CHAPTER IV

DATA FINDING AND DISCUSSION

A. Data Finding

In this chapter, the writer presented the obtained data. The data were presented in the following steps.

1. Distribution of the Experimental Group Scores

a. Distribution of Pre Test Scores of the Experimental Group

The pre test scores of the experimental group were presented in the following table.

Table 4.1 The Description of Pre Test Scores of The Data Achieved by The Students in Experimental Group

Students' Code	Score
E01	46
E02	52
E03	39
E04	46
E05	52
E06	46
E07	31
E08	61
E09	49
E10	52
E11	55
E12	31
E13	52
E14	52
E15	39
E16	39
E17	40
E18	37
E19	40
E20	49

E21	**43**
E22	**31**
E23	**58**
E24	**55**
E25	**52**
E26	**34**
E27	**53**
E28	**51**

Based on the data above, it was known the highest score was 61 and the lowest score was 31. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The Highest Score (H) = 61
The Lowest Score (L) = 31
The Range of Score (R) = H – L + 1
= 61 – 31 + 1
= 31
The Class Interval (K) = 1 + (3.3) x Log n
= 1 + (3.3) x Log 28
= 1 + (3.3) x 1.447158031
= 1 + 4.775621502
= 5.775621502
= 6
Interval of Temporary (I) = $\frac{R}{K} = \frac{31}{6}$
= 5.1666666667
=5

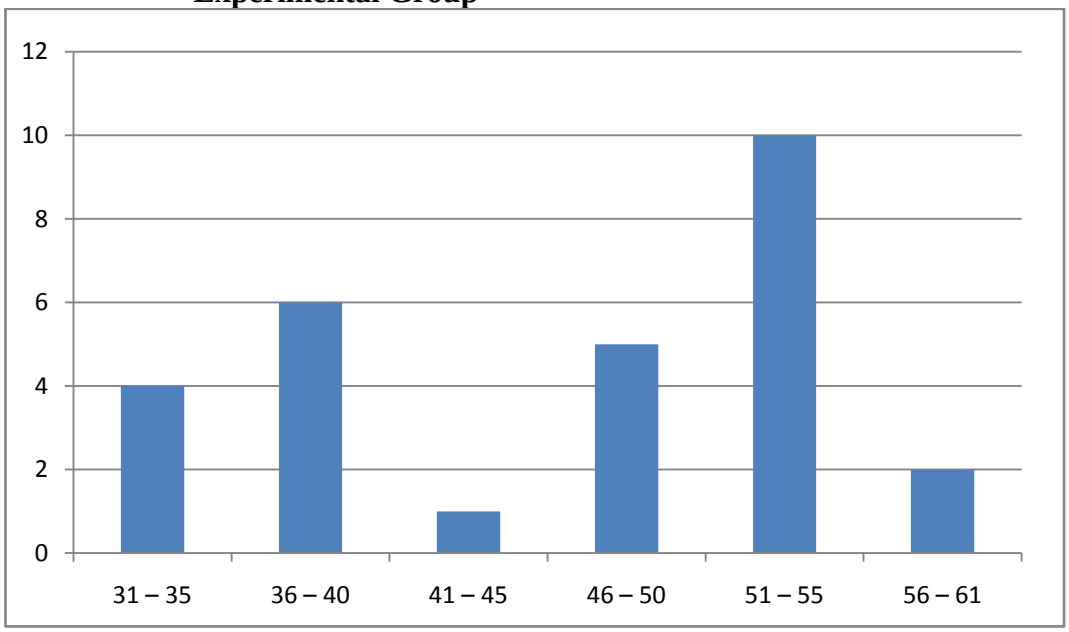
So, the range of score was 31, the class interval was 6, and interval of temporary was 6. Then, it was presented using frequency distribution in the following table:

Table 4.2 The Frequency Distribution of the Pre Test Scores of the Experimental Group

Class (k)	Interval (I)	Frequency (F)	Midpoint (X)	The Limitation of Each Group	Relative Frequency (%)	Cumulative Frequency (%)
1	56 – 61	2	58	55.5 – 61.5	7,14	100
2	51 – 55	10	52	50.5 – 56.5	35,71	92,85

3	46 – 50	5	47	45.5 – 51.5	17,85	57,14
4	41 – 45	1	42	40.5 – 46.5	3,57	39,28
5	36 – 40	6	37	35.5 – 41.5	21,42	35,71
6	31 – 35	4	32,5	30.5 – 36.5	14,28	14,28
		∑F = 28			∑P = 100	

Figure 4.1. The Frequency Distribution of the Pre test Score of the Experimental Group



The table and figure above shows the pre test score of students in experiment group. It could be seen that there were 4 students who got score 31 – 35. There ware 6 students who got score 36 – 40. There was a student who got score 41 – 45. There were 5 students who got 46 – 50. There ware 10 students who got 51 – 55 and there were 2 students who got 56 – 61. In this case, so many students got point 51-55 and just a student got point 41-45 in the pretest. The conclusion is vocabulary of student less and should have new media to increase the vocabulary.

The next step, the writer tabulated the scores into the table for the calculation of mean, median, and modus as follows:

Table 4.3 The Calculation of Mean, Median, and Modus of the Pre Test Scores of the Experimental Group

(I)	(F)	(X)	FX	fk (b)	fk (a)
56 – 61	2	58	116	28	2
51 – 55	10	52	520	26	12
46 – 50	5	47	235	16	17
41 – 45	1	42	42	11	18
36 – 40	6	37	222	10	24
31 – 35	4	32,5	130	4	28
	∑F = 28		∑FX= 1265		

a. Mean

$$Mx = \frac{\sum fX}{N}$$
$$= \frac{1265}{28}$$
$$= 45{,}178571429$$
$$= 45{,}17$$

b. Median

$$Mdn = \ell + \frac{\frac{1}{2}N - fk_b}{f_i}\ x\ i$$
$$= 46.5 + \frac{14-11}{2} \times 5$$
$$= 46.5 + \frac{3}{2} \times 5$$
$$= 46{,}5 + 7{,}5$$
$$= 54$$

c. Modus

$$Mo = \ell + \left(\frac{fa}{fa+fb}\right) x\ i$$
$$= 46.5 + \left(\frac{10}{10+1}\right) \times 5$$
$$= 46.5 + \left(\frac{10}{11}\right) \times 5$$
$$= 46.5 + 4.5454$$
$$= 51{,}04545$$
$$= 51.045$$

The calculation above shows of mean value was 45,17, median value was 54 and modus value was 51.045 of the pre test of the experimental group. The last

step, the writer tabulated the scores of pre test of experimental group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.4 The Calculation of the Standard Deviation and the Standard Error of the Pre Test Scores of Experimental Group

(I)	(F)	(X)	x'	Fx'	Fx'^2
56 – 61	2	58	+2	4	8
51 – 55	10	52	+1	10	10
46 – 50	5	47	0	0	0
41 – 45	1	42	-1	-1	1
36 – 40	6	37	-2	-12	24
31 – 35	4	32,5	-3	-12	36
	$\sum F = 28$			$\sum Fx' = -12$	$\sum Fx'^2 = 79$

a. Standard Deviation

$$SD_1 = i\sqrt{\frac{\sum Fx'^2}{N} - \frac{(Fx')^2}{N}}$$

$$SD_1 = 5\sqrt{\frac{79}{28} - \left(\frac{-12}{28}\right)^2}$$

$$SD_1 = 5\sqrt{2.821 - (-0.428)^2}$$

$$SD_1 = 5\sqrt{2.821 - 0.183}$$

$$SD_1 = 5\sqrt{2.638}$$

$$SD_1 = 5 \times 1.624$$

$$SD_1 = 8.12$$

b. Standard Error

$$SEM_1 = \frac{SD_1}{\sqrt{N_1 - 1}}$$

$$SEM_1 = \frac{8.12}{\sqrt{28 - 1}}$$

$$SEM_1 = \frac{8.12}{\sqrt{27}}$$

$$SEM_1 = \frac{8.12}{5.196}$$

$$SEM_1 = 1.562$$

The result of calculation shows the standard deviation of pre test score of experimental group was 8.12 and the standard error of pre test score of experiment group was 1.562.

b. Distribution of Post Test Scores of the Experimental Group

The post test scores of the experimental group were presented in the following table.

Table 4.5 The Description of Post Test Scores of The Data Achieved by The Students in Experimental Group

Students' Code	Score
E01	64
E02	94
E03	79
E04	85
E05	91
E06	67
E07	67
E08	55
E09	70
E10	76
E11	76
E12	94
E13	64
E14	94
E15	79
E16	88
E17	76
E18	91
E19	82
E20	79
E21	82
E22	82
E23	94
E24	70

E25	**94**
E26	**79**
E27	**70**
E28	**91**

Based on the data above, it was known the highest score was 94 and the lowest score was 55. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The Highest Score (H) = 94
The Lowest Score (L) = 55
The Range of Score (R) = H – L + 1
= 94 – 55 + 1
= 40
The Class Interval (K) = 1 + (3.3) x Log n
= 1 + (3.3) x Log 28
= 1 + (3.3) x 1.447158031
= 1 + 4.775621502
= 5.775621502
= 6
Interval of Temporary (I) = $\frac{R}{K} = \frac{40}{6}$
= 6,66666667
= 6 or 7

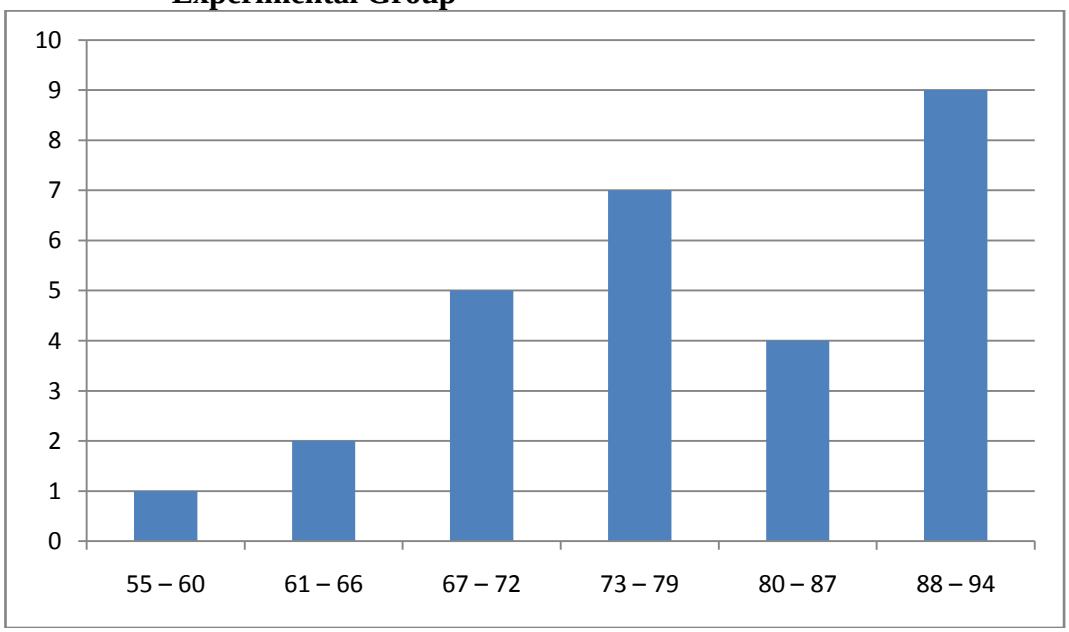
So, the range of score was 40, the class interval was 6, and interval of temporary was 6. Then, it was presented using frequency distribution in the following table:

Table 4.6 The Frequency Distribution of the Post Test Score of the Experimental Group

Class (k)	Interval (I)	Frequency (F)	Midpoint (X)	The Limitation of Each Group	Relative Frequency (%)	Cumulative Frequency (%)
1	88 – 94	9	91	87.5 – 94.5	32,14	100
2	80 – 87	4	83.5	79.5 – 87.5	14,28	67,85
3	73 – 79	7	76	72.5 – 79.5	25	53,57
4	67 – 72	5	69.5	66.5 – 72.5	17,85	28,57
5	61 – 66	2	63.5	59.5 – 66.5	7,14	10,71
6	55 – 60	1	57.5	54.5 – 60.5	3,57	3,57

		∑F = 28			∑P = 100	

Figure 4.2. The Frequency Distribution of the Post Test Scores of the Experimental Group



The table and figure above shows the post test score of students in experimental group. It could be seen that there was a student who got score 55 – 60. There were 2 students who got score 61 – 66. There were 5 students who got score 67 – 72. There were 7 students who got 73 – 79. There were 4 students who got 80 – 87 and there were 9 students who got 88 – 94. In this case, the treatment was success make scores students' vocabulary high and can see in the figure. From 28 students, 9 students got higher score 88-94 and just a student got low point 55-60.

The next step, the writer tabulated the score into the table for the calculation of mean, median, and modus as follows:

Table 4.7 The Calculation of Mean, Median, and Modus of the Post Test Scores of the Experimental Group

(I)	(F)	(X)	FX	fk (b)	fk (a)
88 – 94	9	91	819	28	9
80 – 87	4	83.5	334	19	13
73 – 79	7	76	532	15	11
67 – 72	5	69.5	347.5	8	12
61 – 66	2	63.5	127	3	7
55 – 60	1	57.5	57.5	1	3
	∑F = 28		∑FX= 2217		

a. Mean

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

$$= \frac{2217}{28}$$

$$= 79.17857$$

$$= 79.178$$

b. Median

$$Mdn = \ell + \frac{\frac{1}{2}N - fk_b}{f_i} \; x \; i$$

$$= 66.5 + \frac{14-3}{9} \times 6$$

$$= 66.5 + \frac{11}{9} \times 6$$

$$= 66.5 + 7.333$$

$$= 73.833$$

c. Modus

$$Mo = \ell + \left(\frac{fa}{fa+fb}\right) x \; i$$

$$= 66.5 + \left(\frac{7}{7+2}\right) \times 6$$

$$= 66.5 + \left(\frac{7}{9}\right) \times 6$$

$$= 66.5 + 4.6666$$

$$= 71.1666$$

The calculation above shows of mean value was 79.178, median value was 73.833, and modus value was 71.1666 of the post test of the experimental group.

The last step, the writer tabulated the scores of pre test of control group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.8 The Calculation of the Standard Deviation and the Standard Error of the Post Test Scores of Experimental Group

(I)	(F)	(X)	x'	Fx'	Fx'^{2}
88 – 94	9	91	+3	27	81
80 – 87	4	83.5	+2	8	16
73 – 79	7	76	+1	7	7
67 – 72	5	69.5	0	0	0
61 – 66	2	63.5	-1	-2	2
55 – 60	1	57.5	-2	-2	4
	∑F = 28			∑Fx' = 38	∑Fx'^{2} = 110

a. Standard Deviation

$$SD_1 = i\sqrt{\frac{\sum Fx'^2}{N} - \frac{(Fx')^2}{N}}$$

$$SD_1 = 6\sqrt{\frac{110}{28} - \left(\frac{38}{28}\right)^2}$$

$$SD_1 = 6\sqrt{3.928 - (1.357)^2}$$

$$SD_1 = 6\sqrt{3.928 - 1.8414}$$

$$SD_1 = 6\sqrt{2.0866}$$

$$SD_1 = 6 \times 1.4445$$

$$SD_1 = 8.667$$

b. Standard Error

$$SEM_1 = \frac{SD_1}{\sqrt{N_1 - 1}}$$

$$SEM_1 = \frac{8.667}{\sqrt{28 - 1}}$$

$$SEM_1 = \frac{8.667}{\sqrt{27}}$$
$$SEM_1 = \frac{8.667}{5.1961524227}$$
$$SEM_1 = 1.6679649277$$
$$SEM_1 = 2$$

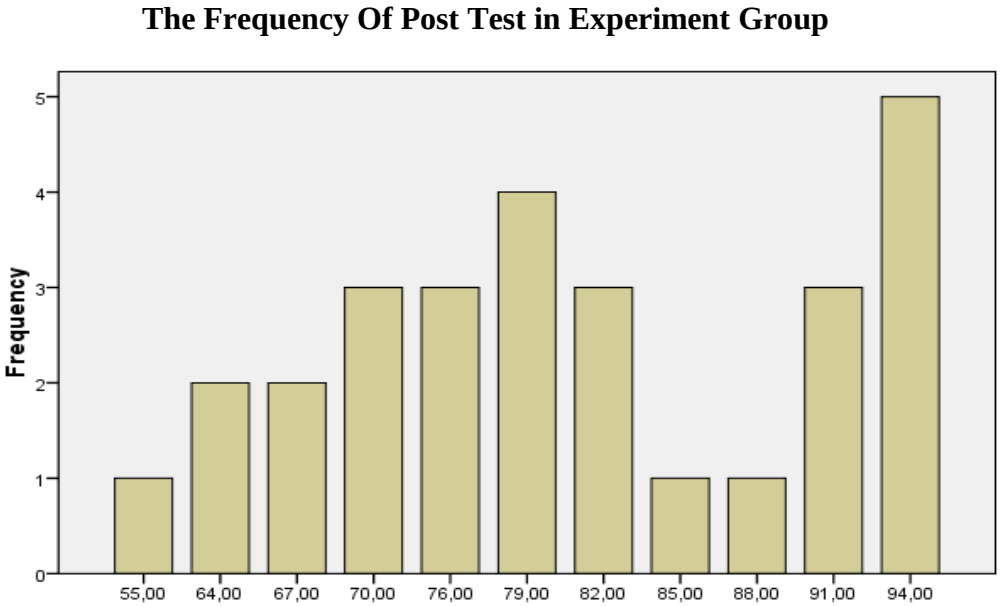
The result of calculation shows standard deviation of post test score of experimental group was 8.667 and the standard error of post test score of experimental group was 2.

The writer also calculated the data calculation of post-test score of experimental group using SPSS 17.0 program. The result of statistic table is as follows:

Table 4.9 The Frequency Distribution of the Post Test Scores of the Experimental Group Using SPSS 17.0 Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	55.00	1	3,6	3,6	3,6
	64.00	2	7,1	7,1	10,7
	67.00	2	7,1	7,1	17,9
	70.00	3	10,7	10,7	28,6
	76.00	3	10,7	10,7	39,3
	79.00	4	14,3	14,3	53,6
	82.00	3	10,7	10,7	64,3
	85.00	1	3,6	3,6	67,9
	88.00	1	3,6	3,6	71,4
	91.00	3	10,7	10,7	82,1
	94.00	5	17,9	17,9	100,0
	Total	28	100,0	100,0	

Figure 4.3. The Frequency Distribution of the Post test Score of the Experimental Group Using SPSS 17.0 Program



The table and figure above shows the result of post-test scorer achieved by the experiment group using SPSS Program. It could be seen that there was a student who got 55 (3.6%). Two student got 64 (7.1%). Two students got 67 (7.1%). Three students got 70 (10.7%). Three students got 76 (10.7%). Four students got 79 (14.3%). Three students got 82 (10.7%). One student got 85 (3.6%). One student got 88 (3.6%). Three students got 91 (10.7%). Five students got 94 (17.9%).

The next step, the writer calculated the score of mean, median, mode, standard deviation, and standard error of mean of post-test score in experiment group as follows:

Table 4.10 The Table of Calculation of Mean, Median, Mode, Standard Deviation, and Standard Error of Mean of Post-test Score in Experiment Group Using SPSS 17.0 Program

N	Valid	28
	Missing	0
Mean		79,7500
Std. Error of Mean		2,07952
Median		79,0000
Mode		94,00
Std. Deviation		11,00379
Variance		121,083
Range		39,00
Minimum		55,00
Maximum		94,00
Sum		2233,00

The table shows the result of mean calculation was 79,7500, the result of median calculation was 79,0000, and the result of mode calculation was 94,00. The result of standard deviation calculation was 11,00379 and the result of standard error of mean calculation was 2,07952.

2. Distribution of the Control Group Scores

a. Distribution of Pre Test Scores of the Control Group

The pre test scores of the control group were presented in the following table.

Table 4.11 The Description of Pre Test Scores of The Data Achieved by The Students in Control Group

Students' Code	Score
C01	37
C02	52

C03	**31**
C04	**43**
C05	**34**
C06	**55**
C07	**49**
C08	**58**
C09	**34**
C10	**43**
C11	**55**
C12	**31**
C13	**64**
C14	**49**
C15	**55**
C16	**43**
C17	**55**
C18	**67**
C19	**34**
C20	**43**
C21	**34**
C22	**40**
C23	**43**
C24	**61**
C25	**43**
C26	**46**
C27	**64**
C28	**61**
C29	**55**

Based on the data above, it was known the highest score was 67 and the lowest score was 31. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The Highest Score (H) = 67
The Lowest Score (L) =31
The Range of Score (R) = H – L + 1
= 67 – 31 + 1
= 40

The Class Interval (K) = 1 + (3.3) x Log n
= 1 + (3.3) x Log 29
= 1 + (3.3) x 1.4623979979
= 1 + 4.8259133931
= 5.8259133931
= 6

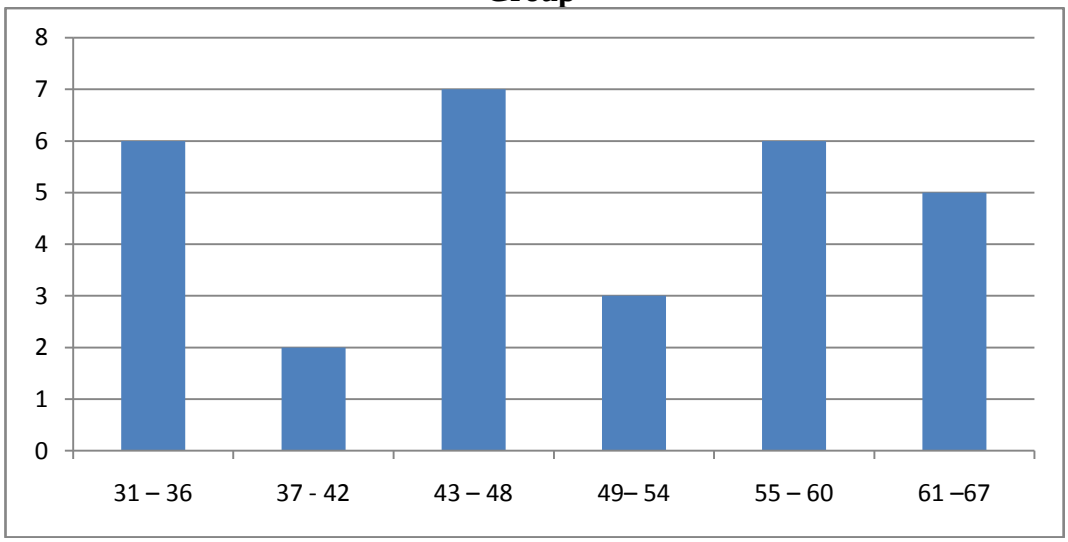
Interval of Temporary (I) = $\frac{R}{K} = \frac{40}{6}$
= 6,66666667
= 6

So, the range of score was 40, the class interval was 6, and interval of temporary was 6. Then, it was presented using frequency distribution in the following table:

Table 4.12 The Frequency Distribution of the Pre Test Score of the Control Group

Class (k)	Interval (I)	Frequency (F)	Midpoint (X)	The Limitation of Each Group	Relative Frequency (%)	Cumulative Frequency (%)
1	61 – 67	5	64	60.5 – 67.5	17,241	100
2	55 – 60	6	57.5	54.5 – 60.5	20,690	82,759
3	49 – 54	3	51.5	48.5 – 54.5	10,345	62,069
4	43 – 48	7	45.5	42.5 – 48.5	24,138	51,724
5	37 – 42	2	39.5	36.5 – 42.5	6,897	27,586
6	31 – 36	6	33.5	30.5 – 36.5	20,690	20,690
		∑F = 29			∑P = 100	

Figure 4.4. The Frequency Distribution of the Pre Test Scores of the Control Group



The table and figure above shows the pre test score of students in experimental group. It could be seen that there were 6 students who got score 31 – 36. There were 2 students who got score 37 – 42. There were 7 students who got score 43 – 48. There were 3 students who got 49 – 54. There were 6 students who got 55 – 60 and there were 5 students who got 61 – 67. In this case, so many students got point 43-48 and some students got point 61-67 in the pretest. The next step, the writer tabulated the score into the table for the calculation of mean, median, and modus as follows:

Table 4.13 The Calculation of Mean, Median, and Modus of the Pre Test Scores of the Control Group

(I)	(F)	(X)	FX	fk (b)	fk (a)
61 – 67	5	64	320	29	5
55 – 60	6	57.5	345	24	11
49 – 54	3	51.5	154,5	18	9
43 – 48	7	45.5	318,5	15	10
37 – 42	2	39.5	79	8	9
31 – 36	6	33.5	201	6	8
	∑F = 29		∑FX= 1418		

a. Mean

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

$$= \frac{1418}{29}$$

$$= 48.8965517$$

$$= 48.896$$

b. Median

$$Mdn = \ell + \frac{\frac{1}{2}N - fk_b}{f_i} \; x \; i$$

$$= 42.5 + \frac{14.5 - 8}{5} \times 6$$

$$= 42.5 + \frac{6.5}{5} \times 6$$

$$= 42.5 + 7.8$$
$$= 50.3$$

c. Modus

$$\text{Mo} = \ell + \left(\frac{fa}{fa+fb}\right) x\ i$$
$$= 42.5 + \left(\frac{3}{3+2}\right) \times 6$$
$$= 42.5 + \left(\frac{3}{5}\right) \times 6$$
$$= 42.5 + 3.6$$
$$= 46.1$$

The calculation above shows of mean value was 48.896, median value was 50.3, and modus value was 46.1 of the post test of the control group.

The last step, the writer tabulated the scores of pre test of control group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.14 The Calculation of the Standard Deviation and the Standard Error of the Post Test Scores of Control Group

(I)	(F)	(X)	x'	Fx'	Fx'^2
61 – 67	5	64	+3	15	45
55 – 60	6	57.5	+2	12	24
49 – 54	3	51.5	+1	3	3
43 – 48	7	45.5	0	0	0
37 – 42	2	39.5	-1	-2	2
31 – 36	6	33.5	-2	-12	14
	$\sum F = 29$			$\sum Fx' = 16$	$\sum Fx'^2 = 98$

a. Standard Deviation

$$SD_1 = i\sqrt{\frac{\sum Fx'^2}{N} - \frac{(Fx')^2}{N}}$$

$$SD_1 = 6\sqrt{\frac{98}{29} - \left(\frac{16}{29}\right)^2}$$

$$SD_1 = 6\sqrt{3.379 - (0.5517)^2}$$

$$SD_1 = 6\sqrt{3.379 - 0.30437}$$

$$SD_1 = 6\sqrt{3.07463}$$

$$SD_1 = 6 \times 1.753$$

$$SD_1 = 10.518$$

b. Standard Error

$$SEM_1 = \frac{SD_1}{\sqrt{N_1 - 1}}$$

$$SEM_1 = \frac{10.518}{\sqrt{29 - 1}}$$

$$SEM_1 = \frac{10.518}{\sqrt{28}}$$

$$SEM_1 = \frac{10.518}{5.2915}$$

$$SEM_1 = 1.98771$$

$$SEM_1 = 1.987$$

The result of calculation shows the standard deviation of pre test score of control group was 10.518 and the standard error of post test score of experimental group was 1.987.

b. Distribution of Post Test Scores of the Control Group

The post test scores of the control group were presented in the following table.

Table 4.15 The Description of Post Test Scores of The Data Achieved by The Students in Control Group

Students' Code	Score
C01	40
C02	55
C03	37
C04	46

C05	**40**
C06	**49**
C07	**64**
C08	**67**
C09	**40**
C10	**40**
C11	**64**
C12	**64**
C13	**94**
C14	**67**
C15	**73**
C16	**70**
C17	**76**
C18	**58**
C19	**31**
C20	**31**
C21	**58**
C22	**88**
C23	**31**
C24	**67**
C25	**52**
C26	**94**
C27	**82**
C28	**58**
C29	**67**

Based on the data above, it was known the highest score was 94 and the lowest score was 31. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The Highest Score (H) = 94
The Lowest Score (L) =31
The Range of Score (R) = H – L + 1
= 94 – 31 + 1
= 64
The Class Interval (K) = 1 + (3.3) x Log n
= 1 + (3.3) x Log 29
= 1 + (3.3) x 1.4623979979
= 1 + 4.8259133931

= 5.8259133931
= 6

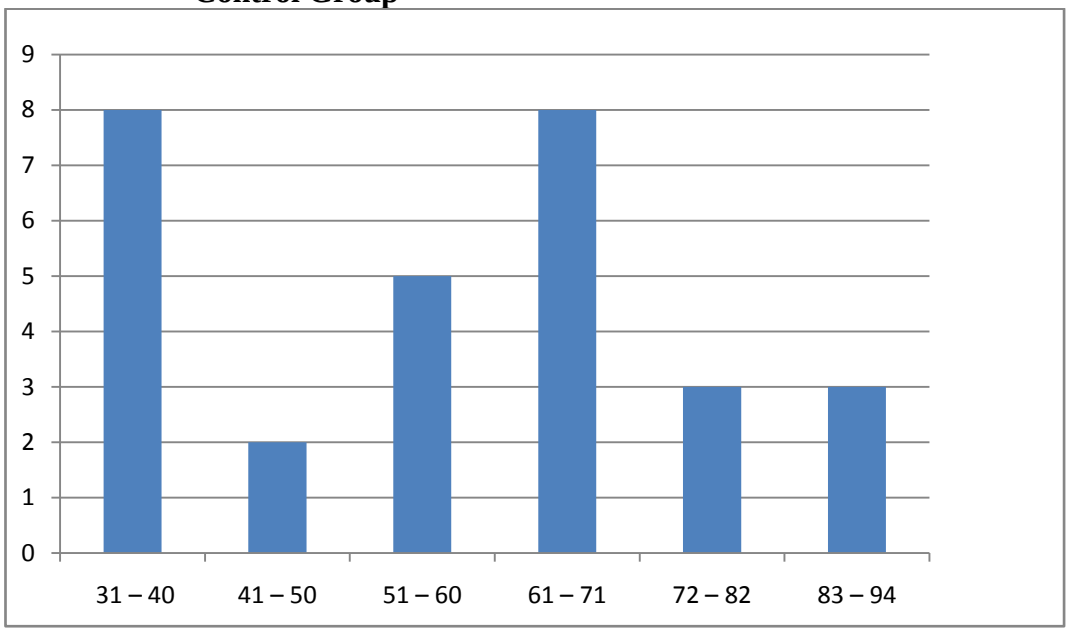
Interval of Temporary (I) $= \frac{R}{K} = \frac{64}{6}$
= 10.666666667
=10 or 11

So, the range of score was 70, the class interval was 6, and interval of temporary was 10. Then, it was presented using frequency distribution in the following table:

Table 4.16 The Frequency Distribution of the Pos Test Scores of the Control Group

Class (k)	Interval (I)	Frequency (F)	Midpoint (X)	The Limitation of Each Group	Relative Frequency (%)	Cumulative Frequency (%)
1	83 – 94	3	88.5	62.5 – 94.5	10,345	100
2	72 – 82	3	77	71.5 – 82.5	10,345	6,897
3	61 – 71	8	66	60.5 – 71.5	27,586	-3,448
4	51 – 60	5	55.5	50.5 – 60.5	17,241	0,000
5	41 – 50	2	45.5	40.5 – 50.5	6,897	82,759
6	31 – 40	8	35.5	30.5 – 40.5	27,586	-6,897
		∑F = 29			∑P = 100	

Figure 4.5. The Frequency Distribution of the Post test Score of the Control Group



The table and figure above shows the post test score of students in control group. It could be seen that there were 8 students who got score 31 – 40. There ware 2 students who got score 41 – 50. There were 5 students who got score 51 – 60. There were 8 students who got 61 – 71. There ware 3 students who got 72 – 82 and there were 3 students who got 83 - 94. From the chart can see the scores of post test many students got less scores 31-40, that is same with the average scores61-71. That give proof with English song media, students' vocabulary will increase. The next step, the writer tabulated the scores into the table for the calculation of mean, median, and modus as follows:

Table 4.17 The Calculation of Mean, Median, and Modus of the Post Test Scores of the Control Group

(I)	(F)	(X)	FX	fk (b)	fk (a)
83 – 94	3	88.5	265.5	29	3
72 – 82	3	77	231	26	6
61 – 71	8	66	528	23	11
51 – 60	5	55.5	277.5	15	13
41 – 50	2	45.5	91	10	7
31 – 40	8	35.5	284	8	10
	∑F = 29		∑FX= 1767		

a. Mean

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

$= \frac{1767}{29}$

$= 60.9310344828$

$= 60.931$

b. Median

Mdn $= \ell + \frac{\frac{1}{2}N - fk_b}{f_i} \; x \; i$

$= 50.5 + \frac{14.5 - 10}{3} \times 10$

$= 50.5 + \frac{4.5}{3} \times 10$

$= 50.5 + 15$

$= 65.5$

c. Modus

$$\text{Mo} = \ell + \left(\frac{fa}{fa+fb}\right) x\ i$$
$$= 50.5 + \left(\frac{8}{8+2}\right) \times 10$$
$$= 50.5 + \left(\frac{8}{10}\right) \times 10$$
$$= 50.5 + 8$$
$$= 58.5$$

The calculation above shows of mean value was 60,931, median value was 65.5 and modus value was 58.5 of the pre test of the control group. The last step, the writer tabulated the scores of pre test of control group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.18 The Calculation of the Standard Deviation and the Standard Error of the Pre Test Scores of Control Group

(I)	(F)	(X)	x'	Fx'	Fx'^{2}
83 – 94	3	88.5	+2	6	12
72 – 82	3	77	+1	3	3
61 – 71	8	66	0	0	0
51 – 60	5	55.5	-1	-5	5
41 – 50	2	45.5	-2	-4	8
31 – 40	8	35.5	-3	-24	72
	∑F = 29			∑Fx' = -24	∑Fx'^{2} = 100

a. Standard Deviation

$$SD_1 = i\sqrt{\frac{\sum Fx'^2}{N} - \frac{(Fx')^2}{N}}$$
$$SD_1 = 10\sqrt{\frac{100}{29} - \left(\frac{-24}{29}\right)^2}$$
$$SD_1 = 10\sqrt{3.448 - (-0.82758)^2}$$
$$SD_1 = 10\sqrt{3.448 - 0.684888}$$
$$SD_1 = 10\sqrt{2.763112}$$
$$SD_1 = 10 \times 1.6622$$
$$SD_1 = 16.622$$

b. Standard Error

$$SEM_1 = \frac{SD_1}{\sqrt{N_1 - 1}}$$

$$SEM_1 = \frac{16.622}{\sqrt{29-1}}$$
$$SEM_1 = \frac{16.622}{\sqrt{28}}$$
$$SEM_1 = \frac{16.622}{5.291}$$
$$SEM_1 = 3.141$$

The result of calculation shows the standard deviation of post test score of control group was 16,622 and the standard error of post test score of control group was 3,141.

The writer also calculated the data calculation of post-test score of experimental group using SPSS 17.0 program. The result of statistic table is as follows:

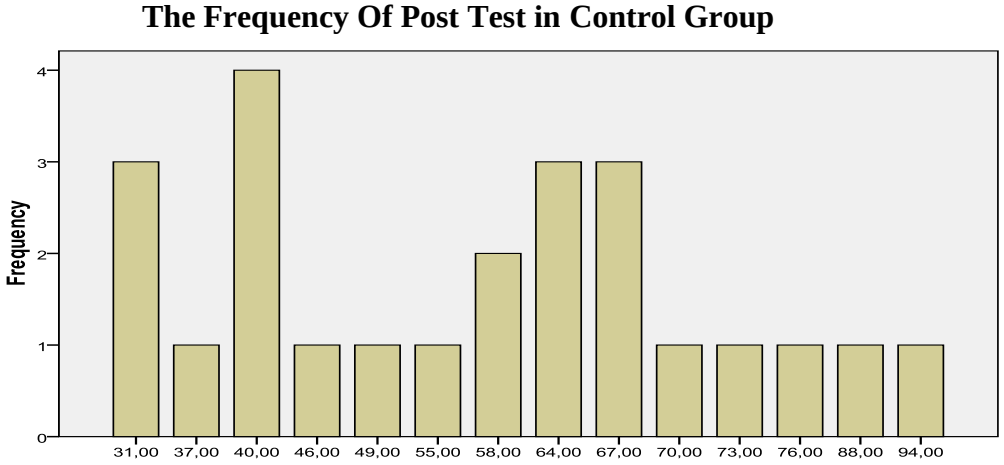
The writer also calculated the data calculation of post-test score of experimental group using SPSS 17.0 program. The result of statistic table is as follows:

Table 4.19 The Frequency Distribution of the Post Test Scores of the Control Group Using SPSS 17.0 Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	31.00	3	12,5	12,5	12,5
	37.00	1	4,2	4,2	16,7
	40.00	4	16,7	16,7	33,3
	46.00	1	4,2	4,2	37,5
	49.00	1	4,2	4,2	41,7
	55.00	1	4,2	4,2	45,8
	58.00	2	8,3	8,3	54,2
	64.00	3	12,5	12,5	66,7
	67.00	3	12,5	12,5	79,2
	70.00	1	4,2	4,2	83,3
	73.00	1	4,2	4,2	87,5
	76.00	1	4,2	4,2	91,7
	88.00	1	4,2	4,2	95,8

94.00	1	4,2	4,2	100,0
Total	24	100,0	100,0	

Figure 4.6. The Frequency Distribution of the Post test Score of the Control Group Using SPSS 17.0 Program



The table and figure above shows the result of post-test scorer achieved by the control group using SPSS Program. It could be seen that there were 3 students who got 31 (12.5%). One student got 37 (4.2%). Four students got 40 (16.7%). One student got 46 (4.2%). One student got 49 (4.2%). One student got 55 (4.2%). Two students got 58 (8.3%). Three students got 64 (12.5%). Three students got 67 (12.5%). One student got 70 (4.2%). One student got 73 (4.2%). One student got 76 (4.2%). One student got 88 (4.2%). And one student got 94 (4.2%).

The next step, the writer calculated the score of mean, median, mode, standard deviation, and standard error of mean of post-test score in experiment group as follows:

Table 4.20 The Table of Calculation of Mean, Median, Mode, Standard Deviation, and Standard Error of Mean of Post-test Score in Experiment Group Using SPSS 17.0 Program

N	Valid	24
	Missing	0
Mean		56,2500
Std. Error of Mean		3,64267
Median		58,0000
Mode		40,00
Std. Deviation		17,84535
Variance		318,457
Range		63,00
Minimum		31,00
Maximum		94,00
Sum		1350,00

The table shows the result of mean calculation was 56,2500, the result of median calculation was 58,0000, and the result of mode calculation was 40,00. The result of standard deviation calculation was 17,84535 and the result of standard error of mean calculation was 3,64267.

B. The Result of Data Analysis

1. Testing Hypothesis Using Manual Calculation

The writer chose the significance level on 5%, it means the significant level of refusal of null hypothesis on 5%. The writer decided the significance level at 5% due to the hypotheses type stated on non – directional (two – tailed test). It meant that the hypothesis can't direct the prediction of alternative hypothesis. Alternative hypothesis symbolized by "1". This symbol could not direct the

answer of hypothesis, "1" can be (>) or (<). The answer of hypothesis could not be predicted whether on more than or less than.

To test the hypothesis of the study, the writer used t-test statistical calculation. Firstly, the writer calculated the standard deviation and the standard error of X_1 and X_2. It was found the standard deviation and the standard error of post test of X_1 and X_2 at the previous data presentation. It could be seen on this following table.

Table 4.21 The Standard Deviation and the Standard Error of X_1 and X_2

Variable	The Standard Deviation	The Standard Error
X_1	11,00379	2,07952
X_2	17,84535	3,64267

Where:

X_1 = Pre test of experiment group

X_2 = Post test of experiment group

The table shows the result of the standard deviation calculation of X_1 was 11,00379 and the result of the standard error mean calculation was 2,07952. The result of the standard deviation calculation of X_2 was 17,84535 and the result of the standard error mean calculation was 3,64267.

The next step, the writer calculated the standard error of the differences mean between X_1 and X_2 as follows:

Standard Error of Mean of Score Difference between Variable I and Variable II

$$SE_{M1} - SE_{M2} = \sqrt{SE_{M1}{}^2 - SE_{M2}{}^2}$$

$$SE_{M1} - SE_{M2} = \sqrt{2{,}07952^2 - 3{,}64267^2}$$

$$SE_{M1} - SE_{M2} = \sqrt{4.3244 - 13.269}$$

$$SE_{M1} - SE_{M2} = \sqrt{8.9446}$$

$$SE_{M1} - SE_{M2} = 2.99705$$

$$SE_{M1} - SE_{M2} = 2.997$$

The calculation above shows the standard error of the differences mean between X_1 and X_2 was 2.997. Then, it was inserted to the t_o formula to get the value of t observe as follows:

$$t_o = \frac{M_1 - M_2}{SE_{M1} - SE_{M2}}$$

$$t_o = \frac{79{,}7500 - 56{,}2500}{2.997}$$

$$t_o = \frac{23{,}5}{2.997}$$

$$t_o = 7.8411$$

With the criteria:

If t-test (t-observed) $\geq t_{table}$, it means Ha is accepted and Ho is rejected.

If t-test (t-observed) $< t_{table}$, it means Ha is rejected and Ho is accepted.

Then, the writer interpreted the result of t- test. Previously, the writer accounted the degree of freedom (df) with the formula:

$$df = (N_1 + N_2 - 2)$$
$$= (28 + 29 - 2)$$
$$= 55$$

t_{table} at df 58/60 at 5% significant level = 2.000

The writer chose the significance level on 5%, it means the significant level of refusal of null hypothesis on 5 %. The writer decided the significance level at 5% due to the hypothesis type stated on non – directional (two – tailed test). It

meant that the hypothesis can not direct the prediction of alternative hypothesis. Alternative hypothesis symbolized by ”1”. This symbol could not direct the answer of hypothesis, “1” can be (>) or (<). The answer of hypothesis could not be predicted whether on more than or less than

The calculation above shows the result of t-test calculation as in the table follows:

Table 4.22 The Result of T-test

Variable	t observe	t table		Df/db
		5%	1%	
X_1- X_2	10.883	2.000	2.660	55

Where:

X_1 = Pre Test

X_2 = Post Test

t observe = The calculated Value

t table = The distribution of t value

df/db = Degree of Freedom

Based on the result of hypothesis test calculation, it was found that the value of $t_{observed}$ was greater than the value of t_{able} at 1% and 5% significance level or 2.000 < 10.883 > 2.660. It meant H_a was accepted and H_o was rejected.

It could be interpreted based on the result of calculation that H_a stating that song gives effect on the students’ vocabulary score was accepted and H_o stating that song does not give effect on the students’ vocabulary score was rejected. It meant that teaching vocabulary using song gave significant effect on the students’

vocabulary score of the seventh grade students at *MTs Darul Amin* of Palangka Raya.

2. Testing Hypothesis Using SPSS Calculation

The writer also applied SPSS 17.0 program to calculate t test in testing hypothesis of the study. The result of the t test using SPSS 17.0 was used to support the manual calculation of the t test. The result of the t test using SPSS 17.0 program could be seen as follows:

Table 4.23 The Standard Deviation and the Standard Error of X_1 and X_2

Group Statistics

	VAR00001	N	Mean	Std. Deviation	Std. Error Mean
VAR00002	1.00	28	79,7500	11,00379	2,07952
	2.00	29	58,7241	18,29500	3,39730

The table shows the result of the standard deviation calculation of X_1 was 11,00379 and the result of the standard error mean calculation was 2,07952. The result of the standard deviation calculation of X_2 was 17,84535 and the standard error mean calculation was 3,64267.

Table 4.24 The Calculation of T-test Using SPSS 17.0

Table 4.24 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
VAR00002	Equal variances assumed	6,699	,012	5,235	55	,000	21,02586	4,01670	12,97621	29,07551
	Equal variances not assumed			5,279	46,189	,000	21,02586	3,98322	13,00894	29,04278

The table shows the result of t-test calculation using SPSS 17.0 program. Since the result of post-test between experiment and control group had difference score of variance, it meant the t-test calculation used at the equal variances not assumed. It found that the result of $t_{observed}$ was 5.279, the result of mean difference between experiment and control group was 21,02586, and the standard error difference between experiment and control group was 3,98322.

To examine the truth or the false of null hypothesis stating that song does not give effect on the students' vocabulary score, the result of t-test was interpreted on the result of degree of freedom to get the t_{able}. The result of degree of freedom (df) was 55, it found from the total number of the students in both

group minus 2. The following table was the result of $t_{observed}$ and t_{able} from 55 df at 5% and 1% significanc5e level.

Table 4.25 The Result of T-test Using SPSS 17.0

Variable	t observe	t table		Df/db
		5%	1%	
X_1- X_2	5,279	2.000	2.660	55

The interpretation of the result of t-test using SPSS 17.0 program, it was found the t observe was greater than the t table at 1 % and 5 % significance level or 2.000< 5,279>2.660. It meant H_a was accepted and H_o was rejected.

It could be interpreted based on the result of calculation that H_a stating that song gives effect on the students' vocabulary score was accepted and H_o stating that English song does not give effect on the students' vocabulary score was rejected. It meant that teaching vocabulary with English song gave significant effect on the students' vocabulary score of the seventh grade students at *MTs Darul Amin* of Palangka Raya.

3. Normality and Homogeneity test

Best on post test, the writer make a normality test and homogeneity test to analyzed whether both group with SPSS 17.0.

a. Normality Test

4.26 Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Control	28	93,3%	2	6,7%	30	100,0%
Experiment	28	93,3%	2	6,7%	30	100,0%

The table show the result of processing in the test is 93% is valid and for missing just 6,7%.

4.27 The Calculation of Tests of Normality Using SPSS 17.0

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Control	,125	28	.200*	,954	28	,247
Experiment	,132	28	.200*	,938	28	,099

The table shows the result of calculating of test of normality test, the significant of control group 0.247 and experiment group 0,099. So the test is normal because value of normality is p > 0,005 the test is normality.

b. Homogeneity Test

4.28 The Result of Test of Homogeneity of Variances Using SPSS 17.0

Experiment

Levene Statistic	df1	df2	Sig.
1.025	5	12	.446

The table shows the result of calculating of test of homogeny test significant of experiment group 0,0446. The test is homogeny because value of homogeny is p > 0,005 the test is homogeny.

C. Discussion

The result of the data analysis shows that English song gave significant effect on the students' English vocabulary at the seventh graders of MTs Darul Amin Palangka Raya. The result of post test be higher than the result of pre test after were taught using English song. It was also proved by the result of hypothesis test calculation; it was found that the value of $t_{observed}$ was greater than

the value of t_{able} at 1% and 5% significance level or 2.000 < 5.279 > 2.660. It meant H_a was accepted and H_o was rejected.

Furthermore, the result of t-test calculation using SPSS 17.0 also shows that using English song in taught English vocabulary gave significant effect on the students' English vocabulary score. It was proved by the mean score pre test of the students before were taught using English song got 45.17 and post test score of the students after were taught using English song got 73.833. It was also proved by the value of $t_{observe}$ was greater than the value of t_{table} both at 1% and 5% significance level or 2.021< 5.279 >2.704. It meant H_a was accepted and H_o was rejected.

The findings of the study based on the result of manual and SPSS 17.0 program calculation could be interpreted that the alternative hypothesis stating that teaching English vocabulary by using English song gives effect on the students' vocabulary score of the seventh graders of MTs Darul Amin Palangka Raya was.

The findings of the study verified the theories of English song as a beneficial and a good strategy for English vocabulary (Chapter II, pg.27). First of all, English song can increase the students' vocabulary score. It can be seen from the difference between students' score in the pretest and post test.

In this case, English song is one of suitable strategy for the students to help them in the process of English vocabulary with the goal of improving some aspects of skill, because the use of English song can motivating and challenging students to get involved and participate actively in the learning activities (Chapter

II, pg.26). It can be seen from the difference between students' number of producing English song in the pre-test and post-test.