CHAPTER IV

RESEARCH FINDINGS AND DISCUSSIONS

In this chapter, the writer presents the data which had been collected from the research in the field of study. The data are the result of pretest of experimental and control group, the result of posttest of experimental and control group, result of data analysis, and discussion.

A. The Result of Pretest Experimental Group and Control Group

1. Distribution of Pretest Scores of the Experimental Group

The test scores of experimental group are presented in the following table:

Table 2.1 The Description of Pre Test Scores of the Data Achieved by the Students in Experimental Group

Experiment			
Code	**Score**	**Correct answer**	**Predicate**
E-01	**70**	**14**	**Good**
E-02	**55**	**11**	**Fail**
E-03	**50**	**10**	**Fail**
E-04	**60**	**12**	**Enough**
E-05	**70**	**14**	**Good**
E-06	**65**	**13**	**Fail**
E-07	**50**	**10**	**Good**
E-08	**50**	**10**	**Good**
E-09	**65**	**13**	**Enough**
E-10	**65**	**13**	**Good**
E-11	**70**	**14**	**Enough**
E-12	**70**	**14**	**Good**
E-13	**60**	**12**	**Good**
E-14	**50**	**10**	**Fail**
E-15	**75**	**15**	**Good**
E-16	**55**	**11**	**Good**
E-17	**70**	**14**	**Good**

E-18	**50**	**10**	**Fail**
E-19	**50**	**10**	**Fail**
E-20	**65**	**13**	**Good**
E-21	**75**	**15**	**Good**
E-22	**75**	**15**	**Good**
E-23	**75**	**15**	**Good**
E-24	**70**	**14**	**Good**
E-25	**75**	**15**	**Good**
E-26	**55**	**11**	**Fail**
E-27	**75**	**15**	**Good**
E-28	**55**	**11**	**Fail**
E-29	**50**	**10**	**Fail**
E-30	**55**	**11**	**Fail**
E-31	**70**	**14**	**Good**
E-32	**65**	**13**	**Enough**
E-33	**55**	**11**	**Fail**
E-34	**65**	**13**	**Enough**
E-35	**55**	**11**	**Fail**
E-36	**65**	**13**	**Enough**
Total		**2250**	
Average		**62,5**	
Lowest score		**50**	
Highest score		**75**	

Based on the data above, it can be seen that the students' highest score on experimental class is 75 and the students' lowest score is 50. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follow:

The highest score (H) = 75

The lowest score (L) = 50

The range of score (R) = H-L+1

= 75 – 50 + 1

= 25 + 1 = 26

The Class Interval (K) = 1 + (3.3) x Log 36

= 1 + (3.3) x 1.5563

= 1 + 5.13579

= 6.13579

=6

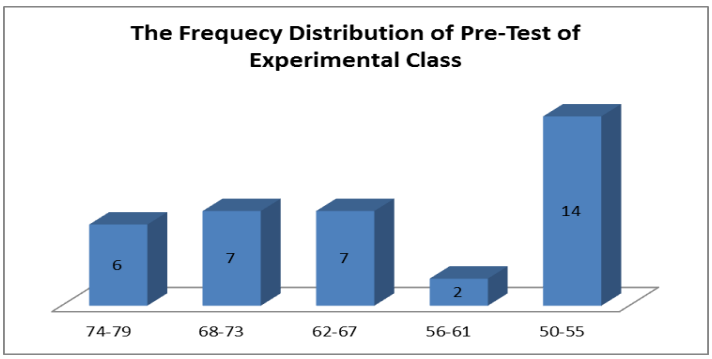
Interval of Temporary = R/K= 26/6 = 4,33 = 4

So, the range of score is 26, the class interval is 6, and interval of temporary is 4. It was presented using frequency distribution in the following table:

Table 2.2 Frequency Distribution of the Pre-Test Score of the Experimental Group

Class (k)	Interval (I)	Frequency (F)	Mid Point	The Limitation of Each Group	Frequency Relative (%)	Frequency Cumulative (%)
1	74-79	6	76.5	74.5 – 79.5	16.667	100.00
2	68-73	7	70.5	68.5 - 73.5	19.444	83.333
3	62-67	7	64.5	62.5 - 67.5	19.444	63.889
4	56-61	2	58.5	56.5 – 61.5	5.556	44.445
5	50-55	14	52.5	50.5 - 55.5	38.889	38.889
Total		∑F = 36			100,00	0

Figure 2.3 The Frequency Distribution of Pretest Score of the Experimental Group



It can be seen from the figure above, the students' pretest scores in experimental group. There are six students who got score 74-79. There are seven students who got score 68-73. There are seven students who got score 62-67. There are two students who got score 56-61. There are fourteen students who got score 50-55.

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

Table 2.3 The Table for Calculating Mean of Pretest score of the Experimental group

Interval (I)	Frequency (F)	Mid Point (x)	FX	X'	Fx'	Fkb	Fka
74-79	6	76.5	459	2	12	36	6
68-73	7	70.5	493.5	1	7	30	13
62-67	7	64.5	451.5	0	0	23	20
56-61	2	58.5	117	-2	-4	16	22
50-55	14	52.5	735	-1	-14	14	36
	∑F = 36		∑FX=2256		∑Fx'=1		

a. Mean

Mx $= \frac{\Sigma fx}{N}$

$= \frac{2256}{36}$

= 62,67

The calculation above shows that the mean value is 62,67.

The last step, the writer tabulated the scores of pre-test of experimental group into the table for the calculation for the calculation of standard deviation and the

standard error. The tabulation of the scores of pretest of pre-test of experimental group as follows:

Table 2.4 The Table for Calculating Standard deviation and Standard Error of the Pretest Score of Experimental group.

Interval (I)	Frequency (F)	Mid Point (x)	FX	X'	Fx'	X'2	Fx'2
74-79	6	76.5	459	2	12	4	24
68-73	7	70.5	493.5	1	7	1	7
62-67	7	64.5	451.5	0	0	0	0
56-61	2	58.5	117	-2	-4	4	8
50-55	14	52.5	735	-1	-14	1	14
	∑F = 36		∑FX=2256		∑Fx'=1		ΣFx'2=53

b. Standard Deviation

$$SD\ 1 = i\sqrt{\frac{\Sigma f_x{}'^2}{N} - \left(\frac{\Sigma Fx'}{N}\right)^2}$$

$$SD\ 1 = 6\sqrt{\frac{53}{36} - \left(\frac{1}{36}\right)^2}$$

$$SD\ 1 = 6\sqrt{1{,}472222 - \left(\frac{1}{1296}\right)}$$

$$SD\ 1 = 6\sqrt{1{,}472222 - 0{,}0007716}$$

$$SD\ 1 = 6\sqrt{1{,}4714504}$$

$SD\ 1 = 6$ x 1,21303355 = 7,2782013

c. Standard Error

$$SEm1 = \frac{SD\ 1}{\sqrt{N-1}}$$

$$SEm1 = \frac{7{,}2782013}{\sqrt{36-1}}$$

$$SEm1 = \frac{7{,}2782013}{\sqrt{35}}$$

$$SEm1 = \frac{7,2782013}{5.916} = 1,23025715$$

After calculating, it was found that the standard deviation and the standard error of pretest score were 7,2782013 and 1,23025715. The writer also calculated the data calculation of pre test score of experimental group using SPSS 21.0 program. The result of statistic table is as follow:

Table 2.5 The Table of Calculation of Mean, Median, Modus, Standard Deviation, Standard Error of Mean of Pre Test Score in Experimental Group Using SPSS 21.0 Program

Statistics

PRE TEST EXPERIMENT

N	Valid	36
	Missing	0
Mean		62.5000
Std. Error of Mean		1.51054
Median		65.0000
Mode		50.00[a]
Std. Deviation		9.06327
Variance		82.143
Skewness		-.076
Std. Error of Skewness		.393
Kurtosis		-1.455
Std. Error of Kurtosis		.768
Range		25.00
Minimum		50.00
Maximum		75.00
Sum		2250.00

The table shows the result of mean calculation is 62.5000. The result of standard deviation is 9.06327 and the standard error is 1.51054.

2. Distribution of Pre Test Scores of the Control Group

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

Tabel 2.6 The Description of Pre Test Scores of the Data Achieved by the Students in Control Group

Control			
Code	**Score**	**Correct answer**	**Predicate**
C-01	**60**	**12**	**Enough**
C-02	**70**	**14**	**Good**
C-03	**45**	**9**	**Fail**
C-04	**50**	**10**	**Fail**
C-05	**55**	**11**	**Fail**
C-06	**75**	**14**	**Good**
C-07	**45**	**9**	**Fail**
C-08	**75**	**15**	**Good**
C-09	**75**	**15**	**Good**
C-10	**60**	**12**	**Enough**
C-11	**45**	**9**	**Fail**
C-12	**70**	**14**	**Good**
C-13	**65**	**13**	**Enough**
C-14	**55**	**11**	**Fail**
C-15	**45**	**9**	**Fail**
C-16	**55**	**11**	**Fail**
C-17	**60**	**12**	**Enough**
C-18	**45**	**9**	**Fail**
C-19	**50**	**10**	**Fail**
C-20	**70**	**14**	**Good**
C-21	**70**	**14**	**Good**
C-22	**55**	**11**	**Fail**
C-23	**50**	**10**	**Fail**
C-24	**60**	**12**	**Enough**
C-25	**60**	**12**	**Enough**
C-26	**65**	**13**	**Enough**
C-27	**70**	**14**	**Good**
C-28	**55**	**10**	**Fail**
C-29	**60**	**12**	**Enough**
C-30	**55**	**11**	**Fail**
C-31	**55**	**11**	**Fail**

C-32	**70**	**14**	**Good**
C-33	**65**	**13**	**Enough**
C-34	**60**	**12**	**Enough**
C-35	**50**	**10**	**Fail**
C-36	**70**	**14**	**Good**
Total		**2140**	
Average		**59.44444444**	
Lowest score		**45**	
Higher score		**75**	

Based on the data above, it can be seen that the students' highest score is 75 and the student's lowest score is 45. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The Highest Score (H) = 75

The lowest Score (L) = 45

The Range of Score (R) = H-L+1

= 75 – 45 + 1

= 30+ 1 = 31

The Class Interval (K) =1+ (3.3) x Log 36

= 1+ (3.3) x 1.5563

= 1 + 5.13579

= 6.13579

=6

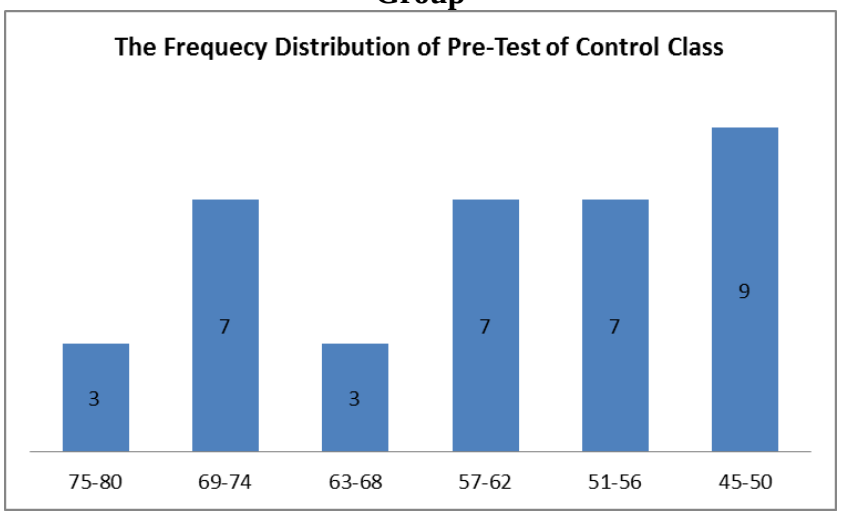
Interval of Temporary = R/K = 31/6 = 5,167 = 5

So, the range of score is 31, the class interval is 6, and interval of temporary is 5. It was presented using frequency distribution in the following:

Table 2.7 Frequency Distribution of the Pre Test Score of the Control Group

Class (k)	Interval (I)	Frequency (F)	Mid Point	The Limitation of Each Group	Frequency Relative (%)	Frequency Cumulative (%)
1	75-80	3	77.5	74.5 – 79.5	8.333	100.00
2	69-74	7	71.5	68.5 - 73.5	19.444	91.667
3	63-68	3	65.5	62.5 - 67.5	8.333	72.223
4	57-62	7	59.5	56.5 – 61.5	19.444	63.89
5	51-56	7	53.5	50.5 - 55.5	19.444	44.444
6	45-50	9	47.5	44.5 - 50.5	25	25
Total		∑F = 36			100,00	0

Figure 2.7 The Frequency Distribution of Pretest Score of the Control Group



It can be seen from the figure above, the students' pretest scores in control group. There are three students who got score 75-80. There are seven students who got score 69-74. There are three students who got score 63-68. There are seven students who got score 57-62. There are seven students who got score 51-56. There are nine students who got score 45-50.

The next step, the writer tabulated the scores into the table for the calculation of mean, median, modus as follow.

Table 2.8 The Table for Calculating Mean of Pre test Score of the Control Group

Interval (I)	Frequency (F)	Mid Point (x)	FX	X'	Fx'	Fkb	Fka
75-80	3	77.5	232.5	3	9	36	3
69-74	7	71.5	500.5	2	14	33	10
63-68	3	65.5	196.5	1	3	26	13
57-62	7	59.5	416.5	0	0	23	20
51-56	7	53.5	374.5	-1	-7	16	27
45-50	9	47.5	427.5	-2	-18	9	36
	ΣF=36		∑FX=2148		ΣFx'=1		

a. Mean

Mx $= \frac{\Sigma fx}{N}$

$= \frac{2148}{36}$

= 59,667

The calculation above showed that the mean value is 59,667.

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

Table 2.9 The Table for Calculating Standard deviation and Standard Error of the Pretest Score of Control group

Interval (I)	Frequency (F)	Mid-Point(x)	FX	X'	Fx'	X'2	Fx'2

75-80	**3**	**77.5**	**232.5**	**3**	**9**	**9**	**27**
69-74	**7**	**71.5**	**500.5**	**2**	**14**	**4**	**28**
63-68	**3**	**65.5**	**196.5**	**1**	**3**	**1**	**3**
57-62	**7**	**59.5**	**416.5**	**0**	**0**	**0**	**0**
51-56	**7**	**53.5**	**374.5**	**-1**	**-7**	**7**	**49**
45-50	**9**	**47.5**	**427.5**	**-2**	**-18**	**4**	**72**
	ΣF=36		**∑FX=2148**		**ΣFx'=-1**		**ΣFx'^{2}=179**

a. Standard Deviation

$$SD\ 1 = i\sqrt{\frac{\Sigma f_x{'^2}}{N} - \left(\frac{\Sigma Fx'}{N}\right)^2}$$

$$SD\ 1 = 6\sqrt{\frac{179}{36} - \left(\frac{1}{36}\right)^2}$$

$$SD\ 1 = 6\sqrt{4{,}972222 - \frac{1}{1296}}$$

$$SD\ 1 = 6\sqrt{4.972222 - 0.0007716}$$

$$SD\ 1 = 6\sqrt{4.9714504}$$

$SD\ 1 = 6$ x 2,22967495 = 13,3780497

b. Standard Error

$$SEm1 = \frac{SD\ 1}{\sqrt{N-1}}$$

$$SEm1 = \frac{13{,}3780497}{\sqrt{36-1}}$$

$$SEm1 = \frac{13{,}3780497}{\sqrt{35}}$$

$$SEm1 = \frac{13{,}3780497}{5.91607978} = 2{,}2610287105$$

After calculating, it was found that the standard deviation and the standard error of pretest score were 13,3780497 and 2,2610287105. The writer also

calculated the data calculation of pre-test score of control group using SPSS 21.0 program. The result of statistic table is as follow:

Table 2.10 The Table of Calculation of Mean, Median, Mode, Standard Deviation, and Standard Error of Mean of Pre Test Score of Control Group Using SPSS 21.0 Program

Statistics

PRE TEST CONTROL

N	Valid	36
	Missing	0
Mean		59.4444
Std. Error of Mean		1.57835
Median		60.0000
Mode		55.00[a]
Std. Deviation		9.47009
Variance		89.683
Skewness		.035
Std. Error of Skewness		.393
Kurtosis		-1.092
Std. Error of Kurtosis		.768
Range		30.00
Minimum		45.00
Maximum		75.00
Sum		2140.00

The table shows the result of mean calculation is 59.4444. The result of standard deviation is 9.47009 and the standard error is 1.57835.

The writer also calculated the normality and homogenity of pre test using SPSS 21.0 program as follows:

2.11 Table of Normality and Homogenity Using SPSS 21.0 Program

One-Sample Kolmogorov-Smirnov Test

		Experiment	Control
N		36	36
Normal Parameters[a,b]	Mean	62.5000	59.4444

		Std. Deviation	9.06327	9.47009
Most Differences	Extreme	Absolute	.185	.145
		Positive	.185	.125
		Negative	-.164	-.145
Kolmogorov-Smirnov Z			1.109	.872
Asymp. Sig. (2-tailed)			.170	.433

a. Test distribution is Normal.
b. Calculated from data.

Test of Homogeneity of Variances

score

Levene Statistic	df1	df2	Sig.
.040	1	70	.842

B. The Result of Post-Test Experimental and Control Group

1. Distribution of Post Test Scores of the Experimental Group

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

Table 2.12 The Distribution of Post Test Scores of the Data achieved by the Students in Experimental group

Experiment			
Code	**Score**	**Correct answer**	**Predicate**
E-01	**85**	**17**	**FAIRLY GOOD**
E-02	**60**	**12**	**ENOUGH**
E-03	**55**	**11**	**ENOUGH**
E-04	**65**	**13**	**GOOD**
E-05	**75**	**15**	**ENOUGH**
E-06	**70**	**14**	**ENOUGH**
E-07	**60**	**12**	**ENOUGH**
E-08	**55**	**11**	**FAIL**
E-09	**75**	**15**	**GOOD**
E-10	**70**	**14**	**GOOD**
E-11	**80**	**16**	**ENOUGH**
E-12	**70**	**14**	**GOOD**
E-13	**70**	**14**	**FAIRLY GOOD**
E-14	**60**	**12**	**GOOD**
E-15	**85**	**17**	**FAIRLY GOOD**
E-16	**60**	**12**	**ENOUGH**
E-17	**75**	**14**	**GOOD**
E-18	**55**	**11**	**FAIL**
E-19	**55**	**11**	**FAIL**
E-20	**70**	**14**	**GOOD**
E-21	**80**	**16**	**FAIRLY GOOD**
E-22	**85**	**17**	**FAIRLY GOOD**
E-23	**85**	**17**	**FAIRLY GOOD**
E-24	**75**	**15**	**GOOD**
E-25	**80**	**16**	**FAIRLY GOOD**
E-26	**65**	**13**	**ENOUGH**
E-27	**80**	**16**	**FAIRLY GOOD**
E-28	**70**	**14**	**GOOD**
E-29	**65**	**13**	**ENOUGH**
E-30	**65**	**13**	**ENOUGH**
E-31	**85**	**17**	**FAIRLY GOOD**
E-32	**70**	**14**	**GOOD**
E-33	**60**	**12**	**ENOUGH**
E-34	**75**	**14**	**GOOD**

E-35	**60**	**12**	**ENOUGH**
E-36	**70**	**14**	**GOOD**
Total		**2520**	
Average		**70**	
Lowest score		**55**	
Higher score		**85**	

Based on the data above, it can be seen that the students' highest score was 85 and the student's lowest score is 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) = 85

The lowest Score (L) = 55

The Range of Score (R) = H-L+1

= 85-55+1

= 30+ 1 = 31

The Class Interval (K) =1+ (3.3) x Log 36

= 1+ (3.3) x 1.5563

= 1 + 5.13579

= 6.13579

=6

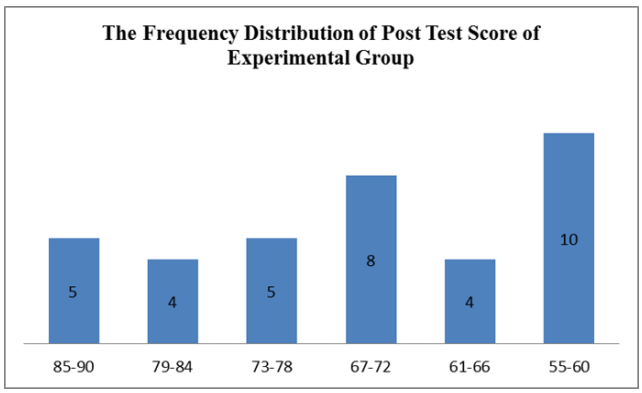
Interval of Temporary = R/K = 31/6 = 5,16666667 = 6

So, the range of score was 41, the class interval was 6, and interval of temporary was 6. It was presented using frequency distribution in the following:

Table 2.13 The Frequency Distribution of the Post Test Score of the Experimental Group

Class (k)	Interval (I)	Frequency (F)	Mid Point	The Limitation of Each Group	Frequency Relative (%)	Frequency Cumulative (%)
1	85-90	5	87,5	84.5-90.5	13.889	100
2	79-84	4	81,5	78.5 – 84.5	11.111	86.111
3	73-78	5	75,5	72.5 – 78.5	13.889	75
4	67-72	8	69,5	66.5 – 72.5	22.222	61.111
5	61-66	4	63,5	60.5-66.5	11.111	38.889
6	55-60	10	57,5	54.5-61.5	27.778	27.778
Total		∑F = 36			100	0

Figure 2.14 The Frequency Distribution of Post test Score of the Experimental Group



It can be seen from the figure above, the students' post test score in experimental group. There are five students who got score 85-90. There are four students who got 79-84. There are five students who got 73-78. There are eight students who got score 67-72. There are four students who got 61-66. There are ten students who got score 55-60.

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

Table 2.14 The Table for Calculating Mean of Post Test Score of the Experimental Group

Interval (I)	Frequency (F)	Mid Point (x)	FX	X'	Fx'	Fkb	Fka
85-90	5	87,5	437.5	3	15	36	5
79-84	4	81,5	326	2	8	31	9
73-78	5	75,5	377.5	1	5	27	14
67-72	8	69,5	556	0	0	22	22
61-66	4	63,5	254	-1	-4	14	26
55-60	10	57,5	575	-2	-20	10	36
Total	∑F = 36		∑FX=2526		ΣFx'=4		

a. Mean

$$Mx = \frac{\Sigma fx}{N}$$

$$= \frac{2526}{36}$$

$$= 70,1666667$$

The calculation above showed the mean value: 70,1666667.

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

Table 2.15 The Table for Calculating Standard Deviation and Standard Error of the Post Test Score of Experimental Group

Interval (I)	Frequency (F)	Mid-Point(x)	FX	X'	Fx'	X'^2	Fx'^2
85-90	5	87,5	437.5	3	15	9	45
79-84	4	81,5	326	2	8	4	16
73-78	5	75,5	377.5	1	5	1	5
67-72	8	69,5	556	0	0	0	0
61-66	4	63,5	254	-1	-4	1	4
55-60	10	57,5	575	-2	-20	4	40
Total	∑F = 36		∑FX=2526		ΣFx'=4		$\Sigma Fx'^2$=110

a. Standard Deviation

$$SD\ 1 = i\sqrt{\frac{\Sigma f_x{}'^2}{N} - \left(\frac{\Sigma Fx'}{N}\right)^2}$$

$$SD\ 1 = 6\sqrt{\frac{110}{36} - \left(\frac{4}{36}\right)^2}$$

$$SD\ 1 = 6\sqrt{3{,}055556 - \left(\frac{16}{1296}\right)}$$

$$SD\ 1 = 6\sqrt{3{,}055556 - 0{,}012345679}$$

$$SD\ 1 = 6\sqrt{3{,}0432103211}$$

$SD\ 1 = 6$ x 1,74447996= 10,4668798

b. Standard Error

$$SEm1 = \frac{SD\ 1}{\sqrt{N-1}}$$

$$SEm1 = \frac{10{,}4668798}{\sqrt{36-1}}$$

$$SEm1 = \frac{10{,}4668798}{\sqrt{35}}$$

$$SEm1 = \frac{10{,}4668798}{5{,}91607978} = 1{,}7692256$$

The result of calculation showed that the standard deviation of post test score of experimental group was 10,4668798 and the standard error of post test score of experimental group was 1,7692256.

Table 2.16 The Table of Calculation of Mean, Median, Mode, Standard Deviation, and Standard Error of Mean of Post Test Score of Experiment Group Using SPSS 21.0 Program

Statistics

POST TEST EXPERIMENT

N	Valid	36
	Missing	0
Mean		70.0000
Std. Error of Mean		1.60604
Median		70.0000
Mode		70.00
Std. Deviation		9.63624
Variance		92.857
Skewness		.051
Std. Error of Skewness		.393
Kurtosis		-1.068
Std. Error of Kurtosis		.768
Range		30.00
Minimum		55.00
Maximum		85.00
Sum		2520.00

The table shows the result of mean calculation is 70.0000. The result of standard deviation is 9.63624 and the standard error is 1.60604.

2. Distribution of Post Test Scores of the Control Group

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

Tabel 2.17 The Description of Post Test Scores of the Data Achieved by the Students in Control Group

Control			
Code	**Score**	**Correct answer**	**Predicate**
C-01	**65**	**13**	**ENOUGH**
C-02	**80**	**14**	**FAIRLY GOOD**
C-03	**50**	**10**	**FAIL**
C-04	**50**	**10**	**FAIL**
C-05	**55**	**14**	**FAIL**
C-06	**85**	**11**	**FAIRLY GOOD**
C-07	**50**	**9**	**FAIL**
C-08	**85**	**13**	**FAIRLY GOOD**
C-09	**80**	**11**	**FAIRLY GOOD**
C-10	**65**	**12**	**ENOUGH**
C-11	**55**	**12**	**FAIL**
C-12	**85**	**16**	**FAIRLY GOOD**
C-13	**70**	**15**	**GOOD**
C-14	**60**	**13**	**ENOUGH**
C-15	**50**	**12**	**FAIL**
C-16	**60**	**14**	**ENOUGH**
C-17	**65**	**14**	**ENOUGH**
C-18	**50**	**13**	**FAIL**
C-19	**55**	**15**	**FAIL**
C-20	**75**	**13**	**GOOD**
C-21	**80**	**11**	**FAIRLY GOOD**
C-22	**60**	**12**	**ENOUGH**
C-23	**60**	**12**	**ENOUGH**
C-24	**70**	**14**	**GOOD**
C-25	**65**	**15**	**ENOUGH**
C-26	**75**	**12**	**GOOD**
C-27	**75**	**10**	**GOOD**
C-28	**65**	**8**	**ENOUGH**
C-29	**70**	**14**	**GOOD**
C-30	**65**	**10**	**ENOUGH**
C-31	**60**	**12**	**ENOUGH**
C-32	**80**	**16**	**FAIRLY GOOD**
C-33	**70**	**14**	**GOOD**

C-34	**70**	**14**	**GOOD**
C-35	**55**	**11**	**FAIL**
C-36	**75**	**15**	**GOOD**
Total		**2385**	
Average		**66.25**	
Lowest score		**50**	
Higher score		**85**	

Based on the data above, it can be seen that the students' highest score is 85 and the student's lowest score is 50. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The Highest Score (H) = 85

The lowest Score (L) = 50

The Range of Score (R) = H-L+1

= 85-50+1

= 35+ 1 = 36

The Class Interval (K) =1+ (3.3) x Log 36

= 1+ (3.3) x 1.5563

= 1 + 5.13579

= 6.13579

=6

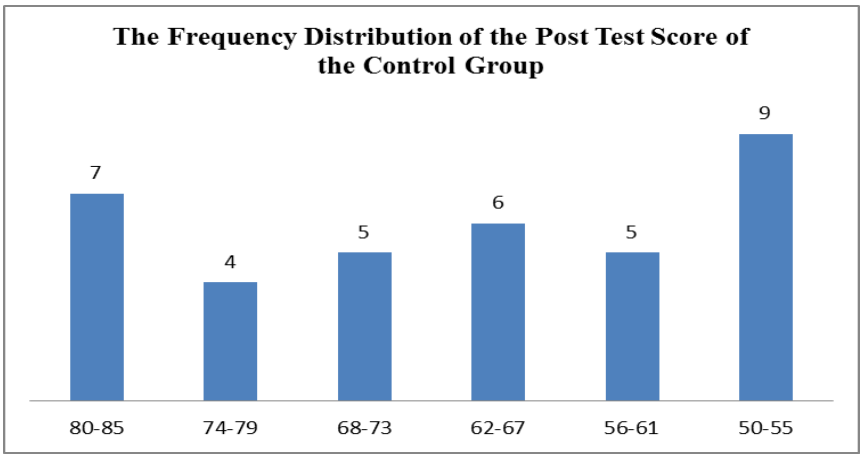
Interval of Temporary = R/K = 36/6 = 6

So, the range of score is 36, the class interval is 6, and interval of temporary is 6. It was presented using frequency distribution in the following:

Table 2.18 The Frequency Distribution of the Post Test Score of the Control Group

Class (k)	Interval (I)	Frequency (F)	Mid Point	The Limitation of Each Group	Frequency Relative (%)	Frequency Cumulative (%)
1	80-85	7	82,5	79.5 – 85.5	33,3	100
2	74-79	4	76,5	73.5 – 79.5	13,9	66,7
3	68-73	5	70,5	67.5 – 63.5	19,4	52,8
4	62-67	6	64,5	61.5-67.5	11,1	33,4
5	56-61	5	58,5	55.5-61.5	11,1	22, 3
6	50-55	9	52,5	49.5-45.5	11,1	11,1
Total		∑F = 36			100	0

Figure 2.18 The Frequency Distribution of Post-test of the Control Group



It can be seen from the figure above, the students' post test score in control group. There are seven students who got 80-85. There are four students who got score 74-79. There are five students who got score 68-3. There are six students who got 62-67. There are five students who got 56-61. There are nine students who got score 50-55.

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

Table 2.19 The Table for Calculating Mean of Post Test Score of the Control Group

Interval (I)	Frequency (F)	Mid Point (x)	FX	X'	Fx'	Fkb	Fka
80-85	7	82,5	557.5	3	21	36	7
74-79	4	76,5	306	2	8	29	11
68-73	5	70,5	352.5	1	5	25	16
62-67	6	64,5	387	0	0	20	22
56-61	5	58,5	292.5	-1	-5	14	27
50-55	9	52,5	472.5	-2	-18	9	36
	∑F = 36		∑FX=2368		ΣFx'=11		

a. Mean

Mx $= \frac{\Sigma fx}{N}$

$= \frac{2368}{36}$

= 65, 778

The calculation above showed that the mean value is 65, 778.

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

Table 2.20 The Table for Calculating Standard Deviation and Standard Error of Post Test of Control Group

Interval (I)	Frequency (F)	Mid-Point(x)	FX	X'	Fx'	X'2	Fx'2
80-85	7	82,5	557.5	3	21	9	63
74-79	4	76,5	306	2	8	4	16
68-73	5	70,5	352.5	1	5	1	5
62-67	6	64,5	387	0	0	0	0
56-61	5	58,5	292.5	-1	-5	1	5
50-55	9	52,5	472.5	-2	-18	4	36
	∑F = 36		∑FX=2368		ΣFx'=11		ΣFx'^2=125

c. Standard Deviation

$$SD\ 1 = i\sqrt{\frac{\Sigma f_x{}'^2}{N} - \left(\frac{\Sigma Fx'}{N}\right)^2}$$

$$SD\ 1 = 6\sqrt{\frac{125}{36} - \left(\frac{11}{36}\right)^2}$$

$$SD\ 1 = 6\sqrt{3{,}4722222222 - \left(\frac{121}{1296}\right)}$$

$$SD\ 1 = 6\sqrt{3{,}4722222222 - 0{,}0933641975}$$

$$SD\ 1 = 6\sqrt{3{,}3788580247}$$

$SD\ 1 = 6$ x 1, 83816703= 11,0290022

d. Standard Error

$$SEm1 = \frac{SD\ 1}{\sqrt{N-1}}$$

$$SEm1 = \frac{11{,}0290022}{\sqrt{36-1}}$$

$$SEm1 = \frac{11{,}0290022}{\sqrt{35}}$$

$$SEm1 = \frac{11{,}0290022}{5{,}91607978} = 1{,}86424163$$

The result of calculation showed that the standard deviation of post test score of control group was 11,0290022 and the standard error of post test score of control group was 1,86424163. The writer also calculated the data calculation of pretest score of control group using SPSS 21.0 program. The result of Statistic table is as follows:

Table 2.21 The Table of Calculation of Mean, Median, Mode, Standard Deviation, and Standard Error of Mean of Post Test Score of Control Group Using SPSS 21.0 Program

Statistics

POST TEST CONTROL

N	Valid	36
	Missing	0
Mean		66.2500
Std. Error of Mean		1.82981
Median		65.0000
Mode		65.00
Std. Deviation		10.97888
Variance		120.536
Skewness		.108
Std. Error of Skewness		.393
Kurtosis		-1.038
Std. Error of Kurtosis		.768
Range		35.00
Minimum		50.00
Maximum		85.00
Sum		2385.00

The table shows the result of mean calculation is 66.2500. The result of standard deviation is 10.97888 and the standard error is 1.82981.

Control						Experimental			
No	**Code**	**X1**	**X2**	**X2-X1**	**No**	**Code**	**X1**	**X2**	**X2-X1**
1	**C-01**	**60**	**65**	**5**	**1**	**E-01**	**70**	**85**	**15**
2	**C-02**	**70**	**80**	**10**	**2**	**E-02**	**55**	**60**	**5**
3	**C-03**	**45**	**50**	**5**	**3**	**E-03**	**50**	**55**	**5**
4	**C-04**	**50**	**50**	**0**	**4**	**E-04**	**60**	**65**	**5**
5	**C-05**	**55**	**55**	**0**	**5**	**E-05**	**70**	**75**	**5**
6	**C-06**	**75**	**85**	**10**	**6**	**E-06**	**65**	**70**	**5**
7	**C-07**	**45**	**50**	**5**	**7**	**E-07**	**50**	**60**	**10**
8	**C-08**	**75**	**85**	**10**	**8**	**E-08**	**50**	**55**	**5**
9	**C-09**	**75**	**80**	**5**	**9**	**E-09**	**65**	**75**	**10**
10	**C-10**	**60**	**65**	**5**	**10**	**E-10**	**65**	**70**	**5**
11	**C-11**	**45**	**55**	**10**	**11**	**E-11**	**70**	**80**	**10**
12	**C-12**	**70**	**85**	**15**	**12**	**E-12**	**70**	**70**	**0**
13	**C-13**	**65**	**70**	**5**	**13**	**E-13**	**60**	**70**	**10**
14	**C-14**	**55**	**60**	**5**	**14**	**E-14**	**50**	**60**	**10**
15	**C-15**	**45**	**50**	**5**	**15**	**E-15**	**75**	**85**	**10**
16	**C-16**	**55**	**60**	**5**	**16**	**E-16**	**55**	**60**	**5**
17	**C-17**	**60**	**65**	**5**	**17**	**E-17**	**70**	**75**	**5**
18	**C-18**	**45**	**50**	**5**	**18**	**E-18**	**50**	**55**	**5**
19	**C-19**	**50**	**55**	**5**	**19**	**E-19**	**50**	**55**	**5**

20	**C-20**	**70**	**75**	**5**	**20**	**E-20**	**65**	**70**	**5**
21	**C-21**	**70**	**80**	**10**	**21**	**E-21**	**75**	**80**	**5**
22	**C-22**	**55**	**60**	**5**	**22**	**E-22**	**75**	**85**	**10**
23	**C-23**	**50**	**60**	**10**	**23**	**E-23**	**75**	**85**	**10**
24	**C-24**	**60**	**70**	**10**	**24**	**E-24**	**70**	**75**	**5**
25	**C-25**	**60**	**65**	**5**	**25**	**E-25**	**75**	**80**	**5**
26	**C-26**	**65**	**75**	**10**	**26**	**E-26**	**55**	**65**	**10**
27	**C-27**	**70**	**75**	**5**	**27**	**E-27**	**75**	**80**	**5**
28	**C-28**	**55**	**65**	**10**	**28**	**E-28**	**55**	**70**	**15**
29	**C-29**	**60**	**70**	**10**	**29**	**E-29**	**50**	**65**	**15**
30	**C-30**	**55**	**65**	**10**	**30**	**E-30**	**55**	**65**	**10**
31	**C-31**	**55**	**60**	**5**	**31**	**E-31**	**70**	**85**	**15**
32	**C-32**	**70**	**80**	**10**	**32**	**E-32**	**65**	**70**	**5**
33	**C-33**	**65**	**70**	**5**	**33**	**E-33**	**55**	**60**	**5**
34	**C-34**	**60**	**70**	**10**	**34**	**E-34**	**65**	**75**	**10**
35	**C-35**	**50**	**55**	**5**	**35**	**E-35**	**55**	**60**	**5**
36	**C-36**	**70**	**75**	**5**	**36**	**E-36**	**65**	**70**	**5**
	Mean	**59,667**	**65,778**			**Mean**	**62,67**	**70,167**	

The writer also calculated the normality and homogenity of post test using SPSS 21.0 program as follows

2.22 Table of Normality and Homogenity Using SPSS 21.0 Program

One-Sample Kolmogorov-Smirnov Test

		Experiment	Control
N		36	36
Normal Parameters[a,b]	Mean	70.0000	66.2500
	Std. Deviation	9.63624	10.97888
Most Extreme Differences	Absolute	.128	.104
	Positive	.128	.104
	Negative	-.111	-.093
Kolmogorov-Smirnov Z		.769	.626
Asymp. Sig. (2-tailed)		.596	.828

a. Test distribution is Normal.
b. Calculated from data.

Test of Homogeneity of Variances

Score

Levene Statistic	df1	df2	Sig.
1.073	1	70	.304

C. Result of Data Analysis

1. Testing Hypothesis Using Manual Calculation

The writer chose the significance level on 5%, it means the significance 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 cannot direct the prediction of alternative Hypothesis.

To test the hypothesis of the study, the writer used t-test statistical calculation. Firstly, the writer calculated the standard deviation and the 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 2.23 The Standard Deviation and Standard Error of X_1 and X_2

Variable	The Standard Deviation	The Standard Error
X_1	10,4668798	1,7692256
X_2	11,0290022	1,86424163

Where :

X_1 = Experimental group

X_2 = Control group

The table showed the result of the standard deviation calculation of X_1 was 10,4668798 and the result of the standard error mean calculation was 1,7692256. The result of the standard deviation calculation of X_2 was 11,0290022 and the result of the standard error mean calculation was 1,86424163.

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:

SEM1 – SEM2 $= \sqrt{SEm1^2 + SEm2^2}$

SEM1 – SEM2 $= \sqrt{1{,}7692256^2 + 1{,}86424163^2}$

SEM1 – SEM2 $= \sqrt{3{,}13015922 + 3{,}47539686}$

SEM1 – SEM2 $= \sqrt{6{,}60555608}$

SEM1 – SEM2 = 2,57012764

The calculation above showed the standard error of the differences mean between X_1 and X_2 was 2,57012764. Then, it was inserted to the t_o formula to get the value of t observe as follows:

$t_o = \frac{M1 - M2}{SEm1 - SEm2}$

$t_o = \frac{70{,}17 - 62{,}67}{2{,}57012764}$

$t_o = \frac{7{,}50}{2{,}57012764}$

t_o = 2,91697575 = 2,918

with the criteria:

If t-test (t-observed) ≥ t-table, Ha is accepted and Ho is rejected.

If t-test (t-observed) < t-table, 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 = $(N_1 + N_2) - 2$

= (36+36)-2 = 70

T_{table} at df 70/60 at 5% significant level = 2.000

The writer chose the significant levels 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 typed stated on non-directional (two-tailed test). It meant that the hypothesis can not direct the prediction of alternative hypothesis.

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

Table 2.24 The Result of T-Test

Variable	**T Observed**	**T Table**	**Df/db**
		5%	
$X_1 - X_2$	**2,918**	**2,000**	**70**

Where:

X_1 = Experimental Group

X_2 = Control Group

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 tobserved was greater than the value of ttable at significance level or 2,000 < 2,916. It meant Ha was accepted and Ho was rejected.

It could be interpreted based on the result of calculation that Ha stating that using of Cartoon Movie increases the eight-graders students' ability in constructing simple present tense at SMPN 3 Palangka Raya was accepted and Ho stating that using Cartoon Movie does not increase the eight-graders students'

ability in constructing simple present tense at SMPN 3 Palangka Raya was rejected.

2. Testing Hypothesis Using SPSS 21.0 Program

The writer also applied SPSS 21.0 program to calculate t test in testing hypothesis of the study. The result of t test using SPSS 21.0 was used to support the manual calcution of the t test. The result of the t test using SPSS 21.0 program could be seen as follows:

Table 2.25 The Standard Deviation and the Standard Error of X_1 and X_2

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Score	1.00	36	70.0000	9.63624	1.60604
	2.00	36	66.2500	10.97888	1.82981

The table showed the result of the standard deviation calcution of X1 was 9.63624 and the result of the standard error mean calculation was 1.60604. The result of the standard deviation calculation of X2 was 10.97888 and the standard error mean calculation was 1.82981.

Table 2.26 The Calculation T-test Using SPSS 21.0 Independent Sample Test

The table shows the result of t test calculation using SPSS 21.0 program.

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
Score	Equal variances assumed	1.073	.304	2.540	70	.128	3.75000	2.43466	-1.10578	8.60578
	Equal variances not assumed			2.540	68.842	.128	3.75000	2.43466	-1.10722	8.60722

Since the result of post-test between experiment and control group had difference score of variance, it found that the result of Tobserved was 2.540, the result of mean difference between experiment and control group was 3.75000.

To examine the truth or the false of null hypothesis stating that using Cartoon Movie does not increses the eight grade students' ability in constructing simple present tense, the result of post test was interpreted on the result of degree of freedom to get the t_{table}. The result of degree of freedom (df) was 70. The following table was the result of $t_{observed}$ and t_{table} from 70 at 5% significance level.

Table 2.27 The Result of T-observed and T-table / T-test

Variable	**T Observed**	**T Table**	**T Table**	**Df/db**
		1%	**5%**	
$X_1 - X_2$	**2.540**	**2,660**	**2,000**	**70**

The interpretation of the result of t-test using SPSS 21.0 program, it was found the t observe was greater than the t table at 5% significances level or 2,000<2.540. It could be interpreted based on the result of calculation that Ha stating that Cartoon

Movie increases the students' writing ability on simple present tense was accepted and Ho stating that Cartoon Movie does not increases the students' ability in constructing simple present tense was rejected. It meant that teaching using Cartoon Movie increases the eighth graders ability in constructing simple present tense at SMPN 3 Palangka Raya.

Table 2.28 The Comparison Mean of Pre Test and Post Test Score Achieved by the Students in Experiment and Control Group.

- Experiment	
Variable	**Mean difference**
X2 –X1	
70,17- 62,67	**7,50**
- Control	
Variable	**Mean difference**
X2 –X1	
65, 78- 59,44	**6,34**

Where : X1 = pre test

X2 = post test

From the table above it can be seen that there is significant difference of mean score of pre-test – post-test at experimental group where pre-test mean score is 62,67 and post-test mean score is 70,17.

D. Discussion

The result of the data analysis showed that the Cartoon Movie gave significance effect on the students' ability in constructing simple present tense for the eight-grade students at SMPN 3 Palangka Raya. The students who were taught using Cartoon Movie got higher score than students who were taught without using Cartoon Movie. It was proved by the mean score of the students who were taught using Cartoon Movie was 70,17 and the students who were taught without using Cartoon Movie was 65, 78. Based on the result of hypothesis test

calculation, it was found that the value of Tobserved was greater than the value of Ttable at 5% significance level or 2,000 < 2,918 . It meant Ha was accepted and Ho was rejected.

Furthermore, the result of t test calculation using SPSS 21.0 found that the Cartoon Movie gave significance effect on the students' English score. It proved by the value df Tobserved was greater than Ttable at 5% significance level or 2,000<2,540.

The finding of the study interpreted that the alternative hypothesis stating that Cartoon Movie increases the students' English score for the eighth graders at SMPN 3 Palangka Raya was accepted and the null hypothesis stating that Cartoon Movie does not increases the students' English scores for the eighth graders at SMPN 3 Palangka Raya was rejected.

Based on the results finding of the study, it was shown that Cartoon Movie gives beneficial contribution in increasing the students' ability during the instructional process. From the research finding, it can be concluded that using Cartoon Movie can motivate students to engage in language learning. (Chapter II pg.16) Harmer states that Movie is visual aids that can be used in writing class. It makes lessons more fun. It can also be used to create situation for writing classes more clearly, that the students have big enthusiasm in teaching learning process in writing class.

There was some possible reason why Cartoon Movie was effective in teaching writing at the eight-grade students of SMPN 3 Palangka Raya. The first reason was when the writer taught English using Cartoon Movie, indirectly gave

the students some daily activity practice. The second reason was when the writer taught English using Cartoon Movie, the students gave their attention to the media played. The third reason was when teaching English the writer taught English using Cartoon Movie based on their learning material which suitable with their environment or contextual learning. It made students could comprehend the material easier.

These finding were suitable with the theories as stated in chapter II pg.16. The first, Cartoon Movie can be very interesting media for learners. When the students interest with their class they would be motivated to learn.

The second, Cartoon Movie showed daily activity practice that could help students to express their daily activities.

Based on statement above Cartoon Movie was appropriate because the Cartoon Movie showed daily activity practice, made the students more enthusiasm when learned English and gave teacher new media to teach English.