$\begin{aligned}
 &= \frac{6784}{24} \\
 &= 282,66
 \end{aligned}$$

Table 4.12 Standard Deviation Pre-Test of ControlClass

Interval	f _i	X _i	X _i - \bar{X}	(X _i - \bar{X}) ²	f _i (X _i - \bar{X}) ²
80-100	4	90	31,92	1018,886	4075,546
66-79	5	72,5	14,42	207,9364	1039,682
56-65	8	60,5	2,42	5,8564	46,8512
40-55	4	47,5	-10,58	111,9364	447,7456
0-39	4	19,5	-38,58	1488,416	5953,666
Total	25				11563,49

$$\begin{aligned}
 S &= \sqrt{\frac{\sum f_i(X_i-\bar{X})^2}{(n-1)}} \\
 &= \sqrt{\frac{11563,49}{24}} \\
 &= \sqrt{481,81} \\
 &= 21,9
 \end{aligned}$$

Table 4.13 Standard Deviation Post-Test of ControlClass

Interval	f _i	X _i	X _i - \bar{X}	(X _i - \bar{X}) ²	f _i (X _i - \bar{X}) ²
80-100	13	90	17,2	295,84	3845,92
66-79	2	72,5	-0,3	0,09	0,18
56-65	8	60,5	-12,3	151,29	1210,32
40-55	2	47,5	-25,3	640,09	1280,18
0-39	0	19,5	-53,3	2840,89	0
Total	25				6336,6

$$S = \sqrt{\frac{\sum f_i(X_i-\bar{X})^2}{(n-1)}}$$

$$= \sqrt{\frac{6336,6}{24}}$$

$$= \sqrt{264,025}$$

$$= 16,25$$

Table 4.6 N-Gain Score of Control Class

No	Name	Pre-Test	Post-Test	N-Gain
1	AF	28	28	0,22
2	AS	80	80	0,60
3	HK	44	44	0,21
4	GN	60	60	0,50
5	NBA	80	80	0,20
6	HN	32	32	0,35
7	MJM	72	72	0,71
8	AN	72	72	0,29
9	FK	44	44	0,21
10	SR	64	64	0,89
11	TH	32	32	0,35
12	AF	64	72	0,29
13	SY	56	56	0,09
14	HT	80	80	0,20
15	AA	28	28	0,39
16	NH	72	72	0,57
17	YT	60	60	0,30
18	YM	64	64	0,44
19	RS	56	56	0,09
20	NS	72	72	0,86
21	KA	80	80	0,60
22	MH	40	40	0,07

23	RW	56	64	0,67
24	FM	60	60	0,30
25	NW	40	40	0,27

The Calculating of t-test value and t-table

Experimental class

Find out \bar{D}

$$\bar{D} = \frac{\sum \bar{D}}{N} = \frac{486}{25} = 19,44$$

THE Calculating of T-Test Value

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum X^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}$$

$$t = \frac{19,44}{\sqrt{\frac{10772 - \frac{(486)^2}{25}}{25(25-1)}}$$

$$t = \frac{19,44}{\sqrt{\frac{10772 - \frac{236,196}{25}}{25(24)}}$$

$$t = \frac{19,44}{\sqrt{\frac{10772 - 9447,84}{600}}}$$

$$t = \frac{19,44}{\sqrt{2,21}}$$

$$t = \frac{19,44}{1,49}$$

$$t = 13,05$$

find out t-table

$$df = N - 1 = 25 - 1 = 24$$

$$\text{probability} = 5\% = 0,05$$

$$t\text{-table} = 1,711$$

Find out \bar{D}

$$\bar{D} = \frac{\sum \bar{D}}{N} = \frac{368}{25} = 14,72$$

The Calculating of T-Test Value

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum X^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}$$

$$t = \frac{0,59}{\sqrt{\frac{7008 - \frac{(368)^2}{25}}{25(25-1)}}$$

$$t = \frac{14,72}{\sqrt{\frac{7008 - \frac{135,424}{25}}{25(24)}}$$

$$t = \frac{14,72}{\sqrt{\frac{7008 - 5416,96}{600}}}$$

$$t = \frac{14,72}{\sqrt{2,65}}$$

$$t = \frac{14,72}{1,63}$$

$$t = 9,03$$

find out t-table

$$df = N - 1 = 25 - 1 = 24$$

$$\text{probability} = 5\% = 0,05$$

$$t\text{-table} = 1,711$$

Table 4.18 The result of T-Test Value and T-table

No	Class	T-Test	T-Table
1	Experimental Class	13,05	1,711
2	Control Class	9,03	1,711

The table above shows that t-test value of experimental class and control class was greater than t-table, it means that the experimental class that used mnemonic keyword method in teaching vocabulary and in control class that didn't use mnemonic keyword method in teaching vocabulary, equally improving students' vocabulary mastery. But the increase in experimental class was greater than the control class.

4.2 Discussion

Mnemonic keyword method in improving the students' vocabulary mastery was a success. The writer got a result from this research that through mnemonic keyword method gave influence for the students in memorize word. As explained in data collection writing test was administered twice on the pretest and the posttest. From the finding shows that the mean score of the posttest was higher than the mean score of pretest in experimental class, it concluded that using the mnemonic keyword method improved students' vocabulary mastery.

It related to the theory about mnemonic keyword method which has been mention in the second chapter that mnemonic keyword method is things that help you remember something they work by creating a link in you memory between a word and its definition through another associated image, phrase or sounds.

This study shows that the use of the mnemonic keyword method is effective in improving students' vocabulary mastery, this is supported by the opinion of Wang, Thomas and Oulette which states that research subjects using mnemonic keywords can remember English vocabulary better when compared to other methods. Menurut Johnson, Adams, and Bruning said that mnemonic keywords can facilitate memory for vocabulary abilities.

4.2.1 Experimental Class

In first meeting, the writer gave some vocabularies about "animals" and after that, the writer asked the students to looking for the meaning in the dictionary. The writer explained how to make a keyword from word such "duck". The keyword is dug, next the writer explained make a assosiasi for the keyword. The sentence is "bebek itu mati dan jatuh ditanah dengan menimbulkan suara "dug". After the explained the writer gave a chance to the students to ask. There is students ask the writer "how to find a keyword from the word?" the writer answered the question "find word in indonesia language that have similiary sound of the word, like word Accept the keyword Asep". After the writer answered the question from the students the writer ask rthe students to make a keywoird and sentence from vocabularies

about “animals”.the students finised their duty, after that the writer check the students answer there are three students have a good answered, and the others students still difficult to find the keyword like a word goose, snail.next the writer gave explanation the writer close the meeting.

In the second meeting the writer devide the students to five grup. The writer gave each group vocabularies and the students looking for the meaning, make a keyword, and sentence. After that the writer invated one by one grup to read a loud, but this section there are students shy to read what they write in they books.

In the three meeting, the writer devide the students to five group. The writer gave each group vocabularies and the students looking for the meaning, make a keyword, and sentence. in this meeting the students more active because them enjoy the class make a sentences is more easy for them because they make a sentence using indonesia language but they can memorized the word english to.

In the fourt meeting, writer devide the students to five group. The writer gave each group vocabularies and the students looking for the meaning, make a keyword, and sentence. In this meeting there is students make a sentence in bugis language “anto ma sepeda na pa jumping i sepeda na”. And in this meeting the students more active than the meetings before. the writer close the meeting.

4.2.2 Control Class

In the first meeting until the fourth, the writer did not use the mnemonic keyword method in teaching. At the first meeting, the writer gave a vocabulary list to students, then asked students to look up the meaning of the vocabulary in a dictionary. Af ter that students are asked to memorize the vocabulary. In the first meeting of 25 students, there were only 5 students who could memorize vocbaulary well. At the second meeting, the writer gave a vocabulary to students about “part of the body” the difficulties faced at this meeting students were difficult to arrange they were too noisy and disturbing other friends in memorization. In the third meeting, the writer gave a vocabulary about “Food”. In the fourth meeting, the writer gave a vocabulary about “activity”.

4.2.3 Significant Between Experimental Class and Control class

The mean score both of the classes shows that the mean score of experimental class that was taught mnemonic keyword method in pretest was 57,44 and the standard deviation was 21,78 and on post test was 76,88 and the standard deviation was 16,71. The lowest score of pretest in class was 40 and highest score was 80. the lowest score of posttest in experimental class was 44 and highest score was 96. It shows the score obtained by students in the experimental class that were taught by using mnemonic keyword method.

The mean score of control class that were taught not using mnemonic keyword method, in pretest was 58,08 and the standard deviation was 21,19 and on post test was 72,8 and the standard deviation was 16,25. The lowest score of pretest in class was 40 and highest score was 80. the lowest score of posttest in control class was 44 and highest score was 96. It shows the score obtained by students in the control class that were taught not using mnemonic keyword method.

To know what is the hypothesis receipt between alternative hypothesis (H_a) and the null hypothesis (H_0), the writer used t-test value to calculate the result shows that the t-test value of experimental class (13,05) was greater than the t-test value of control class (9,03). It means that the alternative hypothesis (H_a) concluded that the mnemonic keyword method can improve vocabulary mastery students'. It was concluded that the null hypothesis (H_0) was rejected.

From the t-test value of both of the classes, the writer had concluded that there was a significant difference between pre-test and post-test of experimental class and control class. From the table, it shows that t-test (2,8) was greater than t-table (1,771). It was indicated that there was a significant difference between both of the classes, the experimental class, and the control class.

Based on the findings above and the theory in the second chapter, the writer concluded that using the mnemonic keyword method effective to improve students vocabulary mastery.