

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 of experimental class, the data are the result of post test score of the experimental class, the 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 of The Experiment Class

The writer gave pre test used multiple choices test to the experiment class. Pre test was conducted to the experiment class. It was conducted on Tuesday, April 19th, 2016; at 10.00 – 11.30 am in XI-IPA room with the number of student were 30 students.

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

Table 4.1 The Pre Test of Experimental Class

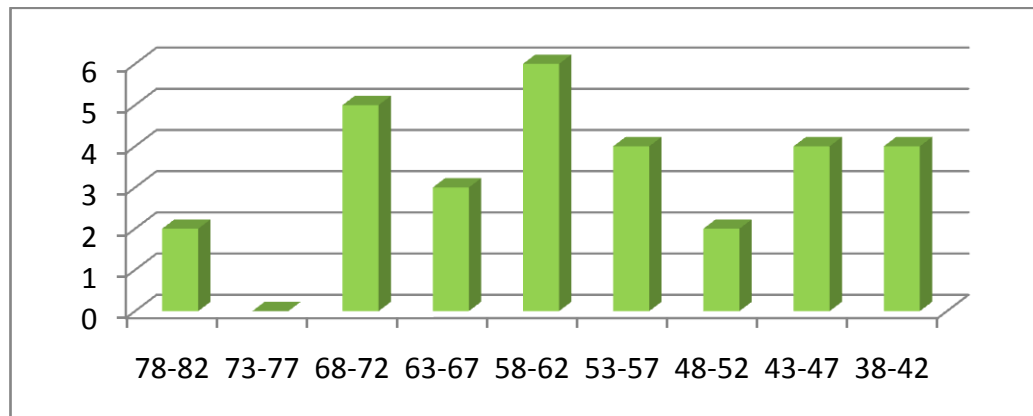
| No | Experiment Class | |
|----|------------------|-------|
| | Student s' Code | Score |
| 1 | S01 | 54 |
| 2 | S02 | 46 |
| 3 | S03 | 82 |
| 4 | S04 | 70 |
| 5 | S05 | 64 |
| 6 | S06 | 68 |
| 7 | S07 | 42 |
| 8 | S08 | 40 |
| 9 | S09 | 82 |

| No | Experiment Class | |
|----|------------------|-------|
| | Student s' Code | Score |
| 10 | S10 | 60 |
| 11 | S11 | 54 |
| 12 | S12 | 38 |
| 13 | S13 | 68 |
| 14 | S14 | 44 |
| 15 | S15 | 42 |
| 16 | S16 | 46 |
| 17 | S17 | 70 |
| 18 | S18 | 66 |
| 19 | S19 | 44 |
| 20 | S20 | 54 |
| 21 | S21 | 50 |
| 22 | S22 | 66 |
| 23 | S23 | 72 |
| 24 | S24 | 60 |
| 25 | S25 | 62 |
| 26 | S26 | 50 |
| 27 | S27 | 60 |
| 28 | S28 | 62 |
| 29 | S29 | 58 |
| 30 | S30 | 54 |

Based on the data above, it can be seen that the students' highest score is 82 and the student's lowest score is 38.

The next steps, the writer tabulated the score of pre test of experiment class into table for calculating of mean, median, modus, standard deviation and standard error using SPSS 20.

Figure 4.2 the Frequency Distribution of Pre-test Score 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 78-82. There are five students who got score 68-72. There are three students who got score 63-67. There are six students who got score 58-62. There are four students who got score 53-57. There is two student who got score 48-52. There are four students who got score 43-47. There is four student who got score 38-42.

Table 4.3 the Calculation of Mean, SD and SE using SPSS 20

| Statistics | | |
|--------------------|---------|-----------|
| | | score_pre |
| N | Valid | 30 |
| | Missing | 0 |
| Mean | | 57,60 |
| Std. Error of Mean | | 2,183 |
| Median | | 59,00 |
| Mode | | 54 |
| Std. Deviation | | 11,959 |

Based on the table above, the result calculation using SPSS 20, It found that the mean is 57.60, median is 59.00, the modus is 54, the standard deviation is 11.959 and the standard error of mean is 2.183.

2. The Result of Post Test Score of the Experiment Class

The writer gave post test used multiple choices test to the experiment class. Post test was conducted to the experiment class. It was conducted on Saturday, Mei 17th, 2016, at 10.00 – 11.30 am; in XI-IPA room with the number of student were 30 students.

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

Table 4.4 The result of Post Test Score of the Experimental Class

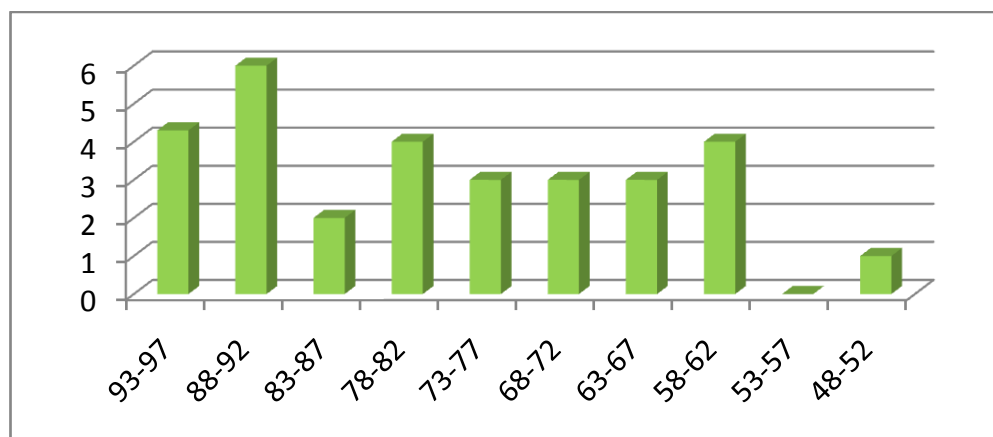
| No | Experiment Class | |
|----|------------------|-------|
| | Student s' Code | Score |
| 1 | S01 | 48 |
| 2 | S02 | 94 |
| 3 | S03 | 88 |
| 4 | S04 | 86 |
| 5 | S05 | 82 |
| 6 | S06 | 72 |
| 7 | S07 | 88 |
| 8 | S08 | 80 |
| 9 | S09 | 96 |
| 10 | S10 | 64 |
| 11 | S11 | 82 |
| 12 | S12 | 88 |
| 13 | S13 | 92 |
| 14 | S14 | 60 |
| 15 | S15 | 58 |
| 16 | S16 | 72 |
| 17 | S17 | 94 |
| 18 | S18 | 70 |
| 19 | S19 | 60 |
| 20 | S20 | 74 |
| 21 | S21 | 90 |
| 22 | S22 | 58 |

| No | Experiment Class | |
|----|------------------|-------|
| | Student s' Code | Score |
| 23 | S23 | 78 |
| 24 | S24 | 76 |
| 25 | S25 | 66 |
| 26 | S26 | 74 |
| 27 | S27 | 92 |
| 28 | S28 | 60 |
| 29 | S29 | 64 |
| 30 | S30 | 86 |

Based on the data above, it can be seen that the students' the highest score is 96, and the lowest score is 48.

The next steps, the writer tabulated the score of post test of experiment class into table for calculating of mean, median, modus, standard deviation and standard error using SPSS 20.

Figure 4.5 the Frequency Distribution of Post-test Score of the Experimental Group



It can be seen from the figure above, the students' post-test scores in experimental group. There are four students who got score 93-97. There are six students who got score 88-92. There are two students who got score 83-87. There

are four students who got score 78-82. There are three students who got score 73-77. There is three student who got score 68-72. There are three students who got score 63-67. There is four student who got score 58-62. There is one student who got score 48-52.

Table 4.6 the Calculation of Mean, SD and SE using SPSS 20

| Statistics | | |
|--------------------|---------|-----------------------|
| | | score_post |
| N | Valid | 30 |
| | Missing | 0 |
| Mean | | 76,40 |
| Std. Error of Mean | | 2,430 |
| Median | | 77,00 |
| Mode | | 60^a |
| Std. Deviation | | 13,312 |

Based on the table above, the result calculation using SPSS 20, It found that the mean is 76.40, median of is 77.00, the modus is 60, the standard deviation is 13.312 and the standard error mean is 2.430.

B. The Result of Data Analysis

1. Testing Hypothesis 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 4.7 The Calculation of Pre-Test and Post-Test Scores

| No | Students' Code | SCORE OF PRETEST (X) | SCORE OF POSTTE ST (Y) | D (X-Y) | D2 (X-Y) ² |
|----|----------------|----------------------|------------------------|---------|-----------------------|
| 1 | S01 | 54 | 48 | 6 | 36 |
| 2 | S02 | 46 | 94 | -48 | 2304 |

| No | Students' Code | SCORE OF PRETEST (X) | SCORE OF POSTTEST (Y) | D (X-Y) | D ² (X-Y) ² |
|-------|----------------|----------------------|-----------------------|----------------|-----------------------------------|
| 3 | S03 | 82 | 88 | -6 | 36 |
| 4 | S04 | 70 | 86 | -16 | 256 |
| 5 | S05 | 64 | 82 | -18 | 324 |
| 6 | S06 | 68 | 72 | -4 | 16 |
| 7 | S07 | 42 | 88 | -46 | 2116 |
| 8 | S08 | 40 | 80 | -40 | 1600 |
| 9 | S09 | 82 | 96 | -14 | 196 |
| 10 | S10 | 60 | 64 | -4 | 16 |
| 11 | S11 | 54 | 82 | -28 | 784 |
| 12 | S12 | 38 | 88 | -50 | 2500 |
| 13 | S13 | 68 | 92 | -24 | 576 |
| 14 | S14 | 44 | 60 | -16 | 256 |
| 15 | S15 | 42 | 58 | -16 | 256 |
| 16 | S16 | 46 | 72 | -26 | 676 |
| 17 | S17 | 70 | 94 | -24 | 576 |
| 18 | S18 | 66 | 70 | -4 | 16 |
| 19 | S19 | 44 | 60 | -16 | 256 |
| 20 | S20 | 54 | 74 | -20 | 400 |
| 21 | S21 | 50 | 90 | -40 | 1600 |
| 22 | S22 | 66 | 58 | 8 | 64 |
| 23 | S23 | 72 | 78 | -6 | 36 |
| 24 | S24 | 60 | 76 | -16 | 256 |
| 25 | S25 | 62 | 66 | -4 | 16 |
| 26 | S26 | 50 | 74 | -24 | 576 |
| 27 | S27 | 60 | 92 | -32 | 1024 |
| 28 | S28 | 62 | 60 | 2 | 4 |
| 29 | S29 | 58 | 64 | -6 | 36 |
| 30 | S30 | 54 | 86 | -32 | 1024 |
| total | | 1728 | 2292 | $\sum D = 596$ | $\sum D^2 = 17832$ |

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

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

$$\begin{aligned} SD_D &= \sqrt{\frac{17832}{30} - \left(\frac{596}{30}\right)^2} \\ &= \sqrt{594.4} - (19.866)^2 \\ &= \sqrt{594.4} - 394.657 \\ &= \sqrt{199.743} \\ &= 14.133 \end{aligned}$$

c. Standard Error

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

$$\begin{aligned} SE_{MD} &= \frac{14.133}{\sqrt{30-1}} \\ &= \frac{14.133}{5.4} = 2.617 \end{aligned}$$

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

$$\begin{aligned} t_0 &= \frac{M_D}{SE_{MD}} \\ t_0 &= \frac{28.307}{2.617} = 10.816 \end{aligned}$$

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

$$\begin{aligned}
 df &= (N - 1) \\
 &= (30 - 1) \\
 &= 29
 \end{aligned}$$

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 1.12 as follows:

Table 4.8 The Result of T Test Using Manual Calculation

| T Observed | T table | | Df |
|-----------------------|----------------|-----------|-----------|
| | 5% | 1% | |
| <i>10.816</i> | 2.04 | 2.76 | 29 |

Based on the table above, it could be seen that the result of t test using manual calculation is 10.816 and the result of degree of freedom (df) calculation is 29. 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 ($2.04 < 10.816 > 2.76$). It meant H_a was accepted and H_o was rejected. It showed that teaching vocabulary using hot seating technique gave effect toward students' vocabulary score at eleventh grade students of MA Muslimat NU Palangka Raya.

2. Testing 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 4.9 The Calculation Result test of Normality using SPSS 20 of Multiple Choices Test

| Tests of Normality ^{a,b,d,e,f} | | | | | | | |
|---|-----------|---------------------------------|----|------|--------------|----|------|
| | score_pre | Kolmogorov-Smirnov ^c | | | Shapiro-Wilk | | |
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| nama_siswa | 38 | | | | | | |
| | 40 | | | | | | |
| | 42 | ,260 | 2 | . | | | |
| | 44 | ,260 | 2 | . | | | |
| | 46 | ,260 | 2 | . | | | |
| | 50 | ,260 | 2 | . | | | |
| | 54 | ,211 | 4 | . | ,961 | 4 | ,787 |
| | 58 | | | | | | |
| | 60 | ,324 | 3 | . | ,878 | 3 | ,317 |
| | 62 | ,260 | 2 | . | | | |
| | 64 | | | | | | |
| | 66 | ,260 | 2 | . | | | |
| | 68 | ,260 | 2 | . | | | |
| | 70 | ,260 | 2 | . | | | |
| | 72 | | | | | | |
| | 82 | ,260 | 2 | . | | | |

From the Table 4.9 it can be seen that the significance of post-test score in experimental class is 0.787. It can be concluded that the data are normally distributed because $0.787 > 0.05$. Meanwhile, the significance of pre-test score in experimental class is 0.317. Therefore, the data are also normally distributed because $0.317 > 0.05$. In other words, the post-test and pre-test result in experimental class are normally distributed.

3. Testing Homogeneity of 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}

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

$$F_{score} = \frac{82}{38}$$

$$= 2.157$$

On a 5% with df numerator ($n - 1$) = $30 - 1 = 29$ and df denominator ($n - 1$) = $29 - 1 = 28$, it was found $F_{table} = 2.44$. the result showed that $F_{score} \leq F_{table}$, or $2.157 \leq 2.44$ it can be concluded the variance was homogeneous.

b. The Result Homogeneity of Post test

$$F_{score} = \frac{96}{48}$$

$$= 2$$

On a 5% with df numerator ($n - 1$) = $30 - 1 = 29$ and df denominator ($n - 1$) = $29 - 1 = 28$, it was found $F_{table} = 2.44$. the result showed that $F_{score} \leq F_{table}$, or $2 \leq 2.44$ it can be concluded the variance was homogeneous.

Table 4.10 The Calculation of Sample correlations of Pre-test and Post-test using SPSS 20

| Paired Samples Correlations | | | | |
|-----------------------------|------------------------|----|-------------|------|
| | | N | Correlation | Sig. |
| Pair 1 | score_pre & score_post | 30 | ,223 | ,237 |

From the Table 4.10 the numbers of students pre-test and posttest of experimental class were 30 participants have correlation of 0.223. Based on this correlation, the pretest and posttest scores have a high positive correlation.

Table 4.11 The Calculation of T Test using SPSS 20

| 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 | score_pre - score_post | -18,800 | 15,788 | 2,883 | -24,695 | -12,905 | -6,522 | 29 | ,000 |

From the table 4.11, it is showed that the significance (2-tailed) or p-value is 0.000 which is lower than α ($0.001 < 0.05$). The t-value obtained from this table is -6.522. The lower value in this table is -24.695 and the upper value is -12.905, while p-value is 0.000 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 hot seating technique gave effect on vocabulary size at the eleventh grade students at MA Muslimat NU Palangka Raya. It could be seen from the students who were taught using hot seating technique got higher score. It proved by the students' post test result in which most of their score were improved. The finding was suitable with Anwar Harif Styawan in chapter II page 10 states that, Result of his study showed that the result of pre test and post test were different. The result of post test is better than that of pre test. That is the mean score of pre test in cycle I is 55,7, the mean

score of pre test in cycle II is 57, 18, the mean score of pos test in cycle I is 80, 7, and the mean score of pos test in cycle II is 7, 1.

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 ($2.04 < 10.816 > 2.76$). It meant H_a was accepted and H_o was rejected. This finding indicated that the alternative hypothesis (H_a) stating that using hot seating technique gave effect to students' vocabulary size at the eleventh grade students at MA Muslimat NU Palangsa Raya was accepted. In other words, the null hypothesis (H_o) stating that using hot seating technique did not gave effect to students' vocabulary size at the eleventh grade students at MA Muslimat NU Palangka Raya was rejected.

There were some reasons why using hot seating technique gave effect on vocabulary size at the eleventh grade students at MA Muslimat NU Palangsa Raya. First, hot seating technique increased the students' score. It could be seen from score of mean between pre test and post test of experimental class. The score of mean in post test was higher than the score of mean in pre test (Post test = 76.40 > pre test = 56.60). It is indicated that the students' score increased after was conducted treatment. It supported the previous study by Anwar Harif Styawan in chapter II page 10 states that, Result of his study showed that the result of pre test and post test were different. The result of post test is better than that of pre test. That is the mean score of pre test in cycle I is 55, 7, the mean score of pre test in cycle II is 57, 18, the mean score of pos test in cycle I is 80, 7, and the mean score of pos test in cycle II is 7, 1.

Second, hot seating technique could improve the students' understand and memorize. It supported by Koprowski in chapter II page 24 stated that, that who list this game as one of the games from ten games that can be used for recycling vocabulary. Thus, this game is really appropriate to help the students in recycling their vocabulary.

Third, during the implementation of hot seating technique in teaching and learning process, when the teacher began learning process used hot seating the students were enjoy and interested in learning. It supported by Robertson in chapter II page 33 stated that, hot seat game is a game which has aim for the students in the terms to describe the word, using synonym, antonyms, definitions.

fourth, based on a video of the learning process, that the students were interested and excited to the teaching learning process hot seating technique. it was made the students were memorize the vocabularies easier. It supported by Hyman in chapter II page 24 stated that, It creates interest and motivate participation in a class.