CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

A. Data Presentation

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

1. Description of Pre Test Scores of the Experimental Group

The highest scores of experimental group was 57 and the student's lowest score was 13. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:
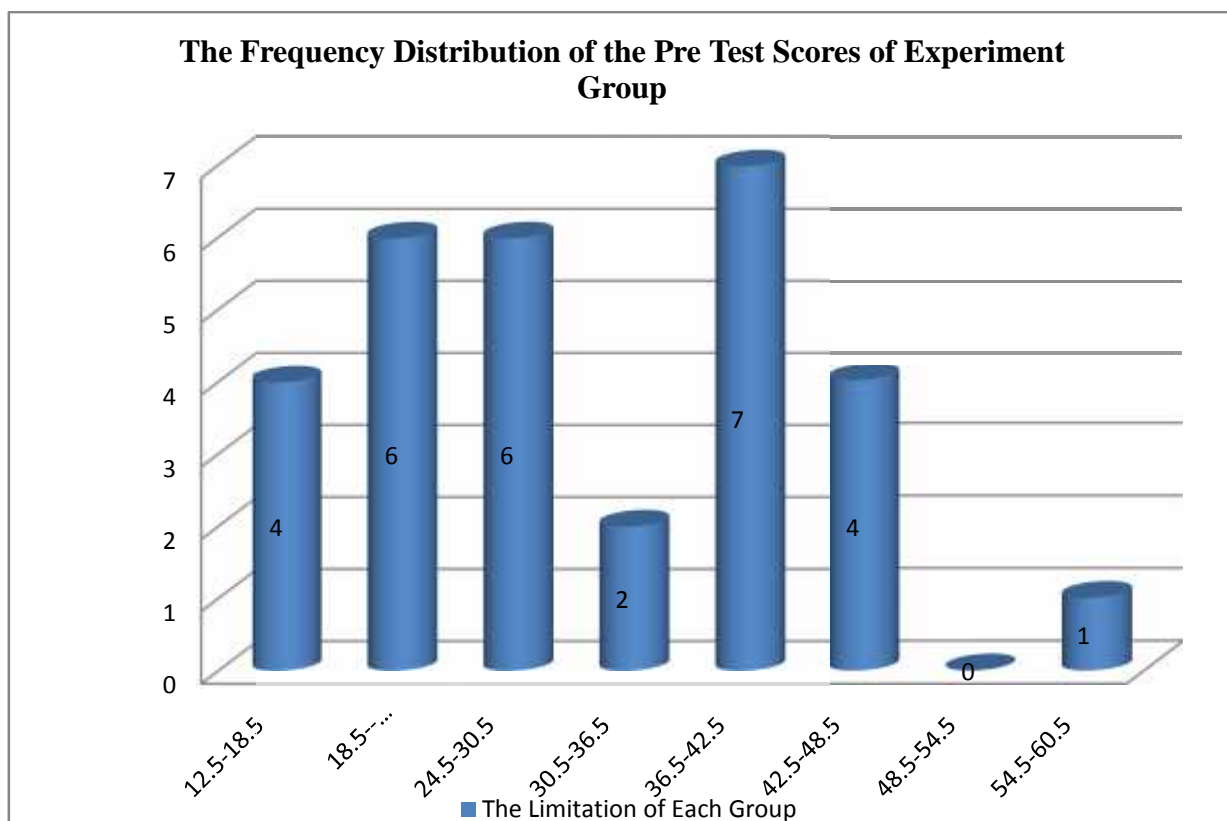
The Highest Score (H) = 57

The lowest Score (L)   = 13

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

So, the range of score was 45, the class interval was 6, and interval of temporary was 7,5. Then, it was presented using frequency distribution. It can be seen at appendix.

Figure 4.1. The Frequency Distribution of the Pre Test Score of the Experiment Group

The figure above showed the pre test score of students in experiment group. It could be seen that there were 2 students who got score 30,5-36,5. There were 1 students who got score 54,5-60,5. There were 0 students who got score 48,5-54,5. There were 4 students who got score 42,5-48,5. There where 4 student who got score 12,5-18,5. There were 6 students who got score 18,5-24,5. There were 6 students who got score 24.5-30.5. And there was 7 students who got score 36.5-42.5.

The next step, the writer tabulated the scores into the table for the calculation of mean, median, and modus. It can be seen at appendix.

The calculation data showed of mean value was 31.3, median value was 33, 98 and modus value was 40.52 of the pre test of the experiment group. The last step, the writer tabulated the scores of pre test of experiment group into the table for the calculation of standard deviation and the standard error.

The result of calculation showed the standard deviation of pre test score of experiment group was 9.192 and the standard error of pre test score of experiment group was 1.706. For the detail explanation, it can be seen at appendix.

2. Description of Pre Test Scores of the Control Group

The highest scores of control group was 67 and the student's lowest score was 17. To determine the range of score, the class interval, and interval of temporary, the writer calculated using formula as follows:

The higherst score (H) = 67
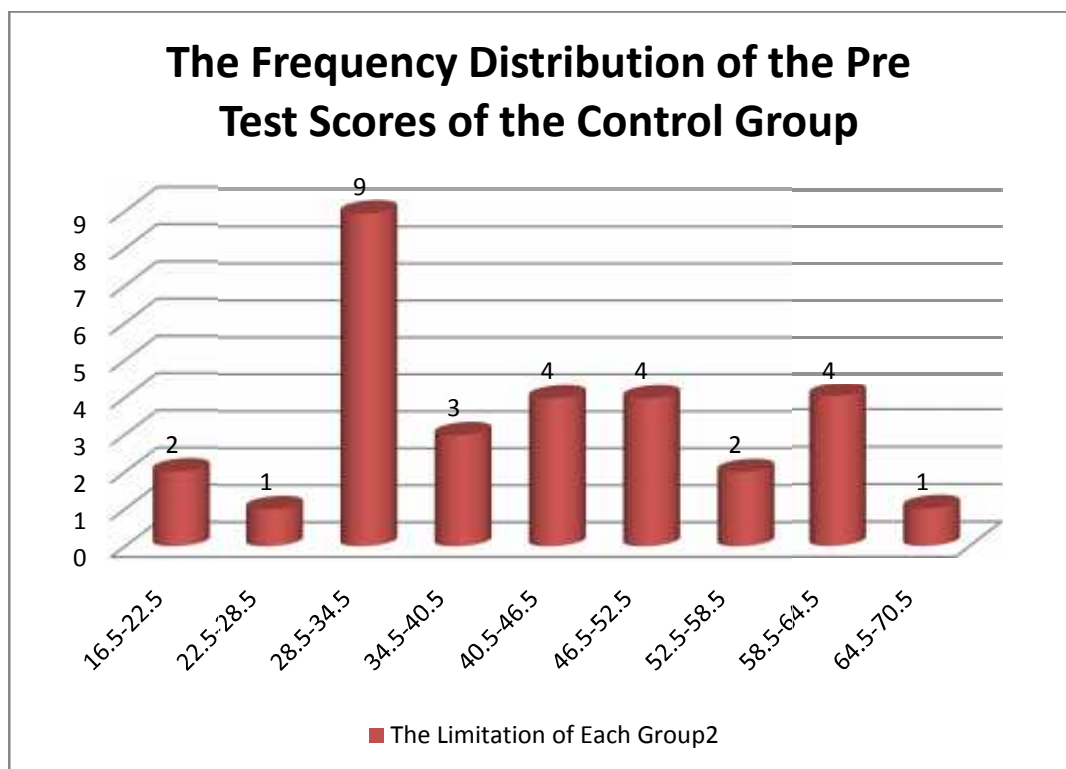
The Lowest Score (L)   = 17

The Range of Score (R) = H – L + 1

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

Interval of Temporary (I)$=\dfrac{R}{K}$

So, the range of score was 51, the class interval was 6, and interval of temporary was 9. Then, it was presented using frequency distribution. It can be seen at appendix.

Figure 4.2 The Frequency Distribution of the Pre Test Scores of the Control Group

The figure showed the pre test score of students in control group. It could be seen that there were 1 students who got score 64.5-70.5.

There were 4 students who got score 58.5-64.5. There were 2 students who got score 52.5 – 58.5. There were 4 students who got score 46.5 – 52.5. There were 4 students who got score 40.5 – 46.5. There were 3 students who got score 34.5 – 40.5. There were 9 students who got score 28.5-34.5. there were 1 students who got score 22.5-28.5. and there were 2 students who got score 16.5-22.5.

The next step, the writer tabulated the score into the table for the calculation of mean, median, and modus. It can be seen at appendix.

The calculation data showed of mean value was 45.9, median value was 40.5, and modus value was 43.92 of the pre test of the control group.

The last step, the writer tabulated the scores of pre test of control group into the table for the calculation of standard deviation and the standard error. The result of calculation showed the standard deviation of pre test score of control group was 14.611 and the standard error of pre test score of control group was 2.713. For the detail explanation, it can be seen at appendix.

3. **Description of Post Test Scores of the Experiment Group**

The post test scores of the experiment group was the student's highest score was 97 and the student's lowest score was 50.

So, the range of score was 48, the class interval was 6, and interval of temporary was 8. Then, it was presented using frequency distribution. It can be seen at appendix.

Figure 4.3 The Frequency Distribution of the Post Test Scores of the Experiment Group
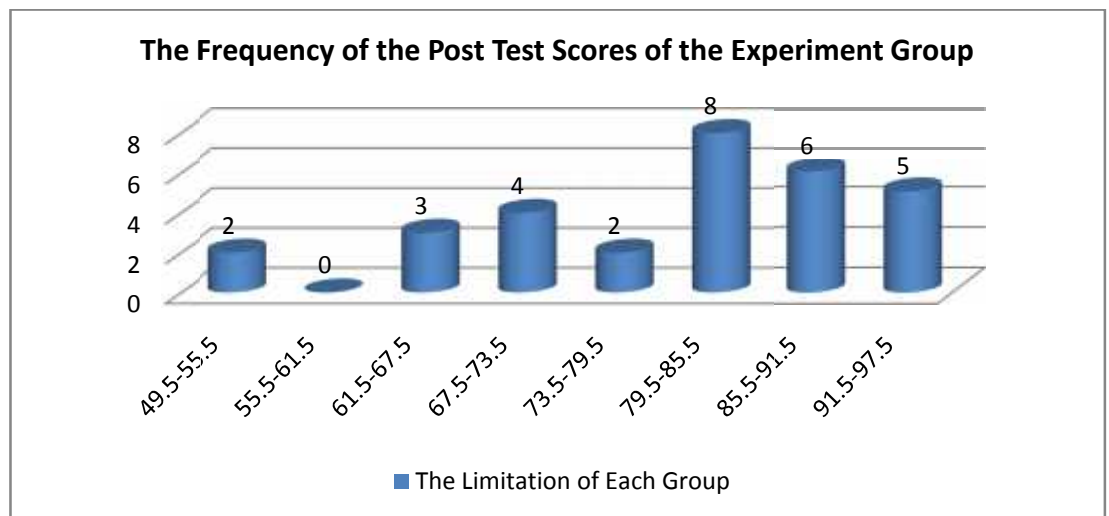
The table and figure above showed the post test score of students in experiment group. It could be seen that there were 2 students who got score 49.5-55.5. There were 0 students who got score 55.5 – 61.5. There were 3 students who got score 61.5 – 67.5. There were 4 students who got score 67.5 – 73.5. There were 2 students who got score 73.5 – 79.5. There were 8 students who got score 79.5 – 85.5. there were 6 students who got score 85.5-91.5. and there were 5 students who got score 91.5-97.5.

The next step, the writer tabulated the score into the table for the calculation of mean, median, and modus. It can be seen at appendix.

The calculation data showed of mean value was 79.9, median value was 91.5, and modus value was 77.52 of the post test of the experiment group. The last step, the writer tabulated the scores of post test of the experiment group into the table for the calculation of standard deviation and the standard error. The result of calculation showed the standard deviation of post test score of experiment group was 11.960 and the standard error of post test score of experiment group was 2.184. For the detail explanation, it can be seen at appendix.

4. **Description of Post Test Scores of the Control Group**

The post test scores of the control group was the students got highest score was 83 and the students got lowest score was 30. The writer calculated using formula as follows:

The Range of Score (R)= H − L + 1

The Class Interval (K) $= 1 + (3.3) \times \text{Log n}$

Interval of Temporary (I) $= \frac{R}{K}$

So, the range of score was 54, the class interval was 6, and interval of temporary was 9. Then, it was presented using frequency distribution. It can be seen at appendix.

Figure 4.4 The Frequency Distribution of the Post Test Scores of the Control Group

The Frequency Distribution of the Post Test Scores of the Control Group
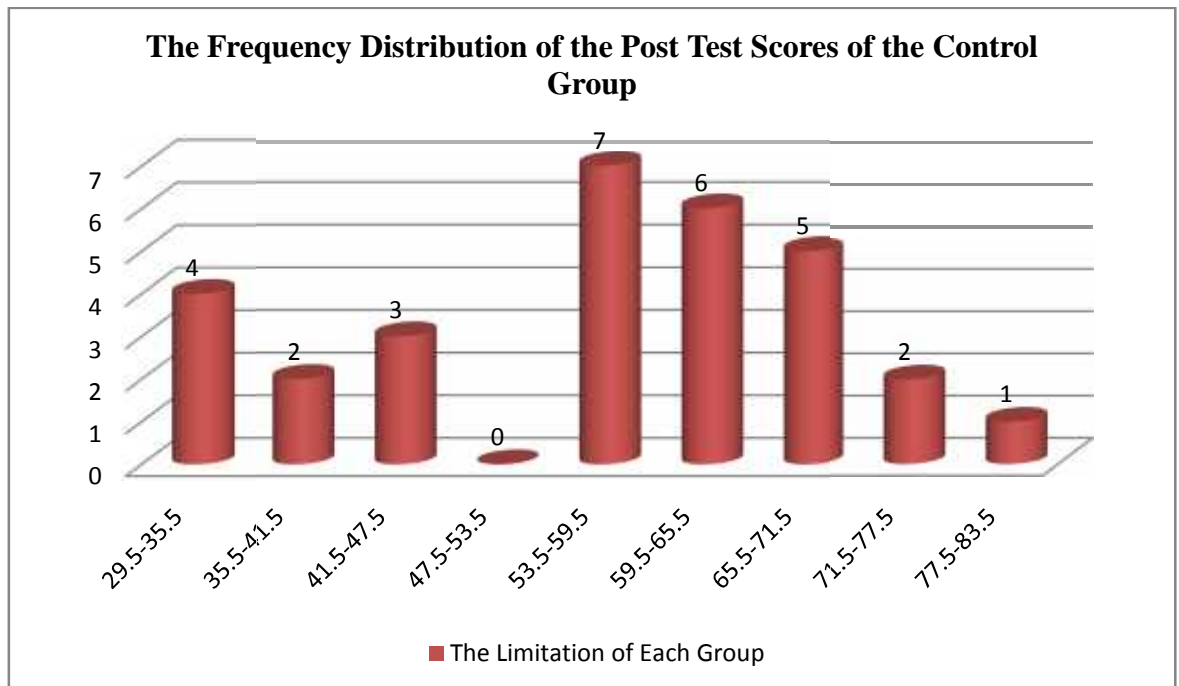
The figure showed the post test score of students in control group. It could be seen that there were 4 students who got score 29.5 – 35.5. There were 2 students who got score 35.5 – 41.5. There were 3 students who got score 41.5 – 47.5. There were 0 students who got score 47.5 – 53.5. There were 7 students who got score 53.5 – 59.5. There were 6 student who got score 59.5 – 65.5. there were 5 students who got score 65.5-71.5. There were 2 students who got score 71.5-77.5. and there was 1 students who got score 77.5-83.5.

The next step, the writer tabulated the score into the table for the calculation of mean, median, and modus as. The calculation data showed of mean value was 56.1, median value was 8.5, and modus value was 89.5 of the post test of the control group. The last step, the writer tabulated the scores of pre test of control group into the table

for the calculation of standard deviation and the standard error. It can be seen at appendix.

The result of calculation showed the standard deviation of post test score of control group was 14.287 and the standard error of post test score of control group was 4.20. For the detail explanation, it can be seen at appendix.

B. The Result of Data Analysis

1. Testing Hyphothesis Using Manual Calculation

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

Table 4.5 The Standard Deviation and the Standard Error of X_1 and X_2

Variables	The Standard Deviation	The Standard Error
X_1	11.960	2.184
X_2	14.287	4.20

Where :

X$_1$ = Experiment Group

X$_2$ = Control Group

The table showed the result of the standard deviation calculation of X$_1$ was 11.960 and the result of the standard error mean calculation was 2.184. The result of the standard deviation calculation of X$_2$ was 14.287 and the result of the standard error mean calculation was 4.20.

Then, it was inserted to the t$_o$ formula to get the value of t observe as follows:

$$t_o = \frac{M_x - M_y}{\sqrt{\left(\frac{SD_x}{\sqrt{N-1}}\right)^2 + \left(\frac{SD_y}{\sqrt{N-1}}\right)^2}}$$

With the criteria:

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

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

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

df $= \left(N_x + N_y\right) - 2$

t_{table} at df 58 at 5% significant level = 2.00

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

Table 4.6 The Result of T-test

Variables	$T_{observed}$	T table		Df/Db
		5%	1%	
X_1-X_2	7.153	2.00	2.65	58

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 $To_{bserved}$ was greater than the value of t_{able} at 1% and 5% significance level or 2.00<7.153>2.65. It means H_a was accepted and $H_o$was rejected.

It could be interpreted based on the result of calculation that H_a stating that Mnemonic technique gave effect on the students vocabulary recall score was accepted and $H_o$stating that without mnemonic technique does not give effect on the students' vocabulary

score was rejected. It means that teaching vocabulary using Mnemonic technique gave significant effect on the students' vocabulary score of the tenth grade students at SMAN 3 Palangka Raya.

2. Testing Hypothesis Using SPSS Program

The writer also applied SPSS 16.0 program to calculate t test in testing hypothesis of the study. The result of the t test using SPSS 16.0 was used to support the manual calculation of the t test. The result of the test using SPSS 16.0 program could be seen at appendix.

The result of the standard deviation calculation of X_1 was 11.960 and the result of the standard error mean calculation was 2.184. The result of the standard deviation calculation of X_2 was 14.287 and the standard error mean calculation was 4.20.

The result of t-test calculation using SPSS 16.0 program. Since the result of post-test between experimental and control group had difference score of variance, it meant the t-test calculation used at the equal variances not assumed. It found that the result of $t_{observed}$ was 7.153, the result of mean difference between experimental and control group was 24.333 and the standard error difference between experimental and control group was 3.402.

3. Discussion

In teaching learning process, Mnemonic technique on vocabulary is a tool using by the teacher to teach the students. Mnemonic technique can help the student to memorize of vocabulary. From the result of analysis, it can be seen from the score of students using mnemonic technique giving positive effects for students vocabulary recall. It meant mnemonic technique effective to memorizing ability.

The result of data analysis showed that the effect of mnemonic technique on vocabulary recall of the tenth grade students of SMAN 3 Palangka Raya. It can be seen first from the means score between Pre-test and Post-test. The mean score of Posttest reached higher score than the mean score of Pretest (X= 91.5< Y=40.52). It indicated that the students' score increased after conducting treatment. In other words, mnemonic technique gave significant effect to the students' on vocabulary recall.

Meanwhile, after the data was calculated using the t_{test} formula using manual calculation showed that the $t_{observed}$ was 7.153 By comparing the $t_{observed}$ with the t_{table}, it was found that the $t_{observed}$ was higher than t_{table} at 5% level significance or $t_{observed} = 7.153 > t_{table} = 2.00$.

Those statistical findings were suitable with the theories about many different techniques have been used to enhance memory, one of

the most prevalent of these techniques, known as mnemonics, was the method of loci in chapter II p. 29 as mentioned before. Mnemonic technique has been noted that this technique was influence to the students memorize ability on vocabulary. It may helps the teacher to vary and organize the lesson, in order to keep classes interesting and motivating for the students.

Moreover, the students can improve their memory, when they are doing something before and how they remember it. Mnemonic technique can be effective and can make the students motivated and the classroom more interesting. It is in line with theory about the importance of mnemonic technique. First, it shows the student their ability to learn and remember large amounts of information. Second, mnemonic technique are interesting and easy to learn methods for improving one's memory in chapter II p. 29.

There are reasons why mnemonic technique gives effect on vocabulary score of the tenth grade students of SMAN 3 Palangka Raya. By mnemonic technique, the students was influenced to memorize ability on vocabulary and its effective in classroom setting. Second, mnemonic technique was an interesting technique for the students because it was a new technique for the students of SMAN 3 Palangkaraya. It shows from the students' response that they were very enthusiastic when they were taught by mnemonic technique. And

the last, by using mnemonic technique, they will got an easy and more

enjoy way to improve their vocabulary in English.