

CHAPTER IV

RESULT OF THE STUDY

In this chapter, the writer presented the data which had been collected from the research in the field of study. The data are the result of pre test score in essay test of experimental class, the result of pre-test score in multiple choices test of experimental class, the result of post test score in essay test of experimental class, the result of post-test in multiple choices test of experimental class, result of data analysis, and discussion.

A. Description of the Data

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

1. The Result Pre Test Score of Essay Test of The Experiment Class

The writer gave pre test used essay test for the experimental class. It was conducted on Saturday, September 5th, 2015, at 09.45 – 11.05 am; in VII-1 room with the number of student were 26 students.

The scores of essay test are presented in the following table:

Table 4.1 The Result of Pre Test Score on Essay Test of Experimental Class

No	Experiment Class	
	Students' Code	Score
1	N01	30
2	N02	47
3	N03	67
4	N04	60
5	N05	57

No	Experiment Class	
	Students' Code	Score
6	N06	57
7	N07	47
8	N08	30
9	N09	37
10	N10	40
11	N11	50
12	N12	87
13	N13	67
14	N14	93
15	N15	40
16	N16	37
17	N17	60
18	N18	67
19	N19	100
20	N20	33
21	N21	53
22	N22	20
23	N23	40
24	N24	63
25	N25	7
26	N26	67

Based on the data above, it can be seen that the students' highest score is 100 and the student's lowest score is 7. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The highest score (H) : 100

The lowest score (L) : 7

The range of score (R)

$$= H - L + 1$$

$$= 100 - 7 + 1$$

$$= 93 + 1$$

$$= 94$$

$$\text{Interval of temporary (I)} = \frac{R}{K} = \frac{94}{5} = 18.8 = 19$$

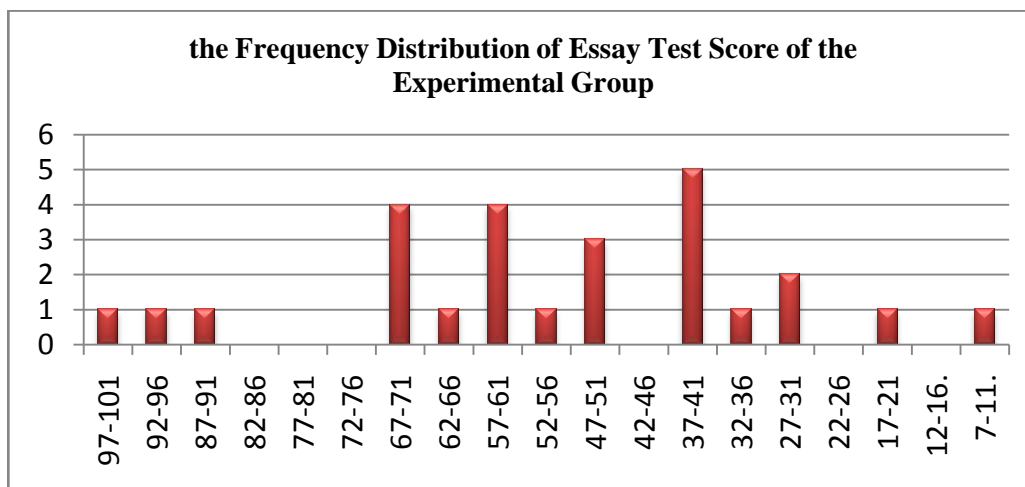
From the calculation above, it could be seen that the range of score is 94 and interval of temporary is 5. Then, it is presented using frequency distribution in table 1.1 as follow:

Table 4.2, Frequency Distribution of Essay Test Score of the Experiment

Class

No	Interval (I)	Frequency (F)	Mid Point (X)	FX
1	97-101	1	99	99
2	92-96	1	94	94
3	87-91	1	89	89
4	82-86	0	84	0
5	77-81	0	79	0
6	72-76	0	74	0
7	67-71	4	69	276
8	62-66	1	64	64
9	57-61	4	59	236
10	52-56	1	54	54
11	47-51	3	49	147
12	42-46	0	44	0
13	37-41	5	39	195
14	32-36	1	34	34
15	27-31	2	29	58
16	22-26	0	24	0
17	17-21	1	19	19
18	12-16	0	14	0
19	7-11	1	9	9
	Total	N=26		∑FX=1374

Figure 4.3 the Frequency Distribution of Essay Test Score of the Experimental Group



It can be seen from the figure above, the students' pre-test scores in experimental group. There is one student who got score 97-100. There is one student who got score 92-96. There is one student who got score 87-91. There are four students who got score 67-71. There is one student who got score 62-66. There are four students who got score 57-61. There is one student who got score 52-56. There are three students who got score 47-51. There are five students who got score 37-41. There is one student who got score 32-36. There are two students who got score 27-31. There is one student who got score 17-21. There is one student who got score 7-11.

The next step, the writer tabulated the score of essay of experiment class into table for calculating of mean, median, and modus as follows:

Table 4.4 The Calculation of Mean, Median, and Modus of Essay Test**Score of the Experiment Class**

No	Interval (I)	Frequency (F)	Mid Point (X)	FX	Fka	Fkb
1	97-101	1	99	99	1	26
2	92-96	1	94	94	2	25
3	87-91	1	89	89	3	24
4	82-86	0	84	0	3	23
5	77-81	0	79	0	3	23
6	72-76	0	74	0	3	23
7	67-71	4	69	276	7	23
8	62-66	1	64	64	8	19
9	57-61	4	59	236	12 _{fka}	18
10	52-56	1 _{fi}	54	54	13	14
11	47-51	3	49	147	16	13 _{fkb}
12	42-46	0 _{fa}	44	0	16	10
13	37-41	5	39	195	21	10
14	32-36	1 _{fb}	34	34	22	5
15	27-31	2	29	58	24	4
16	22-26	0	24	0	24	2
17	17-21	1	19	19	25	2
18	12-16	0	14	0	25	1
19	7-11	1	9	9	26	1
	Total	N=26		∑FX=1374		

To calculate mean, median, and modus, the writer used formula as follow:

a. Mean

$$\begin{aligned}
 Mx &= \frac{\sum fx}{N} \\
 &= \frac{1374}{26} \\
 &= 52.8
 \end{aligned}$$

b. Median

Score: 52 – 56

fi: 1

fka: 12

i: 5

u: $56 + 0.5 = 56.5$

$$\begin{aligned}
 Mdn &= u - \frac{\left(\frac{1}{2}N - fka\right)}{fi} \times i \\
 &= 56.5 - \frac{\left(\frac{1}{2} \cdot 26 - 12\right)}{1} \times 5 \\
 &= 56.5 - \frac{(13 - 12)}{1} \times 5 \\
 &= 56.5 - \frac{1}{1} \times 5 \\
 &= 56.5 - 5 = 51.5
 \end{aligned}$$

c. Modus

Score: 52 – 56

fa: 0

fb: 1

i: 5

u: $56 + 0.5 = 56.5$

$$\begin{aligned}
 Mo &= u - \left[\frac{fb}{fa + fb} \right] \times i \\
 &= 56.5 - \left[\frac{1}{0 + 1} \right] \times 5 \\
 &= 56.5 - \frac{1}{1} \times 5 \\
 &= 56.5 - 5 = 51.5
 \end{aligned}$$

Based on the calculation above, it could be seen that mean of experiment class is 52.8, median was 51.5, and modus is 51.5.

The last step, the writer tabulated the score of essay test of experiment class into table for calculating of standard deviation and standard error as follows:

Table 4.5 The Calculation of Standard Deviation and Standard Error of Essay Test Score of the Experiment Class

No	Interval (I)	(F)	(X)	FX	X-M	X ²	FX ²
1	97-101	1	99	99	46.2	2134.44	2134.44
2	92-96	1	94	94	41.2	1697.44	1697.44
3	87-91	1	89	89	36.2	1310.44	1310.44
4	82-86	0	84	0	31.2	973.44	0
5	77-81	0	79	0	26.2	686.44	0
6	72-76	0	74	0	21.2	449.44	0
7	67-71	4	69	276	16.2	262.44	1049.76
8	62-66	1	64	64	11.2	125.44	125.44
9	57-61	4	59	236	6.2	38.44	153.76
10	52-56	1	54	54	1.2	1.44	1.44
11	47-51	3	49	147	-3.8	14.44	43.32
12	42-46	0	44	0	-8.8	77.44	0
13	37-41	5	39	195	-13.8	190.44	952.2
14	32-36	1	34	34	-18.8	353.44	353.44
15	27-31	2	29	58	-23.8	5664.4	11328.8
16	22-26	0	24	0	-28.8	829.44	0
17	17-21	1	19	19	-33.8	1142.44	1142.44
18	12-16	0	14	0	-38.8	1505.44	0
19	7-11	1	9	9	-43.8	1918.44	1918.44
	Total	N=26		∑FX=1374			∑FX²=22211.436

To calculate standard deviation and standard error, the writer used formula as follow:

d. Standard Deviation

$$\begin{aligned}
 SD &= \sqrt{\frac{\sum fx^2}{N}} \\
 &= \sqrt{\frac{22211.436}{26}} \\
 &= \sqrt{854.286} \\
 &= 29.228
 \end{aligned}$$

e. Standard Error

$$\begin{aligned}
 Sem &= \frac{sd}{\sqrt{n-1}} \\
 &= \frac{29.228}{\sqrt{26-1}} = \frac{29.228}{\sqrt{25}} = \frac{29.228}{5} = 5.845
 \end{aligned}$$

Based on the calculation above, it could be seen that standard deviation is 29.228 and standard error is 5.845.

2. The Result of Pre Test Score in Multiple Choices Test of the Experiment Class

The writer gave pre test used multiple choices test to the experiment class. First, pre test was conducted to the experiment class. It was conducted on Saturday, September 5th, 2015, at 09.45 – 11.05 am; in VII-1 room with the number of student were 26 students.

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

**Table 4.6 The result of Pre Test Score on Multiple Choices Test of
Experimental Class**

No	Experiment Class	
	Students' Code	Score
1	N01	49
2	N02	60
3	N03	84
4	N04	74
5	N05	84
6	N06	76
7	N07	64
8	N08	65
9	N09	51
10	N10	65
11	N11	69
12	N12	69
13	N13	64
14	N14	82
15	N15	74
16	N16	71
17	N17	89
18	N18	80
19	N19	51
20	N20	69
21	N21	71
22	N22	64
23	N23	40
24	N24	85
25	N25	31
26	N26	69

Based on the data above, it can be seen that the students' highest score is 89 and the student's lowest score is 31. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

$$\begin{aligned}
 \text{The highest score (H)} & : 89 \\
 \text{The lowest score (L)} & : 31 \\
 \text{The range of score (R)} & = H - L + 1 \\
 & = 89 - 31 + 1 \\
 & = 58 + 1 \\
 & = 59
 \end{aligned}$$

$$\text{Interval of temporary (I)} = \frac{R}{K} = \frac{59}{6} = 9.83 = 10$$

From the calculation above, it could be seen that the range of score is 59 and interval of temporary is 6. Then, it is presented using frequency distribution in table 1.1 as follow:

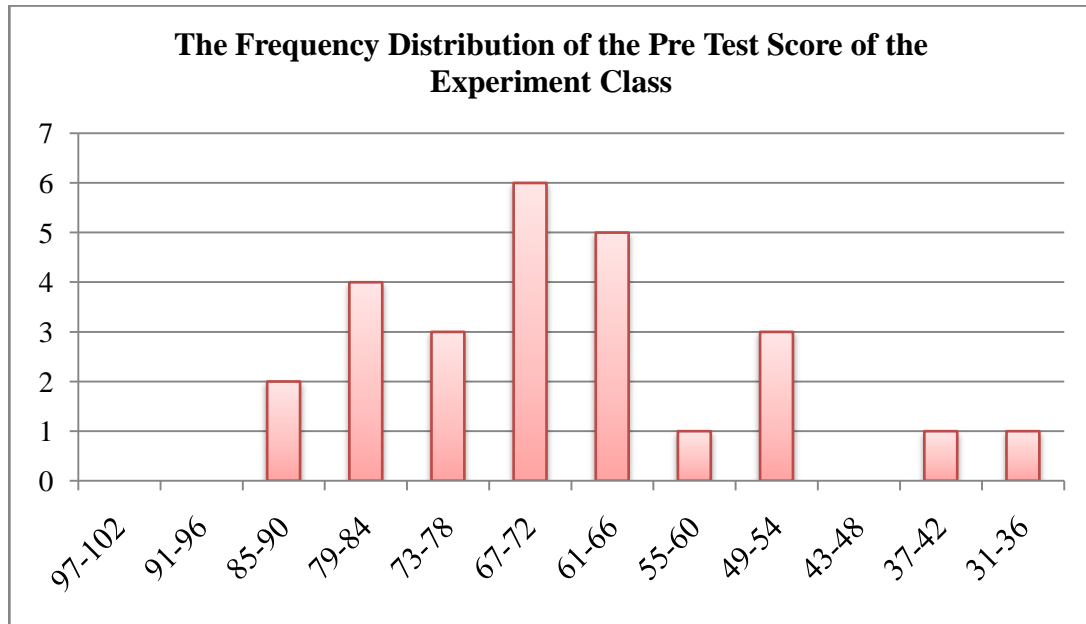
Table 4.7 Frequency Distribution of Pre Test Score in Multiple Choices

Test of the Experiment Class

No	Interval (I)	Frequency (F)	Mid Point (X)	FX
1	85 – 90	2	87.5	175
2	79 – 84	4	81.5	326
3	73 – 78	3	75.5	226.5
4	67 – 72	6	69.5	417
5	61 – 66	5	63.5	317.5
6	55 – 60	1	57.5	57.5
7	49 – 54	3	51.5	154.5
8	43 – 48	0	45.5	0
9	37 – 42	1	39.5	39.5
10	31 – 36	1	33.5	33.5
	Total	N=26		ΣFX=1747

Figure 4.8 the Frequency Distribution of Pre-test Score in Multiple Choices

Test of the Experimental Group



It can be seen from the figure above, the students' pre-test scores in experimental group. There are two students who got score 85-90. There are four students who got score 79-84. There are three students who got score 73-78. There are six students who got score 67-72. There are five students who got score 61-66. There is one student who got score 55-60. There are three students who got score 49-54. There is one student who got score 37-42. There is one student who got score 31-36.

The next step, the writer tabulated the score of pre test of experiment class into table for calculating of mean, median, and modus as follows:

**Table 4.9 The Calculation of Mean, Median, and Modus of Pre Test Score
in Multiple Choices Test of the Experiment Class**

No	Interval (I)	Frequency (F)	Mid Point (X)	FX	Fka	Fkb
1	85 – 90	2	87.5	175	2	26
2	79 – 84	4	81.5	326	6	24
3	73 – 78	3 _{fa}	75.5	226.5	9 _{fka}	20
4	67 – 72	6 _{fi}	69.5	417	15	17
5	61 – 66	5 _{fb}	63.5	317.5	20	11 _{fkb}
6	55 – 60	1	57.5	57.5	21	6
7	49 – 54	3	51.5	154.5	24	5
8	43 – 48	0	45.5	0	24	2
9	37 – 42	1	39.5	39.5	25	2
10	31 – 36	1	33.5	33.5	26	1
	Total	N=26		∑FX=1747		

To calculate mean, median, and modus, the writer used formula as follow:

a. Mean

$$\begin{aligned}
 Mx &= \frac{\sum fx}{N} \\
 &= \frac{1747}{26} \\
 &= 67.2
 \end{aligned}$$

b. Median

Score: 67 – 72

fi: 6

fka: 9

i: 6

u: $72 + 0.5 = 72.5$

$$\begin{aligned}
 Mdn &= u - \frac{\left(\frac{1}{2}N - fka\right)}{fi} \times i \\
 &= 72.5 - \frac{\left(\frac{1}{2} \cdot 26 - 9\right)}{6} \times 6 \\
 &= 72.5 - \frac{(13-9)}{6} \times 6 \\
 &= 72.5 - \frac{4}{6} \times 6 \\
 &= 72.5 - 4 = 68.5
 \end{aligned}$$

c. Modus

Score: 67 – 72

fa: 3

fb: 5

i: 6

u: $72 + 0.5 = 72.5$

$$\begin{aligned}
 Mo &= u - \left[\frac{fb}{fa + fb} \right] \times i \\
 &= 72.5 - \left[\frac{5}{3 + 5} \right] \times 6 \\
 &= 72.5 - \frac{5}{8} \times 6 \\
 &= 72.5 - 3.75 = 68.75
 \end{aligned}$$

Based on the calculation above, it could be seen that mean of experiment class is 67.2, median is 68.5, and modus is 68.75.

The last step, the writer tabulated the score of pre test of experiment class into table for calculating of standard deviation and standard error as follows:

Table 4.10 The Calculation of Standard Deviation and Standard Error of Pre Test Score in Multiple Choices Test of the Experiment Class

No	Interval (I)	(F)	(X)	FX	X-M	X ²	FX ²
1	85 – 90	2	87.5	175	20.3	412.09	824.18
2	79 – 84	4	81.5	326	14.3	204.49	817.96
3	73 – 78	3 _{fa}	75.5	226.5	8.3	68.89	206.67
4	67 – 72	6 _{fi}	69.5	417	2.3	5.29	31.74
5	61 – 66	5 _{fb}	63.5	317.5	-3.7	13.69	68.45
6	55 – 60	1	57.5	57.5	-9.7	94.09	94.09
7	49 – 54	3	51.5	154.5	-15.7	246.49	739.47
8	43 – 48	0	45.5	0	-21.7	470.89	0
9	37 – 42	1	39.5	39.5	-27.2	739.84	739.84
10	31 – 36	1	33.5	33.5	-33.7	1135.69	1135.69
	Total	N=26		∑FX=1747			∑FX²=4658.09

To calculate standard deviation and standard error, the writer used formula as

follow:

a. Standard Deviation

$$\begin{aligned}
 SD &= \sqrt{\frac{\sum fx^2}{N}} \\
 &= \sqrt{\frac{4658.09}{26}} \\
 &= \sqrt{179.157} \\
 &= 13.384
 \end{aligned}$$

b. Standard Error

$$\begin{aligned}
 Sem &= \frac{sd}{\sqrt{n-1}} \\
 &= \frac{13.384}{\sqrt{26-1}} = \frac{13.384}{\sqrt{25}} = \frac{13.384}{5} = 2.676
 \end{aligned}$$

Based on the calculation above, it could be seen that standard deviation is 13.384 and standard error is 2.676.

3. The Result of Post Test Score in Essay Test of Experimental Class

The writer gave post test used essay test to the experiment class. First, post test was conducted to the experiment class. It was conducted on Saturday, Oktober 03th, 2015, at 07.15 – 08.35 am; in VII-1 room with the number of student were 26 students.

The scores of essay test are presented in the following table:

Table 4.11 The Result of Post Test Score in Essay Test of Experimental Class

No	Experiment Class	
	Students' Code	Score
1	N01	39
2	N02	33
3	N03	92
4	N04	81
5	N05	91
6	N06	33
7	N07	50
8	N08	74
9	N09	79
10	N10	50
11	N11	24
12	N12	37

No	Experiment Class	
	Students' Code	Score
13	N13	18
14	N14	91
15	N15	37
16	N16	39
17	N17	92
18	N18	81
19	N19	41
20	N20	100
21	N21	39
22	N22	67
23	N23	78
24	N24	91
25	N25	26
26	N26	44

Based on the data above, it can be seen that the students' highest score is 100 and the student's lowest score is 18. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The highest score (H) : 100

The lowest score (L) : 18

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

$$= 100 - 18 + 1$$

$$= 82 + 1$$

$$= 83$$

$$\text{Interval of temporary (I)} = \frac{R}{K} = \frac{83}{6} = 14.16 = 15$$

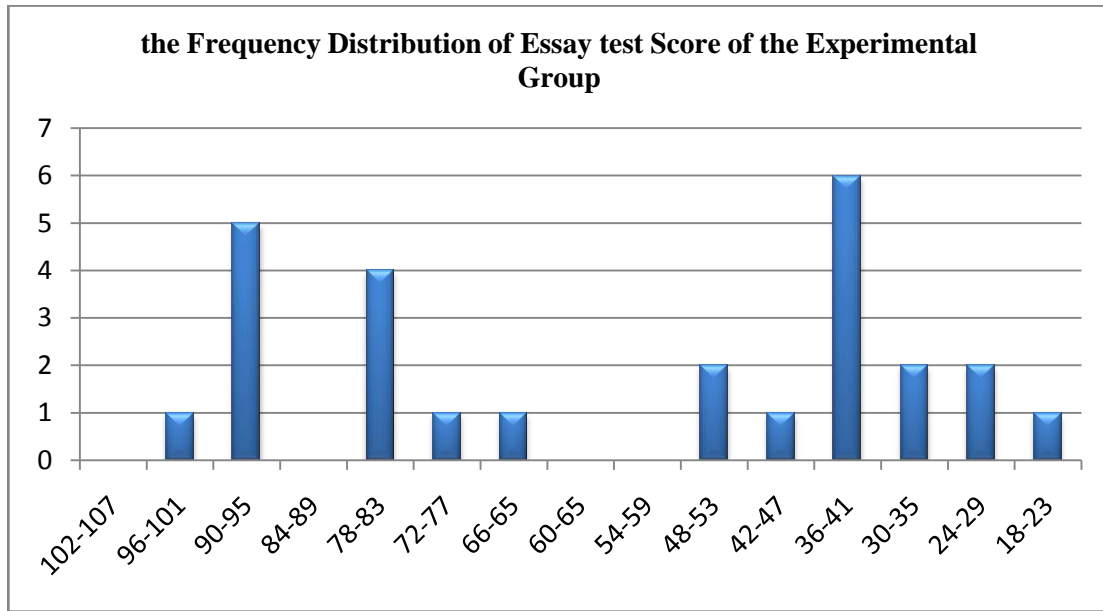
From the calculation above, it could be seen that the range of score is 83 and interval of temporary is 6. Then, it is presented using frequency distribution in table 1.1 as follow:

Table 4.12, Frequency Distribution of Essay Test Score of the Experiment

Class

No	Interval (I)	Frequency (F)	Mid Point (X)	FX
1	102-107	0	104.5	0
2	96-101	1	98.5	98.5
3	90-95	5	92.5	477.5
4	84-89	0	86.5	0
5	78-83	4	80.5	322
6	72-77	1	74.5	74.5
7	66-71	1	68.5	68.5
8	60-65	0	62.5	0
9	54-59	0	56.5	0
10	48-53	2	50.5	101
11	42-47	1	44.5	44.5
12	36-41	6	38.5	231
13	30-35	2	32.5	65
14	24-29	2	26.5	53
15	18-23	1	20.5	20.5
	Total	N=26		$\sum FX=1555.6$

Figure 4.13 the Frequency Distribution of Essay test Score of the Experimental Group



It can be seen from the figure above, the students' pre-test scores in experimental group. There is one student who got score 96-101. There are five students who got score 90-95. There are four students who got score 78-83. There is one student who got score 72-77. There is one student who got score 66-65. There are two students who got score 48-53. There is one student who got score 42-47. There are six students who got score 36-41. There are two students who got score 30-35. There are two students who got score 24-29. There is one student who got score 18-23.

The next step, the writer tabulated the score of essay of experiment class into table for calculating of mean, median, and modus as follows:

Table 4.14, The Calculation of Mean, Median, and Modus of Essay Test Score of the Experiment Class

No	Interval (I)	Frequency (F)	Mid Point (X)	FX	Fka	Fkb
1	102-107	0	104.5	0	0	26
2	96-101	1	98.5	98.5	1	26
3	90-95	5	92.5	477.5	6	25
4	84-89	0	86.5	0	6	20
5	78-83	4	80.5	322	10	20
6	72-77	1	74.5	74.5	11 _{fka}	16
7	66-71	1 _{fi}	68.5	68.5	13	15
8	60-65	0	62.5	0	13	14 _{fkb}
9	54-59	0	56.5	0	13	14
10	48-53	2	50.5	101	14	14
11	42-47	1 _{fa}	44.5	44.5	15	12
12	36-41	6	38.5	231	21	11
13	30-35	2 _{fb}	32.5	65	23	5
14	24-29	2	26.5	53	25	3
15	18-23	1	20.5	20.5	26	1
	Total	N=26		∑FX=1555.6		

To calculate mean, median, and modus, the writer used formula as follow:

a. Mean

$$\begin{aligned}
 Mx &= \frac{\sum fx}{N} \\
 &= \frac{1555.6}{26} \\
 &= 59.8
 \end{aligned}$$

b. Median

Score: 66 – 71

fi: 1

fka: 11

i: 6

u: $71 + 0.5 = 71.5$

$$\begin{aligned}
 Mdn &= u - \frac{\left(\frac{1}{2}N - fka\right)}{fi} \times i \\
 &= 71.5 - \frac{\left(\frac{1}{2} \cdot 26 - 11\right)}{1} \times 6 \\
 &= 71.5 - \frac{(13-11)}{1} \times 6 \\
 &= 71.5 - \frac{2}{1} \times 6 \\
 &= 71.5 - 12 = 59.5
 \end{aligned}$$

c. Modus

Score: 66 – 71

fa: 1

fb: 2

i: 6

u: $71 + 0.5 = 71.5$

$$\begin{aligned}
 Mo &= u - \left[\frac{fb}{fa + fb} \right] \times i \\
 &= 71.5 - \left[\frac{2}{1 + 2} \right] \times 6 \\
 &= 71.5 - \frac{2}{3} \times 6
 \end{aligned}$$

$$= 71.5 - 4 = 67.5$$

Based on the calculation above, it could be seen that mean of experiment class is 59.8, median is 59.5, and modus is 67.5.

The last step, the writer tabulated the score of essay test of experiment class into table for calculating of standard deviation and standard error as follows:

Table 4.15 The Calculation of Standard Deviation and Standard Error of Essay Test Score of the Experiment Class

No	Interval (I)	(F)	(X)	FX	X-M	X ²	FX ²
1	102-107	0	104.5	0	44.7	1998.09	0
2	96-101	1	98.5	98.5	38.7	1497.69	1497.69
3	90-95	5	92.5	477.5	32.7	1069.29	5346.45
4	84-89	0	86.5	0	26.7	712.89	0
5	78-83	4	80.5	322	20.7	428.49	1713.96
6	72-77	1	74.5	74.5	14.7	216.09	216.09
7	66-71	1	68.5	68.5	8.7	75.69	75.69
8	60-65	0	62.5	0	2.7	7.29	0
9	54-59	0	56.5	0	-3.3	10.89	0
10	48-53	2	50.5	101	-9.3	86.49	172.98
11	42-47	1	44.5	44.5	-15.3	234.09	234.09
12	36-41	6	38.5	231	-21.3	453.69	2722.14
13	30-35	2	32.5	65	-27.3	745.29	1490.58
14	24-29	2	26.5	53	-33.3	1108.89	2217.78
15	18-23	1	20.5	20.5	-39.3	1544.49	1544.49
	Total	N=26		∑FX=1555.6			∑FX²=17231.94

To calculate standard deviation and standard error, the writer used formula as follow:

d. Standard Deviation

$$\begin{aligned} SD &= \sqrt{\frac{\sum fx^2}{N}} \\ &= \sqrt{\frac{17231.94}{26}} \\ &= \sqrt{662.766} \\ &= 25.744 \end{aligned}$$

e. Standard Error

$$\begin{aligned} Sem &= \frac{sd}{\sqrt{n-1}} \\ &= \frac{25.744}{\sqrt{26-1}} = \frac{25.744}{\sqrt{25}} = \frac{25.744}{5} = 5.148 \end{aligned}$$

Based on the calculation above, it could be seen that standard deviation is 25.744 and standard error is 5.148.

4. The Result of Post Test Score of Multiple Choices Test of the Experiment Class

The writer gave post test used multiple choices test to the experiment class. First, post test was conducted to the experiment class. It was conducted on Saturday, Oktober 03th, 2015, at 07.15 – 08.35 am; in VII-1 room with the number of student were 26 students.

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

**Table 4.16 The result of Post Test Score of Multiple Choices Test of
Experimental Class**

No	Experiment Class	
	Students' Code	Score
1	N01	58
2	N02	84
3	N03	94
4	N04	91
5	N05	94
6	N06	69
7	N07	67
8	N08	76
9	N09	84
10	N10	65
11	N11	76
12	N12	62
13	N13	45
14	N14	84
15	N15	91
16	N16	67
17	N17	87
18	N18	89
19	N19	80
20	N20	93
21	N21	91
22	N22	71
23	N23	73
24	N24	91
25	N25	69
26	N26	73

Based on the data above, it can be seen that the students' highest score is 94 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:

$$\begin{aligned}
 \text{The highest score (H)} & : 94 \\
 \text{The lowest score (L)} & : 45 \\
 \text{The range of score (R)} & = H - L + 1 \\
 & = 94 - 45 + 1 \\
 & = 49 + 1 \\
 & = 50
 \end{aligned}$$

$$\text{Interval of temporary (I)} = \frac{R}{K} = \frac{50}{7} = 7.14 = 8$$

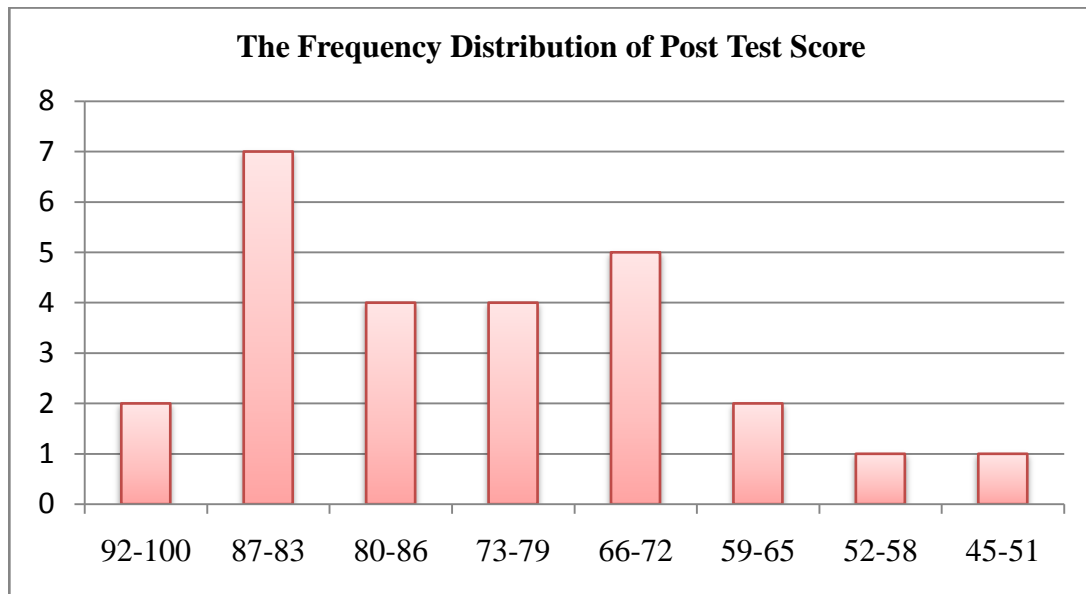
From the calculation above, it could be seen that the range of score is 50, the class interval is 7, and interval of temporary is 8. Then, it is presented using frequency distribution in table 1.7 as follow:

Table 4.17 Frequency Distribution of Post Test Score of Multiple Choices

Test of the Experiment Class

No	Interval (I)	Frequency (F)	Mid Point (X)	FX
1	94-100	2	97	194
2	87-83	7	90	630
3	80-86	4	83	332
4	73-79	4	76	304
5	66-72	5	69	345
6	59-65	2	62	124
7	52-58	1	55	55
8	45-51	1	48	48
		N=26		∑FX=2032

Figure 4.18 the Frequency Distribution of Post-test Score of Multiple Choices Test of the Experimental Group



It can be seen from the figure above, the students' post test scores in experimental group. There are two students who got score 92-100. There are seven students who got score 87-83. There are four students who got score 80--86. There are four students who got score 73-79. There are five students who got score 66-72. There are two students who got score 59-65. There is one student who got score 52-58. There is one student who got score 45-51.

The next step, the writer tabulated the score of post test of experiment class into table for calculating of mean, median, and modus as follows:

Table 4.19 The Calculation of Mean, Median, and Modus of Post Test Score of Multiple Choices Test of the Experiment Class

No	Interval (I)	Frequency (F)	Mid Point (X)	FX	Fka	Fkb
1	94-100	2 _{fa}	97	194	2	26
2	87-83	7	90	630	9 _{fka}	24
3	80-86	4 _{fi}	83	332	13	17
4	73-79	4 _{fb}	76	304	17	13 _{fkb}
5	66-72	5	69	345	22	9
6	59-65	2	62	124	24	4
7	52-58	1	55	55	25	2
8	45-51	1	48	48	26	1
		N=26		∑FX=2032		

To calculate mean, median, and modus, the writer used formula as follow:

a. Mean

$$\begin{aligned}
 M_x &= \frac{\sum fx}{N} \\
 &= \frac{2032}{26} \\
 &= 78.2
 \end{aligned}$$

b. Median

Score: 80 – 86

fi: 4

fka: 9

i: 7

u: $86 + 0.5 = 86.5$

$$\begin{aligned}
 Mdn &= u - \frac{\left(\frac{1}{2}N - fka\right)}{fi} \times i \\
 &= 86.5 - \frac{\left(\frac{1}{2} \cdot 26 - 9\right)}{4} \times 7 \\
 &= 86.5 - \frac{(13-9)}{4} \times 7 \\
 &= 86.5 - \frac{4}{4} \times 7 \\
 &= 86.5 - 7 = 79.5
 \end{aligned}$$

c. Modus

Score: 80 – 86

fa: 2

fb: 4

i: 7

u: $86 + 0.5 = 86.5$

$$\begin{aligned}
 Mo &= u - \left[\frac{fb}{fa + fb} \right] \times i \\
 &= 86.5 - \left[\frac{4}{2 + 4} \right] \times 7 \\
 &= 86.5 - \frac{4}{6} \times 7 \\
 &= 86.5 - 4.6 = 81.9
 \end{aligned}$$

Based on the calculation above, it could be seen that mean value of experiment class is 78.2, median is 79.5, and modus is 81.9.

The next step, the writer tabulated the score of post test of experiment class into table for calculating of standard deviation and standard error as follows:

Table 4.20 The Calculation of Standard Deviation and Standard Error of Post Test Score of Multiple Choices Test of the Experiment Class

No	Interval	F	X	FX	X-M	X ²	FX ²
1	94-100	2	97	194	18.8	353.44	706.88
2	87-83	7	90	630	11.8	139.24	974.68
3	80-86	4	83	332	4.8	23.04	92.16
4	73-79	4	76	304	-2.2	4.84	19.36
5	66-72	5	69	345	-9.2	84.64	423.2
6	59-65	2	62	124	-16.2	262.44	524.88
7	52-58	1	55	55	-23.2	538.24	538.24
8	45-51	1	48	48	-60.2	3624.04	3624.04
		N=26		∑FX=2032			∑FX²=6903.44

To calculate standard deviation and standard error, the writer used formula as

follow:

d. Standard Deviation

$$\begin{aligned}
 SD &= \sqrt{\frac{\sum fx^2}{N}} \\
 &= \sqrt{\frac{6903.44}{26}} \\
 &= \sqrt{265.516} \\
 &= 16.294
 \end{aligned}$$

e. Standard Error

$$Sem = \frac{sd}{\sqrt{n-1}} = \frac{16.294}{\sqrt{26-1}} = \frac{16.294}{5} = 3.258$$

Based on the calculation above, it be seen that standard deviation is 16.294 and standard error is 3.258.

B. The Result of Data Analysis

1. Testing Hypothesis of Essay Test Using Manual Calculation

In analyzing the data, the writer interpreted the data from the table of the calculation of pre-test and post-test as follows:

Table 4.21 The Calculation of Pre-Test and Post-Test Scores of Essay test

No	Students' Code	SCORE OF PRETES T (X)	SCORE OF POSTTES T (Y)	D (X-Y)	D2 (X-Y) ²
1	N01	30	39	-9	81
2	N02	47	33	14	196
3	N03	67	92	-25	625
4	N04	60	81	-21	441
5	N05	57	91	-34	1156
6	N06	57	33	24	576
7	N07	47	50	-3	9
8	N08	30	74	-44	1936
9	N09	37	79	-42	1764
10	N10	40	50	-10	100
11	N11	50	24	26	676
12	N12	87	37	50	2500
13	N13	67	18	49	2401
14	N14	93	91	2	4
15	N15	40	37	3	9
16	N16	37	39	-2	4
17	N17	60	92	-32	1024
18	N18	67	81	-14	196
19	N19	100	41	59	3481
20	N20	33	100	67	4489

No	Students' Code	SCORE OF PRETES T (X)	SCORE OF POSTTES T (Y)	D (X-Y)	D2 (X-Y)2
21	N21	53	39	14	196
22	N22	20	67	-47	2209
23	N23	40	78	-38	1444
24	N24	63	91	-28	784
25	N25	7	26	-19	361
26	N26	67	44	23	529
total		1356	1528	$\sum D=736$	$\sum D^2 =27191$

Based on the data from the table, the writer calculated the value of mean, the

standard deviation and the standard error used the formula as follows :

a. Mean

$$MD = \frac{\sum D}{N}$$

$$MD = \frac{736}{26} = 28.307$$

b. Standard Deviation

$$SD D = \sqrt{\frac{\sum D^2}{N} - \left(\frac{\sum D}{N}\right)^2}$$

$$SD_D = \sqrt{\frac{27191}{26} - \left(\frac{736}{26}\right)^2}$$

$$= \sqrt{1045.807} - (28.307)^2$$

$$= \sqrt{1045.80} - 801.286$$

$$= \sqrt{244.521}$$

$$= 15.637$$

c. Standard Error

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

$$SE_{MD} = \frac{15.637}{\sqrt{26-1}}$$

$$= \frac{15.637}{5} = 3.127$$

Furthermore, the data obtained could be seen in the result of the calculation as follows:

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

$$t_0 = \frac{28.307}{3.127} = 9.052$$

Next, the writer accounted degree of freedom (df) with the formula as follow:

$$df = (N - 1)$$

$$= (26 - 1)$$

$$= 25$$

After that, the writer interpreted the result of t test. To know the hypothesis is accepted or rejected, the writer used the criterion as follow:

If $t\text{-test} \geq t_{\text{table}}$, it meant H_a was accepted and H_o was rejected.

If $t\text{-test} \leq t_{\text{table}}$, it meant H_a was rejected and H_o was accepted.

The next step, the writer tabulated the result of the t test calculation into table 4.22 as follows:

Table 4.22 The Result of T Test Using Manual Calculation of Essay Test

T Observed	T table		Df
	5%	1%	
9.052	2.06	2.79	25

Based on the table above, it could be seen that the result of t test using manual calculation is 9.052 and the result of degree of freedom (df) calculation is 25. Then the result of t test is interpreted on the result of degree of freedom to get value of the t_{table} . It was found that $t_{observed}$ was higher than t_{table} at 5% and 1% significance level ($2.06 < 9.052 > 2.79$). It meant H_a was accepted and H_o was rejected. It showed that teaching vocabulary using realia media gave effect toward students' vocabulary score at seventh grade students of SMP Islam Nurul Ihsan Palangka Raya.

2. The Result Normality of Essay Test Using SPSS 20

Test of normality was know the normality of the data that is going to be analyzed whether have normal distribution or not.

Table 4.23 The Calculation Result test of Normality using SPSS 20

Tests of Normality ^{a,b,d,e,f,g,h,i,j}							
	pretest	Kolmogorov-Smirnov ^c			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Students' name	7						
	20						
	30	,260	2	.			
	33						
	37	,260	2	.			
	40	,227	3	.	,983	3	,747
	47	,260	2	.			
	50						
	53						
	57	,260	2	.			
	60	,260	2	.			
	63						
	67	,168	4	.	,996	4	,985
	87						
	93						
100							

From the Table 4.7 it can be seen that the significance of post-test score in experimental class is 0.747. It can be concluded that the data are normally distributed because $0.747 > 0.05$. Meanwhile, the significance of pre-test score in experimental class is 0.985. Therefore, the data are also normally distributed because $0.985 > 0.05$. In other words, the post-test and pre-test result in experimental class are normally distributed.

3. The Result Homogeneity of Essay Test Using Manual Calculation

Test of homogeneity was done to know whether sample in the research come from population that had same variance or not. In this study, the homogeneity of the test was measured by comparing the obtained score (F_{score}) with F_{table} . Thus, if the obtained score (F_{score}) was lower than the F_{table} or equal, it could be said that the

H_0 was accepted. It meant that the variance was homogeneous. But if (F_{score}) was bigger than the F_{table} , it could be said that the H_0 is rejected. It meant that the variance was not homogeneous.

The formula of the test of homogeneity as follows:

$$F = \frac{\text{Bigger Variant}}{\text{Smaller Variant}}$$

a. The Result Homogeneity of Pre test

$$\begin{aligned} F_{score} &= \frac{30}{12} \\ &= 2.5 \end{aligned}$$

On a 5% with df numerator ($n - 1$) = $26 - 1 = 25$ and df denominator ($n - 1$) = $25 - 1 = 24$, it was found $F_{table} = 2.62$. the result showed that $F_{score} \leq F_{table}$, or $2.5 \leq 2.62$. it can be concluded the variance was homogeneous.

b. The Result Homogeneity of Post test

$$\begin{aligned} F_{score} &= \frac{51}{20} \\ &= 2.55 \end{aligned}$$

On a 5% with df numerator ($n - 1$) = $26 - 1 = 25$ and df denominator ($n - 1$) = $25 - 1 = 24$, it was found $F_{table} = 2.62$ the result showed that $F_{score} \leq F_{table}$, or $2.55 \leq 2.62$. it can be concluded the variance was homogeneous.

Table 4.24 The Calculation of Sample correlations of Pre-test and Post-test using SPSS 20 of Essay Test

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	pretest & posttest	26	,100	,628

From the Table 4.8, the pre-test and post test scores of experimental class 26 participants have correlation of 0.100. Based on this correlation, the pre test and post test scores have a high positive correlation.

Table 4.25 The Calculation of T Test using SPSS 20 of Essay Test

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	pretest - posttest	-6,577	32,290	6,333	-19,619	6,465	-1,039	25	,309

From the table, it is showed that the significance (2-tailed) or p-value is 0.309 which is lower than α ($0.309 < 0.05$). The t-value obtained from this table is -1,039. The lower value in this table is 19.619 and the upper value is 6.465, while p-value is 0.309 and it is positioned outside lower and higher value. On the other hand p-value is outside (null hypothesis rejection area). From the table and the curve, it can be concluded that H_0 is rejected.

4. Testing Hypothesis of Multiple Choices Test Using Manual Calculation

To analyzing the data, the writer interpreted the data from the table of the calculation of pre-test and post-test as follows:

Table 4.26 The Calculation of Pre-Test and Post-Test Scores of Multiple Choices Test

No	Students' Code	SCORE OF PRETES T (X)	SCORE OF POSTTES T (Y)	D (X-Y)	D2 (X-Y) ²
1	N01	49	58	-9	81
2	N02	60	84	-24	576
3	N03	84	94	-10	100
4	N04	74	91	-17	289
5	N05	84	94	-10	100
6	N06	76	69	7	49
7	N07	64	67	-3	9
8	N08	65	76	-11	121
9	N09	51	84	-33	1089
10	N10	65	65	0	0
11	N11	69	76	-7	49
12	N12	69	62	7	49
13	N13	64	45	19	361
14	N14	82	84	-2	4
15	N15	74	91	-17	289
16	N16	71	67	4	16
17	N17	89	87	2	4
18	N18	80	89	-9	81
19	N19	51	80	-29	841
20	N20	69	93	-24	576
21	N21	71	91	-20	400
22	N22	64	71	-7	49
23	N23	40	73	-33	1089

No	Students' Code	SCORE OF PRETES T (X)	SCORE OF POSTTES T (Y)	D (X-Y)	D ² (X-Y) ²
24	N24	85	91	-6	36
25	N25	31	69	-38	1444
26	N26	69	73	-4	16
total		1750	2024	$\sum D=352$	$\sum D^2=7718$

Based on the data from the table, the writer calculated the value of mean, the standard deviation and the standard error used the formula as follows :

d. Mean

$$MD = \frac{\sum D}{N}$$

$$MD = \frac{352}{26} = 13.538$$

e. Standard Deviation

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

$$SD_D = \sqrt{\frac{7718}{26} - \left(\frac{352}{26}\right)^2}$$

$$= \sqrt{296.846 - (13.538)^2}$$

$$= \sqrt{296.846} - 183.277$$

$$= \sqrt{113.569} = 10.065$$

f. Standard Error

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

$$SE_{MD} = \frac{10.065}{\sqrt{26-1}}$$

$$= \frac{10.065}{5} = 2.013$$

Furthermore, the data obtained could be seen in the result of the calculation as follows:

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

$$t_0 = \frac{13.538}{2.013} = 6.725$$

Next, the writer accounted degree of freedom (df) with the formula as follow:

$$DF = (N - 1)$$

$$= (26 - 1)$$

$$= 25$$

After that, the writer interpreted the result of t test. To know the hypothesis was accepted or rejected, the writer used the criterion as follow:

If $t\text{-test} \geq t_{\text{table}}$, it meant H_a was accepted and H_o was rejected.

If $t\text{-test} \leq t_{\text{table}}$, it meant H_a was rejected and H_o was accepted.

The next step, the writer tabulated the result of the t test calculation into table 4.27 as follows:

Table 4.27 The Result of T Test Using Manual Calculation of Multiple Choices Test

T Observed	T table		Df
	5%	1%	
6.725	2.06	2.79	25

Based on the table above, it could be seen that the result of t test using manual calculation is 6.725 and the result of degree of freedom (df) calculation is 25. Then

the result of t test is interpreted on the result of degree of freedom to get value of the t_{table} . It was found that $t_{observed}$ was higher than t_{table} at 5% and 1% significance level ($2.06 < 6.725 > 2.79$). It meant H_a was accepted and H_o was rejected. It showed that teaching vocabulary using realia media gave effect toward students' vocabulary score at seventh grade students of SMP Islam Nurul Ihsan Palangka Raya

5. Testing Normality of Essay Test Using SPSS 20 of Multiple Choices Test

Test of normality was know the normality of the data that is going to be analyzed whether have normal distribution or not.

Table 4.28 The Calculation Result test of Normality using SPSS 20 of Multiple Choices Test

Paired Samples Test							
Tests of Normality ^{a,b,c,e,f,g,h,i,j}							
	score pre-test of experiment class	Kolmogorov-Smirnov ^d			Shapiro-Wilk		
		Statisti c	df	Sig.	Statisti c	df	Sig.
The name students of treatment	31						
	40						
	49						
	51	,260	2	.			
	60						
	64	,219	3	.	,987	3	,780
	65	,260	2	.			
	69	,271	4	.	,899	4	,425
	71	,260	2	.			
	74	,260	2	.			
	76						
	80						
	82						
	84	,260	2	.			
	85						
89							

From the Table 4.7 it can be seen that the significance of post-test score in experimental class is 0.780. It can be concluded that the data are normally distributed because $0.780 > 0.05$. Meanwhile, the significance of pre-test score in experimental class is 0.425. Therefore, the data are also normally distributed because $0.425 > 0.05$. In other words, the post-test and pre-test result in experimental class are normally distributed.

6. Testing Homogeneity of Multiple Choices Test Using Manual Calculation.

Test of homogeneity was done to know whether sample in the research come from population that had same variance or not. In this study, the homogeneity of the test was measured by comparing the obtained score (F_{score}) with F_{table} . Thus, if the obtained score (F_{score}) was lower than the F_{table} or equal, it could be said that the H_0 was accepted. It meant that the variance was homogeneous. But if (F_{score}) was bigger than the F_{table} , it could be said that the H_0 is rejected. It meant that the variance was not homogeneous.

The formula of the test of homogeneity as follows:

$$F = \frac{\text{Bigger Variant}}{\text{Smaller Variant}}$$

a. The Result Homogeneity of Pre test

$$\begin{aligned} F_{score} &= \frac{49}{22} \\ &= 2.22 \end{aligned}$$

On a 5% with df numerator $(n - 1) = 26 - 1 = 25$ and df denominator $(n - 1) = 25 - 1 = 24$, it was found $F_{table} = 2.62$. the result showed that $F_{score} \leq F_{table}$, or $2.22 \leq 2.62$. it can be concluded the variance was homogeneous.

b. The Result Homogeneity of Post test

$$F_{score} = \frac{52}{25}$$

$$= 2.08$$

On a 5% with df numerator $(n - 1) = 26 - 1 = 25$ and df denominator $(n - 1) = 25 - 1 = 24$, it was found $F_{table} = 2.62$ the result showed that $F_{score} \leq F_{table}$, or $2.08 \leq 2.62$. it can be concluded the variance was homogeneous.

Table 4.29 The Calculation of Sample correlations of Pre-test and Post-test using SPSS 20 of Multiple Choices Test

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Pre-test & post-test	26	,471	,015

From the Table 4.8, the pre-test and posttest scores of experimental class 26 participants have correlation of 0.471. Based on this correlation, the pretest and posttest scores have a high positive correlation.

Table 4.30 The Calculation of T Test using SPSS 20 of Multiple Choices**Test**

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 - post test	10,538	13,900	2,726	16,153	4,924	-3,866	25	,001

From the table, it is showed that the significance (2-tailed) or p-value is 0.001 which is lower than α ($0.001 < 0.05$). The t-value obtained from this table is -3.866. The lower value in this table is 16.153 and the upper value is 4.924, while p-value is 0.001 and it is positioned outside lower and higher value. On the other hand p-value is outside (null hypothesis rejection area). From the table and the curve, it can be concluded that H_0 is rejected

C. Discussion

The result of analysis showed that using realia media gave effect on vocabulary mastery at the seventh grade students at SMP Islam Nurul Ihsan Palangka Raya. It could be seen from the students who were taught using realia media got higher score. It proved by the students' post test result in which most of their score were improved. The finding was suitable with Retno Sumarni in chapter II page 11 states that, the increasing score of the students test shows that by using realia, the students have better memorization of the words..

After the data was calculated using manual calculation with t test formula, it was found that t_{observed} was higher than t_{table} at 5% and 1% significance level ($2.06 < 6.725 > 2.79$). It meant H_a was accepted and H_o was rejected. This finding indicated that the alternative hypothesis (H_a) stating that using realia media gave effect to students' vocabulary mastery at the seventh grade students at SMP Islam Nurul Ihsan Palangsa Raya was accepted. In other words, the null hypothesis (H_o) stating that using realia media did not gave effect to students' vocabulary mastery at the seventh grade students at SMP Islam Nurul Ihsan Palangka Raya was rejected.

There were some reasons why using realia media gave effect on vocabulary mastery at the seventh grade students at SMP Islam Nurul Ihsan Palangka Raya. First, realia media increased the students' score. It could be seen from score of mean between pre test and post test using essay and multiple choice item test of experiment class. The score of mean in post test using essay item test was higher than the score of mean in pre test (Post test = 59.8 > pre test = 52.8.2). The score of mean in post test using multiple choice item test was higher than the score of mean in pre test (Post test = 78.2 > pre test = 67.2). It is indicated that the students' score increased after was conducted treatment. It supported the previous study by Retno Sumarni in chapter II page 11 states that the increasing score of the students test shows that by using realia, the students have better memorization of the words.

Second, realia media could improve the students' understand and memorize. It supported by Vera Figueroa in chapter II page 33 stated that, using realia media in

teaching vocabulary is increasing the student's memory about the vocabulary given, increasing the understanding of the students and decreasing the monotonous teaching learning process, learners interact with the real language and content rather than the form.

Third, during the implementation of realia media in teaching and learning process, the students were enjoy and interested in learning. When the teacher showed things the students paid attention along the teaching learning process. It supported by Bayu Nurbaeti in chapter II page 32 stated that, The unexpectedness of having to suddenly interact with real objects will keep students on their toes; it will create excitement, and they will have fun.

fourth, based on a video of the learning process, that the students were interested and excited to the teaching learning process using realia. it was made the students memorize the vocabularies easier. It supported by Bayu Nurbaeti in chapter II page 33 stated that, Students will clearly understand the reason they are learning a particular ESL component. Instead of wondering when and where they might have use for a Particular language element, they will know the reason.