CHAPTER IV
RESULT OF THE STUDY

In this chapter, the writer explains the result of the study. It contains description of the data and result of the data analysis.

A. Description of the Data

In this case, the writer divided the data of the students scores taken from the students' Crossword puzzle works between those who taught using crossword puzzle and who taught using non- crossword puzzle of Eleventh Grade Students of SMA Muhammadiyah 1 Palangka Raya.

1. Scores of the students' pre-test of experimental and control classes

a. Scores of the students' pre-test of experimental class

Based on the test, the writer constructed the result which analyzed in following ways:

Table 3.1

Students' Scores of Pre-Test of Experimental Class

N0	Code	Scores	X2
1	**E01**	72	5184
2	**E02**	36	1296
3	**E03**	44	1936
4	**E04**	52	2704
5	**E05**	40	1600
6	**E06**	32	1024
7	**E07**	40	1600
8	**E08**	40	1600
9	**E09**	40	1600
10	**E10**	36	1296
11	**E11**	32	1024

12	**E12**	16	256
13	**E13**	60	3600
14	**E14**	32	1024
15	**E15**	48	2304
16	**E16**	40	1600
17	**E17**	72	5184
18	**E18**	64	4096
19	**E19**	40	1600
20	**E20**	40	1600
21	**E21**	36	1296
22	**E22**	72	5184
23	**E23**	40	1600
24	**E24**	32	1024
25	**E25**	36	1296
26	**E26**	24	576
27	**E27**	48	2304
28	**E28**	28	784
29	**E29**	40	1600
30	**E30**	36	1296
	TOTAL	1268	59088

From the data above it is known highest score is 72, and the lowest score is 16.

The writer got the data from the result of test. It can be known:

High score: 72, low score: 16

Range of score: R = H – L + 1

= 72 – 16+ 1

= 57

Furthermore, the writer arranged the data of the students' scores as can be seen in the following table:

Table 3.2

The Distribution of Frequency of the students' scores of pre-test of Experimental Class

NO	SCORES	F	%
1	72	3	9,99%
2	64	1	3,33%
3	60	1	3,33%
4	52	1	3,33%
5	48	2	6,68%
6	44	1	3,33%
7	40	9	30%
8	36	5	16,67%
9	32	4	13,34%
10	28	1	3,33%
11	24	1	3,33%
12	16	1	3,33%
		30	100%

Note: $p = f / n \times 100\%$

From the table above, it can be explained that on number 1 (one) there are 3 (three) students or about (9,99%) who obtained score 72. On number 2 (two) there is 1 (one) students or about (3,33%) who obtained score 64. On number 3 (three) there is 1 (one) students or about (3,33%) who obtained score 60. On number 4 (four) there is 1 (one) students or about (3,33%) who obtained score 52. On number 5 (five) there are 2 (two) students or about (6,68%) who obtained score 48. On number 6 (six) there is 1 (one) students or about (3,33%) who obtained score 44. On number 7 (seven) there are 9 (nine) students or about (30%) who obtained score 40. On number 8 (eight) there are 5 (five) students or about (16,67%) who obtained score 36. On number 9 (nine) there are 4 (four) students or about (13,34%) who obtained score 32. On number 10 (ten) there is 1 (one) students or

about (3,33%) who obtained score 28. On number 11 (eleven) there is 1 (one) students or about (3,33%) who obtained score 24. On number 12 (twelve) there is 1 (one) students or about (3,33%) who obtained score 16.

From the distribution of frequency above, the writer constructed the histogram as follow:

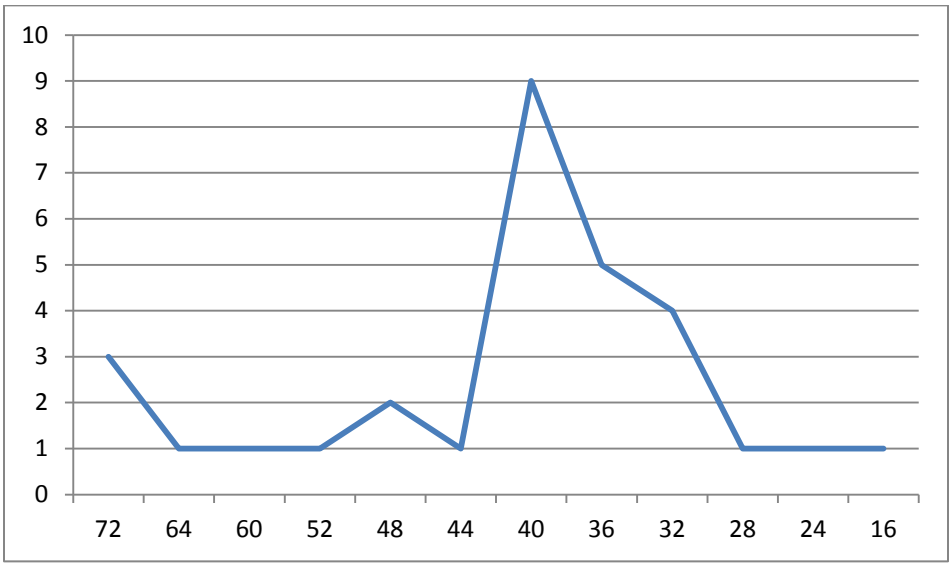

Figure 3.1 Histogram of Frequency Distribution of Students' Scores of Pre-Test of Experimental Class

These are calculation of mean, median and modus can be seen at the following table:

1) Mean

The description and calculation of mean are presented in the following table:

Table 3.3

The Calculation of Mean

NO	SCORES	F	fX
1	72	3	216
2	64	1	64
3	60	1	60
4	52	1	52
5	48	2	96
6	44	1	44
7	40	9	360
8	36	5	180
9	32	4	128
10	28	1	28
11	24	1	24
12	16	1	16
	TOTAL	Σf = 30	ΣfX = 1268

From the data above, it is known:

$$M_x = \frac{\Sigma fX}{N}$$

$$= \frac{1268}{30}$$

$$= 42{,}26$$

From the result of calculation above, it can be known that the mean score which have been obtained 42,26

2) Median

The description and calculation of median are presented as follows:

Table 3.4

The Calculation of Median

NO	SCORES	F	fX	fkb	Fka
1	72	3	216	30	3
2	64	1	64	27	4
3	60	1	60	26	5
4	52	1	52	25	6
5	48	2	96	24	8
6	44	1	44	22	9
7	40	9	360	21	18
8	36	5	180	12	23
9	32	4	128	7	27
10	28	1	28	3	28
11	24	1	24	2	29
12	16	1	16	1	30
	TOTAL	Σf = 30	ΣfX = 1268		

From the data above, it is known:

N = 30 ½ N = 15

Mdn = 40

l = 39,5

$fk_b = 21$

fi = 9

yields:

$$\text{Median} = l + \left(\frac{½N - fk_b}{f_i} \right)$$

$$= 39{,}5 + \left(\frac{15 - 21}{9} \right)$$

= 39,5 + 0,6

= 40,1

3) Modus

The description and calculation of modus are presented in the following table:

Table 3.5

The Calculation of Modus

NO	SCORES	F
1	72	3
2	64	1
3	60	1
4	52	1
5	48	2
6	44	1
7	40	9
8	36	5
9	32	4
10	28	1
11	24	1
12	16	1
	TOTAL	Σf = 30

From the data above, it is known that Modus is 40. It is known from score which has highest frequency.

b. Scores of the students' pre-test of control class

Based on the test, the writer constructed the result which analyzed in the following ways:

Table 3.6

Students' Scores of pre-test of Control Class

N0	Codes	Scores	X2
1	**C01**	40	1600
2	**C02**	40	1600
3	**C03**	36	1296
4	**C04**	32	1024
5	**C05**	40	1600
6	**C06**	32	1024
7	**C07**	40	1600
8	**C08**	60	3600
9	**C09**	28	784
10	**C10**	68	4624
11	**C11**	32	1024
12	**C12**	64	4096
13	**C13**	60	3600
14	**C14**	52	2704
15	**C15**	28	784
16	**C16**	68	4624
17	**C17**	36	1296
18	**C18**	68	4624
19	**C19**	44	1936
20	**C20**	36	1296
21	**C21**	60	3600
22	**C22**	56	3136
23	**C23**	40	1600
24	**C24**	64	4096
25	**C25**	68	4624
26	**C26**	72	5184
27	**C27**	60	3600
28	**C28**	80	6400
TOTAL		1404	76976

From the data above it is known highest score is 80, and the lowest score is 28.

The writer got the data from the result of test. It can be known:

High score: 80

Low score: 28

Range of score: R = H – L + 1

= 80 – 28 + 1

= 53

Furthermore, the writer arranged the data of the students' scores as can be seen in the following table:

Table 3.7

The Distribution of Frequency of the students' scores of pre-test of control class

NO	SCORES	F	%
1	80	1	4
2	72	1	4
3	68	4	14
4	64	2	8
5	60	4	14
6	56	1	4
7	52	1	4
8	44	1	4
9	40	5	17
10	36	3	10
11	32	3	10
12	28	2	7
Total		28	100

Note: p = f/n x 100%

From the table above, it can be explained that on number 1 (one) there is 1 (one) students or about (4%) who obtained score 80. On number 2 (two) there are 1 (one) students or about (4%) who obtained score 72. On number 3 (three) there are 4(four) students or about (14%) who obtained score 68. On number 4 (four) there are 2 (two) students or about (8%) who obtained score 64. On number 5 (five) there is 4 (four) students or about (14%) who obtained score 60. On number 6 (six) there is 1 (one) students or about (4%) who obtained score 56. On number 7 (seven) there are 1(one) students or about (4%) who obtained score 52. On number 8 (eight) there is 1 (one) students or about (4%) who obtained score 44. On number 9 (nine) there are 5 (five) students or about (17%) who obtained score 40. On number 10 (ten) there are 3 (three) students or about (10%) who obtained score 36. On number 11(eleven) there are 3 (one) students or about (10%) who obtained score 32. On number 12 (twelve) there are 2(two) students or about (7%) who obtained score 28.

From the distribution of frequency above, the writer constructed the histogram as follow:

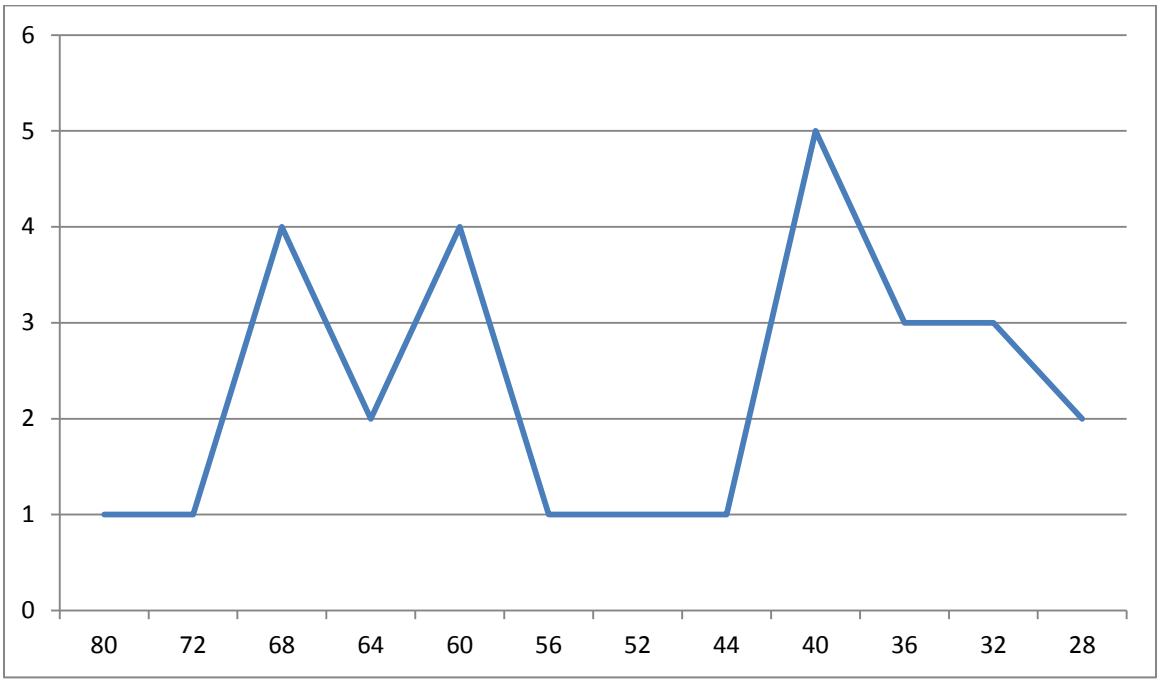

Figure 3.2 Histogram of Frequency Distribution of Students' Scores of Pre-test of Control Class

These are calculation of mean, median and modus can be seen at the following table:

1) Mean

The description and calculation of mean are presented in the following table:

Table 3.8

The Calculation of Mean

NO	SCORES	F	fX
1	80	1	80
2	72	1	72
3	68	4	272

4	64	2	128
5	60	4	240
6	56	1	56
7	52	1	52
8	44	1	44
9	40	5	200
10	36	3	108
11	32	3	96
12	28	2	56
Total		28	ΣfX = 1404

From the data above, it is known:

$$M_x = \frac{\Sigma \square \square}{\square}$$

$$= \frac{1268}{30}$$

$$= 42{,}26$$

From the result of calculation above, it can be known that the mean score which have been obtained 50,14

2) Median

The description and calculation of median are presented as follows:

Table 3.9

The Calculation of Median

NO	SCORES	F	fX	fkb	Fka
1	80	1	80	28	1

2	72	1	72	27	2
3	68	4	272	26	6
4	64	2	128	22	8
5	60	4	240	20	12
6	56	1	56	16	13
7	52	1	52	15	14
8	44	1	44	14	15
9	40	5	200	13	20
10	36	3	108	8	23
11	32	3	6	5	6
12	28	2	56	2	28
Total		f = 28	ΣfX = 1404		

From the data above, it is known:

N = 28, ½ N = 14

Mdn = 40

l = 39,5

$fk_b = 8$

$fi = 4$

yields:

$$\text{Median} = l + \left(\frac{\frac{1}{2}N - fk_b}{f_i} \right)$$

$$= 39{,}5 + \left(\frac{14 - 8}{4} \right)$$

$$= 39{,}5 + 1{,}5$$

$$= 54{,}5$$

3) Modus

The description and calculation of modus are presented in the following table:

Table 3.10

The Calculation of Modus

NO	SCORES	F
1	80	1
2	72	1
3	68	4

4	64	2
5	60	4
6	56	1
7	52	1
8	44	1
9	40	5
10	36	3
11	32	3
12	28	2
Total		$\Sigma f = 28$

From the data above, it is known that Modus is 40. It is known from score which has highest frequency.

2. Scores of the students' post-test of experimental and control class

a. Scores of the students' post-test of experimental class

Based on the test, the writer constructed the result which analyzed in following ways:

Table 3.11

Students' Scores of Post-Test of Experimental Class

N0	Code	Scores	X2
1	**E01**	76	5576
2	**E02**	84	7056
3	**E03**	72	5184
4	**E04**	80	6400
5	**E05**	76	5776
6	**E06**	72	5184
7	**E07**	80	6400
8	**E08**	72	5184
9	**E09**	68	4624
10	**E10**	88	7744
11	**E11**	72	5184
12	**E12**	80	6400
13	**E13**	72	5184
14	**E14**	80	6400

15	**E15**	76	5776
16	**E16**	88	7744
17	**E17**	80	6400
18	**E18**	76	5776
19	**E19**	72	5184
20	**E20**	80	6400
21	**E21**	76	5184
22	**E22**	60	3600
23	**E23**	64	4096
24	**E24**	88	7744
25	**E25**	68	4624
26	**E26**	76	5184
27	**E27**	84	7056
28	**E28**	72	5184
29	**E29**	80	6400
30	**E30**	72	5184
TOTAL		2284	173832

From the data above it is known that highest score is 88, and the lowest score is 60.

The writer got the data from the result of test. It can be known:

High score: 88, low score: 60

Range of score: R = H – L + 1

= 88 – 60 + 1

= 29

Furthermore, the writer arranged the data of the students scores as can be seen in the following table:

Table 3.12

The Distribution of Frequency of the students' score of post-test of Experimental Class

No	Scores	F	%
1	60	1	3,33 %
2	64	1	3,33 %
3	68	2	6,66 %
4	72	8	26,64 %
5	76	6	20 %
6	80	7	23,33 %
7	84	2	6,66 %
8	88	3	10 %
TOTAL		30	100

From the table above, it can be explained that on number 1 (one) there is 1 (one) students or about (3,33%) who obtained score 60. On number 2 (two) there is 1 (one) students or about (3,33%) who obtained score 64. On number 3 (three) there are 2 (two) students or about (6,66%) who obtained score 68. On number 4 (four) there are 8 (one) students or about (26,64%) who obtained score 72. On number 5 (five) there are 6 (six) students or about (20%) who obtained score 76. On number 6 (six) there are 7 (seven) students or about (23,33%) who obtained score 80. On number 7 (seven) there are 2 (two) students or about (6,66%) who obtained score 84. On number 8 (eight) there are 3 (three) students or about (10%) who obtained score 80.

From the distribution of frequency above, the writer constructed the histogram as follow:

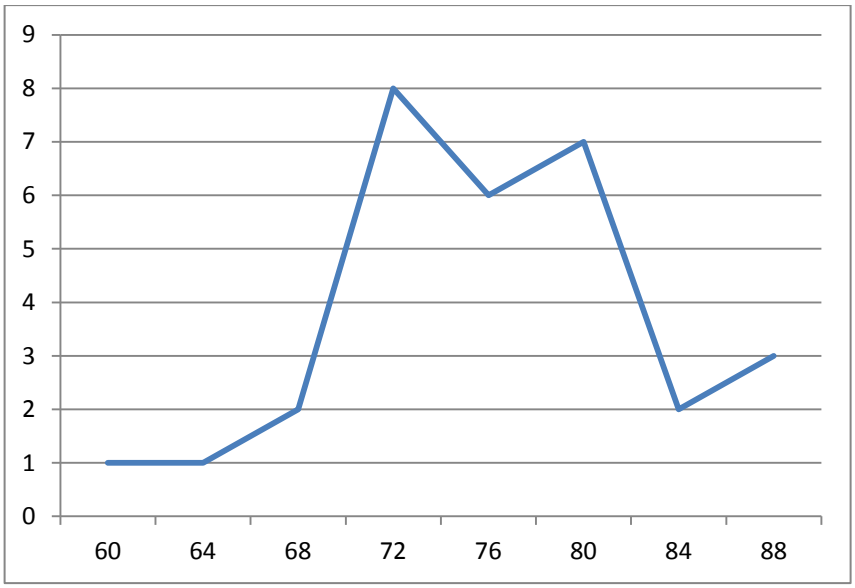

Figure 3.3 Histogram of Frequency Distribution of Students' Scores of post-test of Experimental Class

These are calculation of mean, median and modus can be seen at the following table:

1) Mean

The description and calculation of mean are presented in the following table:

Table 3.13
The Calculation of Mean

No	Scores	F	fX
1	60	1	60
2	64	1	64
3	68	2	136
4	72	8	576
5	76	6	456
6	80	7	560
7	84	2	168
8	88	3	264
		30	2284

From the data above, it is known:

$$M_x = \frac{\sum fX}{N}$$

$$= \frac{2284}{30}$$

$$= 76{,}133$$

From the result of calculation above, it can be known that the mean score which have been obtained 76,133

2) Median

The description and calculation of median are presented as follows:

Table 3.14

The Calculation of Median

No	Scores	F	fX	fkb	Fka
1	60	1	60	30	1
2	64	1	64	29	2
3	68	2	136	28	4
4	72	8	576	26	12
5	76	6	456	18	18
6	80	7	560	12	25
7	84	2	168	5	27
8	88	3	264	3	30
		30	2284		

From the data above, it is known:

N = 30, ½ N = 15

Mdn = 72

l = 71,5

$fk_b = 18$

fi = 8

yields:

$$\text{Median} = l + \left(\frac{\frac{1}{2}N - fk_b}{f_i} \right)$$

$$= 71{,}5 + \left(\frac{15 - 18}{8} \right)$$

$$= 71{,}5 - 0{,}556$$

$$= 71{,}125$$

3) Modus

The description and calculation of modus are presented in the following table:

Table 3.15

The Calculation of Modus

No	Scores	F
1	60	1
2	64	1
3	68	2
4	72	8
5	76	6
6	80	7
7	84	2
8	88	3
total		30

From the data above, it is known that Modus is 72. It is known from score which has highest frequency.

b. Scores of the students' post-test of control class

Based on the test, the writer constructed the result which analyzed in the following ways:

Table 3.16

Students' Scores of post-test of Control Class

N0	Codes	Scores	X2
1	**C01**	68	4624
2	**C02**	76	5776
3	**C03**	84	7056
4	**C04**	80	6400
5	**C05**	76	5776
6	**C06**	68	4624
7	**C07**	72	5188
8	**C08**	76	5776
9	**C09**	80	6400
10	**C10**	88	7744
11	**C11**	76	5776
12	**C12**	72	5188
13	**C13**	72	5188
14	**C14**	80	6400
15	**C15**	76	5776

16	**C16**	72	5188
17	**C17**	76	5776
18	**C18**	80	6400
19	**C19**	68	4624
20	**C20**	76	5776
21	**C21**	64	4096
22	**C22**	76	5776
23	**C23**	76	5776
24	**C24**	60	3600
25	**C25**	84	7056
26	**C26**	76	5776
27	**C27**	72	5188
28	**C28**	72	5188
TOTAL		2096	157912

From the data above it is known highest score is 88, and the lowest score is 60.

The writer got the data from the result of test. It can be known:

High score: 88

Low score: 60

Range of score: R = H – L + 1

= 88 – 60 + 1

= 29

Furthermore, the writer arranged the data of the students' scores as can be seen in the following table:

Table 3.17

The Distribution of Frequency of the students' scores of Control Class

No	Scores	F	%
1	60	1	3,57 %
2	64	1	3,57 %
3	68	3	10,71 %
4	72	6	21,43 %
5	76	10	35,71 %
6	80	4	14,28 %
7	84	2	7,14 %
8	88	1	3,57 %
TOTAL		28	100

Note: p = f/n x 100%

From the table above, it can be explained that on number 1 (one) there is 1 (one) students or about (3,57%) who obtained score 60. On number 2 (two) there is 1 (one) students or about (3,57) who obtained score 64. On number 3 (three) there are 3 (three) students or about (10,71%) who obtained score 68. on number 4 (four) there are 6 (six) students or about (21,43%) who obtained score 72. On

number 5 (five) there are 10 (ten) students or about (35,71%) who obtained score 76. On number 6 (six) there are 4 (four) students or about (14,28%) who obtained score 80. On number 7 (seven) there are 2 (two) students or about (7,14%) who obtained score 84. On number 8 (eight) there is 1 (one) students or about (3,57%) who obtained score 88.

From the distribution of frequency above, the writer constructed the histogram as follow:

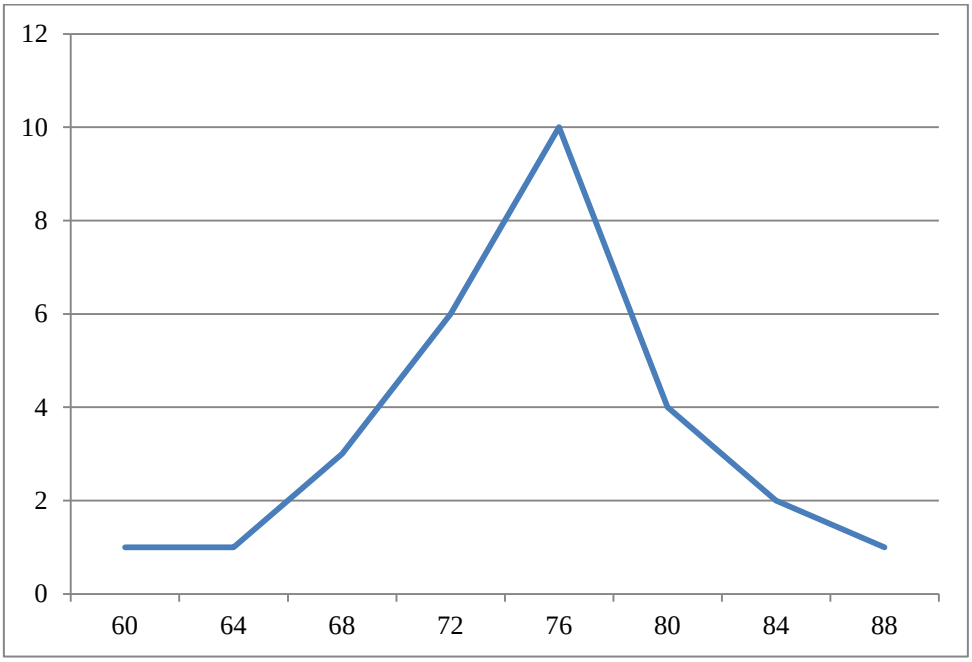

Figure 3.4 Histogram of Frequency Distribution of Students' Scores of post-test of Control Class

These are calculation of mean, median and modus can be seen at the following table:

1) Mean

The description and calculation of mean are presented in the following table:

Table 3.18

The Calculation of Mean

No	Scores	F	fX
1	60	1	60
2	64	1	60
3	68	3	204
4	72	6	432
5	76	10	760
6	80	4	320
7	84	2	168
8	88	1	88
TOTAL		28	2029

From the data above, it is known:

$$M_x = \frac{\sum fX}{N}$$

$$= \frac{2029}{28}$$

$$= 72.46$$

From the result of calculation above, it can be known that the mean score which have been obtained 72,46.

2) Median

The description and calculation of median are presented as follows:

Table 3.19

The Calculation of Median

No	Scores	F	fX	fkb	Fka

1	60	1	60	28	1
2	64	1	60	27	2
3	68	3	204	26	5
4	72	6	432	23	11
5	76	10	760	17	21
6	80	4	320	7	25
7	84	2	168	3	27
8	88	1	88	1	28
TOTAL		28	2029		

From the data above, it is known:

N = 28, ½ N = 14

Mdn = 76

l = 75,5

fk_b = 17

fi = 10

yields:

$$\text{Median} = l + \left(\frac{\frac{1}{2}N - fk_b}{f_i} \right)$$

$$= 75{,}5 + \left(\frac{14 - 17}{10} \right)$$

= 75,5 - 0,3

= 74,7

3) Modus

The description and calculation of modus are presented in the following table:

Table 3.20

The Calculation of Modus

No	Scores	F
1	60	1
2	64	1
3	68	3
4	72	6
5	76	10
6	80	4
7	84	2
8	88	1
TOTAL		28

From the data above, it is known that Modus is 76. It is known from score which has highest frequency.

B. Result of the Data Analysis

1. **Deviation standard of the students' post-test of experimental class at Eleventh Grade of SMA Muhammadiyah 1 Palangka Raya.**

The calculation of deviation standard is presented in the following table:

Table 3.21

The Calculation of Deviation Standard of Experimental Class

No	Scores (X)	f	fX	X	x^2	fx^2
1	60	1	60	-6.133	37,6136	37,6136
2	64	1	64	-12,133	147,2096	147,2096

3	68	2	136	-8,133	66,1456	132,2912
4	72	8	576	-4,133	17,0816	140.6528
5	76	6	456	-0,133	0,0176	0,1056
6	80	7	560	3,867	14,9536	104,8383
7	84	2	168	7,867	61,8896	230,8738
8	88	3	264	11,867	140,8256	422,6907
TOTAL		Σf = 30	ΣfX=2284			Σfx^2 = 1,216,2756

To know the deviation standard where:

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

$$SD = \sqrt{\frac{1,216,2756}{30}}$$

SD = 40,5425

2. Deviation standard of the students' post-test of Control Class at Eleventh Grade of SMA Muhammadiyah 1 Palangka Raya.

The calculation of deviation standard is presented in the following table:

Table 3.22

The Calculation of Deviation Standard of Control Class

No	Scores (X)	f	fX	X	x^2	fx^2
1	60	1	60	-12,46	155,2516	155,2516
2	64	1	64	-8,46	71,5716	71,5716
3	68	3	204	-4,46	19,8916	30,6748

4	72	6	432	-0,46	0,2116	0,2696
5	76	10	760	3,54	12,5316	125,316
6	80	4	320	7,54	56,8516	120,4064
7	84	2	168	11,54	133,1716	266,3432
8	88	1	88	15,54	241,4916	241,4916
TOTAL		Σf = 28	ΣfX=2029			Σfx^2 = 971,3248

To know the deviation standard where:

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

$$SD = \sqrt{\frac{971,3248}{28}}$$

SD = 34,6901

3. The Calculation of T-test

Table 3.23

The Calculation of T-test

NO	Scores of students Pre-test (X)	Scores of students Post-test(Y)	D	D^2
1	72	76	-4	16
2	36	84	-48	2304
3	44	72	-28	784
4	52	80	-30	900
5	40	76	-36	1296
6	32	72	-40	1600
7	40	80	-40	1600
8	40	72	-32	1024
9	40	68	-28	784
10	36	88	-52	2704
11	32	72	-40	1600
12	16	80	-64	4096
13	60	72	-12	144

14	32	80	-48	2304
15	48	76	-28	784
16	40	88	-40	1600
17	72	80	-8	64
18	64	76	-12	144
19	40	72	-32	1024
20	40	80	-40	1600
21	36	76	-40	1600
22	72	60	12	144
23	40	64	-24	576
24	32	88	-56	3136
25	36	68	-32	1024
26	24	76	-52	2704
27	48	84	-36	1296
28	28	72	-44	1936
29	40	80	-40	1600
30	36	72	-36	1296
			1010	41684

To know mean of difference, the writer used formula:

$$M_D = \frac{\Sigma D}{N}$$

$$M_D = \frac{-1016}{30}$$

$$M_D = -33{,}87$$

To know SD_D (Standard of Deviation of difference between score variable I and Score variable II), the writer used formula:

$$SD_D = \sqrt{\frac{\sum D^2}{N} - \left[\frac{\sum D}{N}\right]^2}$$

$$SD_D = \sqrt{\frac{42272}{30} - \left[\frac{-1016}{30}\right]^2}$$

$SD_D = \sqrt{}\ 1409,0666667 - 1147,1769$

$SD_D = 16,1831$

To Calculate SE_{MD} (Standard Error of Mean of Difference), the writer used formula:

$$SE_{MD} = \frac{SD_D}{\sqrt{N-1}}$$

$$SE_{MD} = \frac{16,1831}{\sqrt{30-1}}$$

$$SE_{MD} = \frac{16,1831}{5,38516}$$

$SE_{MD} = 3,00513$

To know t_o ($t_{observed}$), the writer used formula:

$$t_0 = \frac{M_D}{SE_{MD}}$$

$$t_0 = \frac{-33,87}{3,00513}$$

$t_0 = -11,2707270567$

$t_0 = -11,271$

To know df (degree of freedom), the writer used formula:

$df = Nx + Ny - 2$

$= 30 + 30 - 2$

$= 58$

With the criteria:

If t_{test} (t_0) > $t_{table,}$ Ha is accepted and Ho is rejected

If t_{test} (t_0) < $t_{table,}$ Ha is rejected and Ho is accepted

Based on the data obtained, the result showed that the mean of students' who taught using crossword puzzle was 76,133, while the mean of students' who taught using non crossword puzzle was 72,46. From both means, there was different value that was 3,6. It meant there is different result of them in crossword puzzle.

Based on the calculation above, it can be known the value from the result of calculation ($t_{observed}$) was -11,271. Then, it is consulted with t_{table} (t_t) which db or df = (N_1 + N_2) – 2 was (30 + 30) – 2 = 58. Significant standard 5% t_{table} (t_t) = 2,02 and significant standard 1% t_{table} (t_t) = 2,65. So, 2,02 < 11,271 > 2,65. It can be said that since the value of $t_{observed}$ (-11,271) was higher than t_{table} in the 5% (2,02) and 1% (2,65) level of significance, it could be interpreted that Ha stating that there is a significant difference between using crossword puzzle can be used to stimulate the students increase vocabulary was accepted and Ho stating that using crossword puzzle can not be use to stimulate the students to increase vocabulary was rejected. It meant that there is a significant difference between who taught using crossword puzzle and who taught using non-crossword puzzle.

Meanwhile, the writer also applied SPSS program to calculate t-test:

Table 3.24

The Calculation of the Result T-test using SPSS 17.0

Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test Scores of Experimental Class - Post-test Scores of Experimental Class	1.286	9.801	1.825	-2.515	5.086	-11,271	27	497

The result of the t-test using SPSS also supported the interpretation above that was found the $t_{observed}$ (-11,271). Significant standard 5% t_{table} (t_t) = 2,02 and significant standard 1% t_{table} (t_t) = 2,65. So, 2,02 < 11,271 > 2,65. It can be said that since the value of $t_{observed}$ (-11,271) was higher than t_{table} in the 5% (2,02) and 1% (2,65) level of significance, it could be interpreted that Ha stating that using crossword puzzle can be used to stimulate the students to increase vocabulary was accepted and Ho stating that that using crossword puzzle can not be used to stimulate the students to increase vocabulary was rejected. It meant that there is a significant effect between using crossword puzzle in teaching vocabulary and who taught using non- crossword puzzle in teaching vocabulary

4. The Calculation of Normality Test

In order to know whether both groups have normal distribution or not, the writer calculated the normality of the data using SPSS 17.0.

Table 3.25

The Calculation of Normality Test Using SPSS 17

One-Sample Kolmogorov-Smirnov Test

		Pre-test Scores of Control Class	Pre-test Scores of Control Class
N		30	28
Normal Parameters[a,,b]	Mean	42.27	50.14
	Std. Deviation	13.764	15.606
Most Extreme Differences	Absolute	.265	.206
	Positive	.265	.206
	Negative	-.128	-.165
Kolmogorov-Smirnov Z		1.454	1.092
Asymp. Sig. (2-tailed)		.029	.184
a. Test distribution is Normal.			

From the calculation above, it is known that the test distribution is normal.

5. The Calculation of Homogeneity Test

In order to know the homogeneity between both groups, the writer applies SPSS 17.0 to analyze the data.

Table 3.26

The Calculation of Homogeneity Test Using SPSS 17.0

Test of Homogeneity of Variances

Post-Test Score Experimental Class

Levene Statistic	df1	df2	Sig.
.511	6	16	.791

Based on the data above, it can be known the value from the result of calculation of homogeneity of variances using SPSS program is 0,791. Then, it is compared with significant standard 0,05. So 0,791 > 0,05. It can be said that since the value of homogeneity test is (0,791) was higher than significant standard (0,05), it could be interpreted that the data were taken from homogen samples.