

## **CHAPTER IV**

### **RESULT OF THE STUDY**

This chapter covers description of the data, test of normality and homogeneity, result of the data analyses and discussion.

#### **A. Data Presentation**

In this section, it would be described the obtained data of the students' writing Score after and before taught by using Clustering technique. The presented data consisted of Mean, Median, Modus, Standard Deviation, Standard Error, and the figure.

##### **1. The Result of Pretest Score**

The students' score could be distributed by the following table in order to analyze the students' mastery before conducting the treatment.

**Tabel 4.1 The Description Data of Students' Pretest Score**

| NO | CODE | SCORE |
|----|------|-------|
| 01 | E01  | 71    |
| 02 | E02  | 69    |
| 03 | E02  | 71    |
| 04 | E04  | 67    |
| 05 | E05  | 68    |
| 06 | E06  | 70    |
| 07 | E07  | 67    |
| 08 | E08  | 70    |
| 09 | E09  | 79    |
| 10 | E10  | 65    |
| 11 | E11  | 65    |

|    |     |    |
|----|-----|----|
| 12 | E12 | 67 |
| 13 | E13 | 69 |
| 14 | E14 | 68 |

Based on the data above, it was known the highest score was 79 and the lowest score was 65. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

$$\begin{aligned}
 \text{The Range of Score (R)} &= H - L + 1 \\
 &= 79 - 65 + 1 \\
 &= 15
 \end{aligned}$$

$$\begin{aligned}
 \text{The Class Interval (K)} &= 1 + (3.3) \times \text{Log } n \\
 &= 1 + (3.3) \times \text{Log } 14 \\
 &= 1 + 1.1146 \\
 &= 4.67818
 \end{aligned}$$

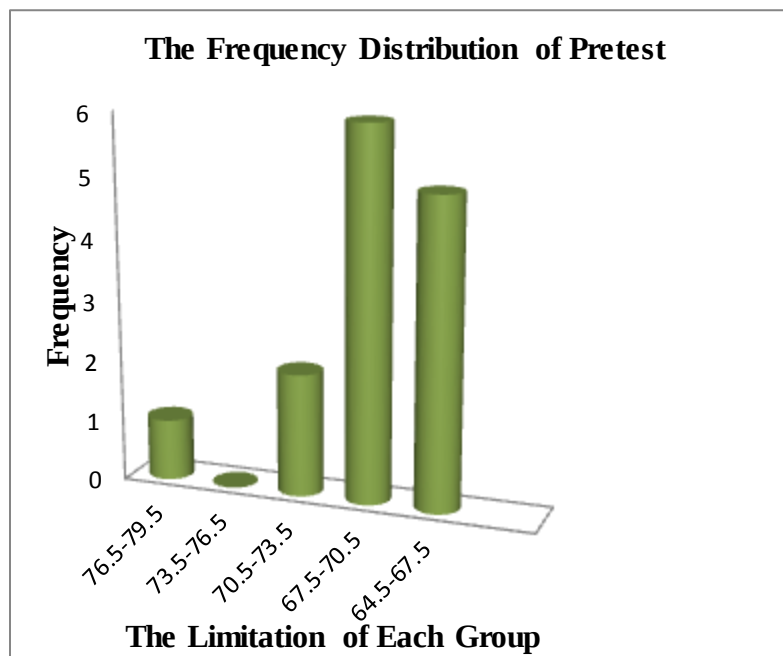
$$\text{Interval of Temporary (i)} = \frac{k}{r} = \frac{15}{5} = 3$$

So, the range of score was 15, the class interval was 4 or 5, and interval of temporary was 3. Then, it was presented using frequency distribution in the following table:

**Table 4.2 Frequency Distribution of the Pretest Score**

| Class (k) | Interval (I) | Frequency (F) | Mid-points (x) | The Limitation of each group | Frequency Relative (%) | Frequency Cumulative (%) |
|-----------|--------------|---------------|----------------|------------------------------|------------------------|--------------------------|
| 1         | 77-79        | 1             | 76             | 76.5-79.5                    | 7.143                  | 100                      |
| 2         | 74-76        | 0             | 75             | 73.5-76.5                    | 0                      | 0                        |
| 3         | 71-73        | 2             | 72             | 70.5-73.5                    | 14.28                  | 92.86                    |
| 4         | 68-70        | 6             | 69             | 67.5-70.5                    | 42.86                  | 78.58                    |
| 5         | 65-67        | 5             | 66             | 64.5-67.5                    | 35.72                  | 35.72                    |
|           |              | $\Sigma F=14$ |                |                              | $\Sigma P=100$         |                          |

The distribution of students' pretest score can also be seen in the following figure.

**Figure 4.1 The distribution of students' predicate in pretest score**

It can be seen from the figure above about the students' pretest score. There was a student who got score between 76.5-79.5. There were two students who got

score between 70.5-73.5. There were six students who got score between 67.5-70.5.

There were five students who got score between 64.5-67.5.

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

**Table 4.3 The Table for Calculating Mean, median, and Modus of Pretest Score**

| Interval (I) | Frequency (F) | X  | FX            | Fka | Fkb |
|--------------|---------------|----|---------------|-----|-----|
| 75-79        | 1             | 76 | 76            | 1   | 14  |
| 74-76        | 0             | 75 | 0             | 1   | 13  |
| 71-73        | 2             | 72 | 144           | 3   | 13  |
| 68-70        | 6             | 69 | 414           | 9   | 11  |
| 65-67        | 5             | 66 | 330           | 14  | 5   |
|              | $\sum F=14$   |    | $\sum FX=964$ |     |     |

**a) Calculating Mean**

$$\begin{aligned}
 M_x &= \frac{\sum F X_i}{n} \\
 &= \frac{964}{14} = 68.85
 \end{aligned}$$

**b) Median**

$$\begin{aligned}
 Mdn &= u - \left( \frac{\frac{1}{2}N - Fka}{Fi} \right) \times 3 \\
 &= 70.5 - \frac{7-3}{6} \times 3 \\
 &= 68.49
 \end{aligned}$$

**c) Modus**

$$\begin{aligned}
 Mo &= u - \left( \frac{fb}{fa+fb} \right) \times i \\
 &= 70.5 - \left( \frac{5}{2+5} \right) \times 3 \\
 &= 68.36
 \end{aligned}$$

The calculation above showed of mean value was 68.85, median value was 68.49 and modus value was 68.36 of the pretest score.

The third step, the writer tabulated the score of pretest into the table for the calculation of standard deviation and the standard error as followed:

**Table 4.4 The Table of Calculation of the Standard Deviation and the Standard Error of the Pre Test Score**

| Interval<br>(I) | Frequency<br>(F) | (X) | X' | FX'          | FX' <sup>2</sup> |
|-----------------|------------------|-----|----|--------------|------------------|
| 77-79           | 1                | 78  | 3  | 3            | 9                |
| 74-76           | 0                | 75  | 2  | 0            | 0                |
| 71-73           | 2                | 72  | 1  | 2            | 4                |
| 68-70           | 6                | 69  | 0  | 0            | 0                |
| 65-67           | 5                | 66  | -1 | -5           | 5                |
|                 | $\sum F=14$      |     |    | $\sum FX'=0$ | $\sum FX'^2=18$  |

**a) Standard Deviation**

$$\begin{aligned}
 SDx &= \sqrt{\left[ \frac{\sum Fx'^2}{N} \right] - \left[ \frac{(\sum Fx')^2}{N} \right]} \\
 &= \sqrt{\left[ \frac{18}{14} \right] - \left[ \frac{(0)^2}{14} \right]} \\
 &= \sqrt{1.28571428} = 3.40168
 \end{aligned}$$

### b) Standard Error

$$SE_{md} = \frac{S}{\sqrt{N-1}} = \frac{3.40168}{\sqrt{14-1}} = \frac{3.40168}{3.60} = 0.9449$$

After Calculating, it was found that the standard deviation and the standard error of pretest score were 3.40168 and 0.9449

### 2. The Result of Posttest Score

The students' score could be distributed by the following table in order to analyze the students' mastery after conducting the treatment.

**Table 4.5 The Description Data Of Students' Posttest Score**

| NO | CODE | SCORE |
|----|------|-------|
| 1  | E1   | 81    |
| 2  | E2   | 76    |
| 3  | E3   | 80    |
| 4  | E4   | 77    |
| 5  | E5   | 77    |
| 6  | E6   | 80    |
| 7  | E7   | 79    |
| 8  | E8   | 79    |
| 9  | E9   | 86    |
| 10 | E10  | 78    |
| 11 | E11  | 77    |
| 12 | E12  | 75    |
| 13 | E13  | 78    |
| 14 | E14  | 76    |

Based on the data above, it was known the highest score was 86 and the lowest score was 75. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

$$\begin{aligned}\text{The Range of Score (R)} &= H - L + 1 \\ &= 86 - 75 + 1 \\ &= 12\end{aligned}$$

$$\begin{aligned}\text{The Class Interval (K)} &= 1 + (3.3) \times \text{Log } n \\ &= 1 + (3.3) \times \text{Log } 14 \\ &= 1 + 1.1146 \\ &= 4.67818\end{aligned}$$

$$\text{Interval of Temporary (i)} = \frac{k}{r} = \frac{12}{4} = 3$$

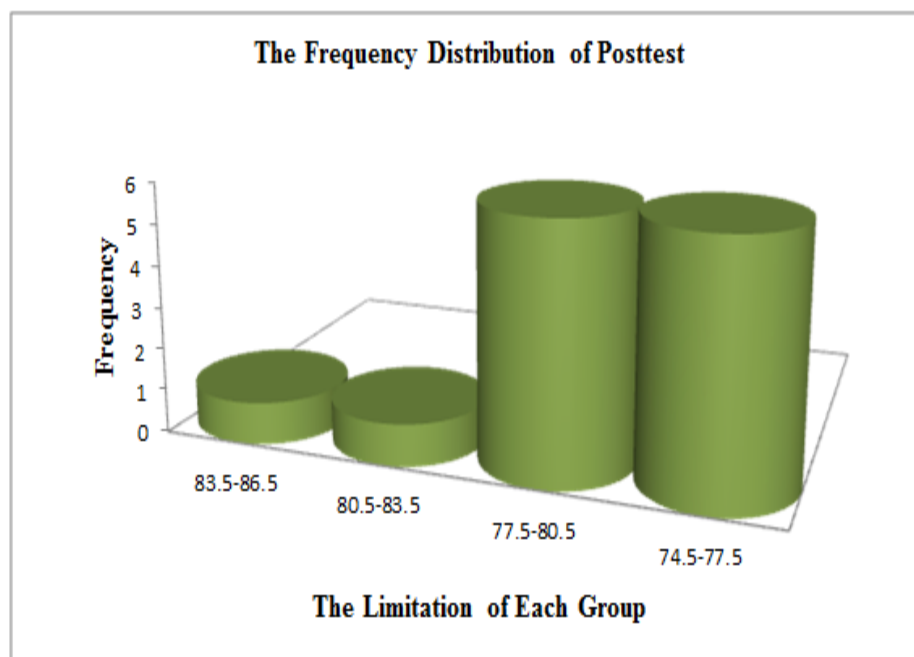
So, the range of score was 12, the class interval was 4 or 5, and interval of temporary was 3. Then, it was presented using frequency distribution in the following table:

**Table 4.6 Frequency Distribution of the Posttest Score**

| Class (K) | Interval (I) | Frequency (F) | Mid-Point (x) | The Limitation of each group | Frequency Relative (%) | Frequency Cumulative (%) |
|-----------|--------------|---------------|---------------|------------------------------|------------------------|--------------------------|
| 1         | 84-86        | 1             | 85            | 83.5-86.5                    | 7.143                  | 100                      |
| 2         | 81-83        | 1             | 82            | 80.5-83.5                    | 7.143                  | 92.857                   |
| 3         | 78-80        | 6             | 79            | 77.5-80.5                    | 42.857                 | 85.714                   |
| 4         | 75-77        | 6             | 76            | 74.5-77.5                    | 42.857                 | 42.857                   |
|           |              | $\Sigma F=14$ |               |                              | $\Sigma P = 100$       |                          |

The distribution of students' posttest score can also be seen in the following figure.

**Figure 4.2 The Distribution of Students' Predicate in Pretest Score**



It can be seen from the figure above about the students' pretest score. There was a student who got score between 83.5-86.5 and 80.5.-83.5. There were six students who got score between 77.5-80.5 and 74.5-77.5.

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

**Table 4.7 The Table for Calculating Mean, median, and Modus of Posttest****Score**

| Interval<br>(I) | Frequency<br>(F) | Mid-<br>Point<br>(x) | FX                 | Fka | Fkb |
|-----------------|------------------|----------------------|--------------------|-----|-----|
| 84-86           | 1                | 85                   | 85                 | 1   | 14  |
| 81-83           | 1                | 82                   | 82                 | 2   | 13  |
| 78-80           | 6                | 79                   | 474                | 8   | 12  |
| 75-77           | 6                | 76                   | 456                | 14  | 6   |
|                 | $\Sigma F = 14$  |                      | $\Sigma FX = 1097$ |     |     |

**a) Mean**

$$M_x = \frac{\sum F X_i}{n} = \frac{1097}{14} = 78.35$$

**b) Median**

$$\begin{aligned}
 M_{dn} &= u - \frac{\frac{1}{2}N - f_{ka}}{f_i} X i \\
 &= 80.5 - \frac{7-2}{6} X 3 \\
 &= 78.01
 \end{aligned}$$

**c) Modus**

$$\begin{aligned}
 M_o &= u - \left( \frac{fb}{fa+fb} \right) x i \\
 &= 80.5 - \left( \frac{6}{1+6} \right) x 3 \\
 &= 77.93
 \end{aligned}$$

The calculation above showed of mean value was 78.35 median value was 78.01 and modus value was 77.93 of the pretest score.

The third step, the writer tabulated the score of posttest into the table for the calculation of standard deviation and the standard error as followed:

**Table 4.8 The Table of Calculation of the Standard Deviation and the Standard Error of the Posttest Score**

| Interval (I) | Frequency (F) | (X) | X' | FX'               | FX', <sup>2</sup>    |
|--------------|---------------|-----|----|-------------------|----------------------|
| 84-86        | 1             | 85  | 2  | 2                 | 4                    |
| 81-83        | 1             | 82  | 1  | 1                 | 1                    |
| 78-80        | 6             | 79  | 0  | 0                 | 0                    |
| 75-77        | 6             | 76  | -1 | -6                | 6                    |
|              | $\Sigma F=14$ |     |    | $\Sigma FX' = -3$ | $\Sigma FX',^2 = 11$ |

**a) Standard Deviation**

$$\begin{aligned}
 SD_x &= \sqrt{\left[ \frac{\sum Fx'^2}{N} \right] - \left[ \frac{(\sum Fx')^2}{N^2} \right]} \\
 &= \sqrt{\left[ \frac{11}{14} \right] - \left[ \frac{(-3)^2}{14^2} \right]} \\
 &= \sqrt{0.78571 - 0.045918} \\
 &= 2.58033
 \end{aligned}$$

**b) Standard Error**

$$SE_{md} = \frac{S}{\sqrt{N-1}} = \frac{2.58033}{\sqrt{14-1}} = \frac{2.58033}{3.60} = 0.7167$$

The result of calculation showed the standard deviation of post test score was 2.58033 and the standard error of post test score was 0.7167.

## B. Testing of Normality and Homogeneity

### 1. Testing normality of post-test

**Table 4.9 Testing normality of post-test**

| Tests of Normality |                                 |    |                   |              |    |      |
|--------------------|---------------------------------|----|-------------------|--------------|----|------|
|                    | Kolmogorov-Smirnov <sup>a</sup> |    |                   | Shapiro-Wilk |    |      |
|                    | Statistic                       | Df | Sig.              | Statistic    | Df | Sig. |
| Score              | .151                            | 14 | .200 <sup>*</sup> | .879         | 14 | .056 |

The table showed the result of test normality calculation using SPSS 21.0 program. To know the normality of data, the formula could be seen as follows:

If the number of sample.  $> 50$  = Kolmogorov-Smirnov

If the number of sample.  $< 50$  = Shapiro-Wilk

Based on the number of data the writer was  $14 < 50$ , so to analyzed normality data was used Shapiro-Wilk. The next step, the writer analyzed normality of data used formula as follows:

If Significance  $> 0.05$  = data is normal distribution

If Significance  $< 0.05$  = data is not normal distribution

Based on data above, significant data of experiment and control group used Shapiro-Wilk was  $0.056 > 0.05$ . It could be concluded that the data was normal distribution.

### 2. Testing Homogeneity of posttest

**Table 4.10 Testing Homogeneity of posttest**

**Test of Homogeneity of Variances**

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| .786             | 1   | 26  | .383 |

The table showed the result of Homogeneity test calculation using SPSS 21.0 program. To know the Homogeneity of data, the formula could be seen as follows:

If  $0,05 > \text{sig.} = \text{Not Homogeny distribution}$

If  $0,05 < \text{sig} = \text{Homogeny distribution}$

Based on data above, significant data was 0,383. The result was  $0,05 < 0,383$ , it meant the t-test calculation used at the equal variances assumed or data was Homogeny distribution.

### C. The Result of Data Analysis

#### 1. Testing Hypothesis Using Manual Calculation

**Table 4.11 Mean and the Standard Error of Posttest**

| Group    | Mean  | Standard Deviation |
|----------|-------|--------------------|
| Posttest | 78.35 | 2.58033            |

The table showed the result of the mean calculation of posttest group was 78.35 and the result of standard error was 2.58033. To examine the hypothesis, the writer used the formula as follow:

$$\begin{aligned}
 t_o &= \frac{x - \mu}{SE / \sqrt{n}} \\
 &= \frac{78.35 - 75}{2.58033 / \sqrt{14}} \\
 &= 4.862
 \end{aligned}$$

$$df = (N - 1)$$

$$= 14-1$$

$$= 13$$

a. Interpretation

The result of t – test was interpreted on the result of degree of freedom to get the  $t_{table}$ . The result of degree of freedom (df) was 13. The following table was the result of  $t_{observed}$  and  $t_{table}$  from 13 df at 5% and 1% significance level.

**Table 4.12 The Result of T-Test Using Manual Calculation**

| $t_{observe}$ | $t_{table}$ |            | Df |
|---------------|-------------|------------|----|
|               | 5 % (0,05)  | 1 % (0,01) |    |
| 4.862         | 2.160       | 3.012      | 13 |

The interpretation of the result of t-test using manual calculation, it was found the  $t_{observed}$  was higher than the  $t_{table}$  at 5% and 1% significance level or  $2.160 < 4.862 > 3.012$ . It meant  $H_a$  was accepted and  $H_o$  was rejected. It could be interpreted based on the result of calculation that  $H_a$  stating that Clustering technique was effective for Teaching writing recount text of the tenth grade students at MA Raudhatul Jannah Palangka Raya was accepted and  $H_o$  stating that Clustering technique was not effective for Teaching writing recount text of the tenth grade students at MA Raudhatul Jannah Palangka Raya was rejected. It meant that teaching writing with Clustering technique toward writing recount text of the tenth grade students at MA Raudhatul Jannah Palangka Raya gave significant effect at 5% and 1% significance level.

## 2. Testing Hypothesis Using SPSS 21.0 Program

The writer also applied SPSS 21.0 program to calculate  $t_{\text{test}}$  in testing hypothesis of the study. The result of  $t_{\text{test}}$  using SPSS 21.0 was used to support the manual calculation of  $t_{\text{test}}$ . The result of  $t_{\text{test}}$  using SPSS 21.0 program could be seen as follows:

**Table 4.12 Testing  $T_{\text{test}}$  of Posttest**

| One-Sample Test |                 |    |                 |                 |                                           |        |
|-----------------|-----------------|----|-----------------|-----------------|-------------------------------------------|--------|
|                 | Test Value = 75 |    |                 |                 |                                           |        |
|                 | T               | Df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |        |
|                 |                 |    |                 |                 | Lower                                     | Upper  |
| Posttest        | 4.734           | 13 | .000            | 3.50000         | 1.9026                                    | 5.0974 |

The table showed the result of  $t_{\text{test}}$  calculation using SPSS 21.0 program. To know the variances score of data, the formula could be seen as follows:

If  $0,05 < \text{Sig.} = H_a$  not assumed

If  $0,05 > \text{Sig.} = H_o$  assumed

### a. Interpretation

The result of  $t$  – test was interpreted on the result of degree of freedom to get the  $t_{\text{table}}$ . The result of degree of freedom (df) was 13. The following table was the result of  $t_{\text{observed}}$  and  $t_{\text{table}}$  from 13 df at 5% and 1% significance level.

**Table 4.13 The Result of T-Test Using SPSS 21.0 Program**

| $t_{\text{observe}}$ | $t_{\text{table}}$ |            | Df |
|----------------------|--------------------|------------|----|
|                      | 5 % (0,05)         | 1 % (0,01) |    |
| 4.734                | 2.160              | 3.012      | 13 |

The interpretation of the result of t-test using SPSS 21.0 program, it was found the  $t_{\text{observed}}$  was higher than the  $t_{\text{table}}$  at 5% and 1% significance level or  $2.160 < 4.734 > 3.012$ . It meant  $H_a$  was accepted and  $H_o$  was rejected. It could be interpreted based on the result of calculation that  $H_a$  stating that clustering technique was effective for teaching writing recount text of the tenth grade students at MA Raudhatul Jannah Palangka Raya was accepted and  $H_o$  stating that clustering technique was not effective for teaching writing recount text of the tenth grade students at MA Raudhatul Jannah Palangka Raya was rejected. It meant that teaching writing with clustering technique toward writing recount text for the tenth grade students at MA Raudhatul Jannah Palangka Raya gave significant effect at 5% and 1% significance level.

#### **D. Discussion**

The result of analysis showed that there was significant effect of clustering technique toward student's writing ability of the tenth grade students at MA Raudhatul Jannah Palangka Raya. The students who were taught used clustering technique reached higher score than those who were taught without used Clustering technique.

Meanwhile, after the data was calculated using manual calculation of  $t_{test}$ . It was found the  $t_{observed}$  was higher than the  $t_{table}$  at 5% and 1% significance level or  $2.160 < 4.862 > 3.012$ . It meant  $H_a$  was accepted and  $H_o$  was rejected. And the data calculated using SPSS 21.0 program, it was found the  $t_{observed}$  was higher than the  $t_{table}$  at 5% and 1% significance level or  $2.160 < 4.734 > 3.012$ . It meant  $H_a$  was accepted and  $H_o$  was rejected. This finding indicated that the alternative hypothesis ( $H_a$ ) stating that there is significant effect of clustering technique toward the students' score in writing recount text was accepted. On the contrary, the Null hypothesis ( $H_o$ ) stating that there is no significant effect of clustering technique toward the students' score in writing recount text was rejected. Based on the result the data analysis showed that using clustering technique gave significance effect for the students' writing scores of tenth grade students at MA Raudhatul Jannah Palangka Raya.

The statically finding was suitable with the theories as stated in chapter II. First, based on teaching learning process, clustering technique can encourage the students to expand their thinking and helps the students to narrow the broad ideas. The finding was suitable with John Langan statement. According to him that clustering also known as diagramming, or mapping, is another strategy that can be used to generate material for a paper.

The last, the students can explore many ideas from mind. It a good way to develop idea before starting writing activity. The students can do it on their own with friends or classmate to try finding inspiration or idea. This finding was related to Jerry who stating that clustering is using a key word placed in the center of a page (or

board), a student's (or teacher) jots down all the free associations students give related to the word, clustering similar words.

Those are some reason why using clustering technique gave significance effect for the students' writing scores of tenth grade students at MA Raudhatul Jannah Palangka Raya. Based on the theories and the writer's result, clustering technique gave significance effect for the students' writing scores of tenth grade students at MA Raudhatul Jannah Palangka Raya.