

## CHAPTER IV

### RESULT OF THE STUDY AND DISCUSSION

In this chapter, the writer presented the data which had been collected from the research in the field of study. The data were the result of observation, the result of pre-test post-test of experiment and control group, the result of data analysis and discussion.

#### A. The Result of Pre-test – Post-test of Experiment Group and Control Group.

In this section it would be describe the obtained data of improvement the students' vocabulary scores before and after taught by using Contextual Teaching and Learning. The presented data consisted of mean, median, modus, standard deviation, standard error, and the figure.

1. Distribution of pre-test score of the experiment group. The test scores of experimental group were presented in the following table.

**Table 4.1 The Description of Pre-test Score of the Data Achieved by Students in Experimental Group.**

| CODE | SCORE<br>(X) |
|------|--------------|
| C1   | 60           |
| C2   | 58           |
| C3   | 38           |
| C4   | 30           |
| C5   | 70           |
| C6   | 60           |
| C7   | 60           |

|     |    |
|-----|----|
| C8  | 76 |
| C9  | 68 |
| C10 | 53 |
| C11 | 43 |
| C12 | 40 |

Based on the data above, it can be seen that the students highest score was 76 and the students lowest score was 30. However, based on the standard evaluation vocabulary subject, there were 9 students who failed since they got fewer than 65. It mean that most students still did not master about vocabulary.

**Table 4.2 The Frequency Distribution of Pre-test Score of the Experimental Class**

| NO    | SCORE<br>(X) | FREKUENSI<br>(F) | FX  |
|-------|--------------|------------------|-----|
| 1     | 76           | 1                | 76  |
| 2     | 70           | 1                | 70  |
| 3     | 68           | 1                | 68  |
| 4     | 60           | 3                | 180 |
| 5     | 58           | 1                | 58  |
| 6     | 53           | 1                | 53  |
| 7     | 43           | 1                | 43  |
| 8     | 40           | 1                | 40  |
| 9     | 38           | 1                | 38  |
| 10    | 30           | 1                | 30  |
| TOTAL |              | N = 12           | 656 |

The distribution of students' pre-test scores can also be seen in the following figure of diagram.

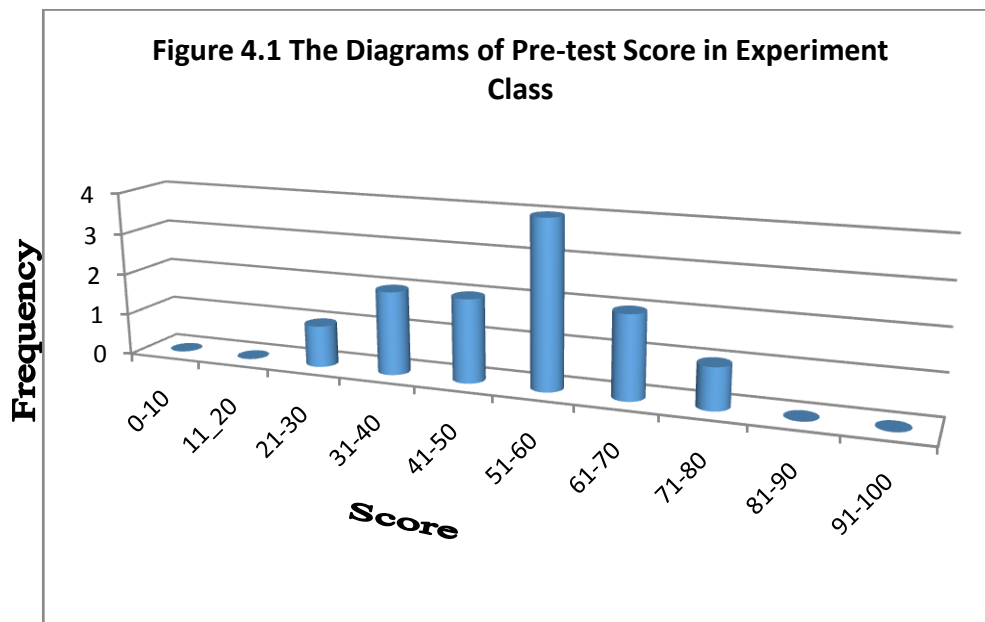


Figure 4.1 diagram of frequency distribution of pre-test scores for experimental class.

The table and figure above showed the students' pre-test score of the experimental group. It could be seen that there was three students who got score 60, one student who got score 58, one student who got score 38, one student who got score 30, one student who got score 70, one student who got score 76, one student who got score 68, one student who got score 53, one student who got score 43, one student who got score 40. In this case, many students got score under 65

The next step, writer tabulated the score into the table for calculation mean as follows.

**Table 4.3 The Table for Calculating Mean of Pre-test Scores for Experimental Class.**

| NO    | SCORE<br>(X) | FREKUENSI<br>(F) | FX              | FKb | FKa |
|-------|--------------|------------------|-----------------|-----|-----|
| 1     | 76           | 1                | 76              | 12  | 1   |
| 2     | 70           | 1                | 70              | 11  | 2   |
| 3     | 68           | 1                | 68              | 10  | 3   |
| 4     | 60           | 3                | 180             | 9   | 6   |
| 5     | 58           | 1                | 58              | 6   | 7   |
| 6     | 53           | 1                | 53              | 5   | 8   |
| 7     | 43           | 1                | 43              | 4   | 9   |
| 8     | 40           | 1                | 40              | 3   | 10  |
| 9     | 38           | 1                | 38              | 2   | 11  |
| 10    | 30           | 1                | 30              | 1   | 12  |
| TOTAL |              | N = 12           | $\sum FX = 656$ |     |     |

a. Mean

$$\begin{aligned}
 M_x &= \frac{\sum FX}{N} \\
 &= \frac{656}{12} \\
 &= 54,666667
 \end{aligned}$$

The calculation about showed of mean was 54, 67

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

**Table 4.4** The Table for Calculating Standard Deviation and Standard Error of Pre-test Scores of Experimental Class.

| NO    | SCORE | FREKUENSI<br>(F) | FX      | X      | X <sup>2</sup> | FX <sup>2</sup>                |
|-------|-------|------------------|---------|--------|----------------|--------------------------------|
| 1     | 76    | 1                | 76      | 21,33  | 455,111        | 455,111                        |
| 2     | 70    | 1                | 70      | 15,33  | 235,111        | 235,111                        |
| 3     | 68    | 1                | 68      | 13,33  | 177,778        | 177,778                        |
| 4     | 60    | 3                | 180     | 5,33   | 28,444         | 85,333                         |
| 5     | 58    | 1                | 58      | 3,33   | 11,111         | 11,111                         |
| 6     | 53    | 1                | 53      | -1,67  | 2,778          | 2,778                          |
| 7     | 43    | 1                | 43      | -11,67 | 136,111        | 136,111                        |
| 8     | 40    | 1                | 40      | -14,67 | 215,111        | 215,111                        |
| 9     | 38    | 1                | 38      | -16,67 | 277,778        | 277,778                        |
| 10    | 30    | 1                | 30      | -24,67 | 608,444        | 608,444                        |
| TOTAL |       | N = 12           | ΣFX=656 |        |                | ΣFX <sup>2</sup> =<br>2204,667 |

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below

a. Standard deviation

$$\begin{aligned}
 SD_D &= \sqrt{\frac{\sum FX^2}{N}} \\
 &= \sqrt{\frac{2204,667}{12}} \\
 &= \sqrt{183,722} \\
 &= 13,5544089 \text{ (13,6)}
 \end{aligned}$$

b. Standard error

$$\begin{aligned}
 SE_{MD} &= \frac{SD_D}{\sqrt{N-1}} \\
 &= \frac{13,5544089}{\sqrt{12-1}} \\
 &= \frac{13,5544089}{\sqrt{11}} \\
 &= \frac{13,5544089}{3,3} \\
 &= 4,086808053 \text{ (4, 1)}
 \end{aligned}$$

The result of calculation showed the standars deviation of pre-test scores of experimental group was 13,6 and the standard error of pre-test scores of experimental group was 4,1.

**Table 4.5 The Table of Calculation of Mean, Standard Deviation, and Standard Error of Mean of Pre-test Scores in Experimental Group Using SPSS 20 Programs.**

| Statistics         |         |        |
|--------------------|---------|--------|
| Experiment         |         |        |
| N                  | Valid   | 12     |
|                    | Missing | 0      |
| Mean               |         | 54.67  |
| Std. Error of Mean |         | 4.087  |
| Median             |         | 59.00  |
| Mode               |         | 60     |
| Std. Deviation     |         | 14.157 |
| Minimum            |         | 30     |

|         |    |
|---------|----|
| Maximum | 76 |
|---------|----|

2. Distribution of Pre-test score of control group

**Table 4.6**The Description of Pre-test Score of the Data Achieved  
by Students in ControlGroup.

| CODE | SCORE(X) |
|------|----------|
| A1   | 33       |
| A2   | 65       |
| A3   | 80       |
| A4   | 74       |
| A5   | 74       |
| A6   | 34       |
| A7   | 54       |
| A8   | 74       |
| A9   | 72       |
| A10  | 46       |
| A11  | 68       |
| A12  | 80       |
| A13  | 80       |
| A14  | 78       |
| A15  | 33       |
| A16  | 65       |
| A17  | 48       |
| A18  | 54       |
| A19  | 45       |
| A20  | 25       |
| A21  | 45       |
| A22  | 45       |
| A23  | 44       |

Based on the data above, it can be seen that the students highest score was 80 and the students lowest score was 25. However, based on the standard evaluation vocabulary subject, there were 12 students who failed since they got fewer than 65. It mean that most students still did not master about vocabulary.

**Table 4.7 The Frequency Distribution of Pre-test Score of The Control Class**

| NO    | SCORE<br>(X) | FREKUENSI<br>(F) | FX                 |
|-------|--------------|------------------|--------------------|
| 1     | 80           | 3                | 240                |
| 2     | 78           | 1                | 78                 |
| 3     | 74           | 3                | 222                |
| 4     | 72           | 1                | 72                 |
| 5     | 68           | 1                | 68                 |
| 6     | 65           | 2                | 130                |
| 7     | 54           | 2                | 108                |
| 8     | 48           | 1                | 48                 |
| 9     | 46           | 1                | 46                 |
| 10    | 45           | 3                | 135                |
| 11    | 44           | 1                | 44                 |
| 12    | 34           | 1                | 34                 |
| 13    | 33           | 2                | 66                 |
| 14    | 25           | 1                | 25                 |
| TOTAL |              | N = 23           | $\Sigma FX = 1316$ |



The distribution of students' pre-test scores can also be seen in the following figure of diagram.

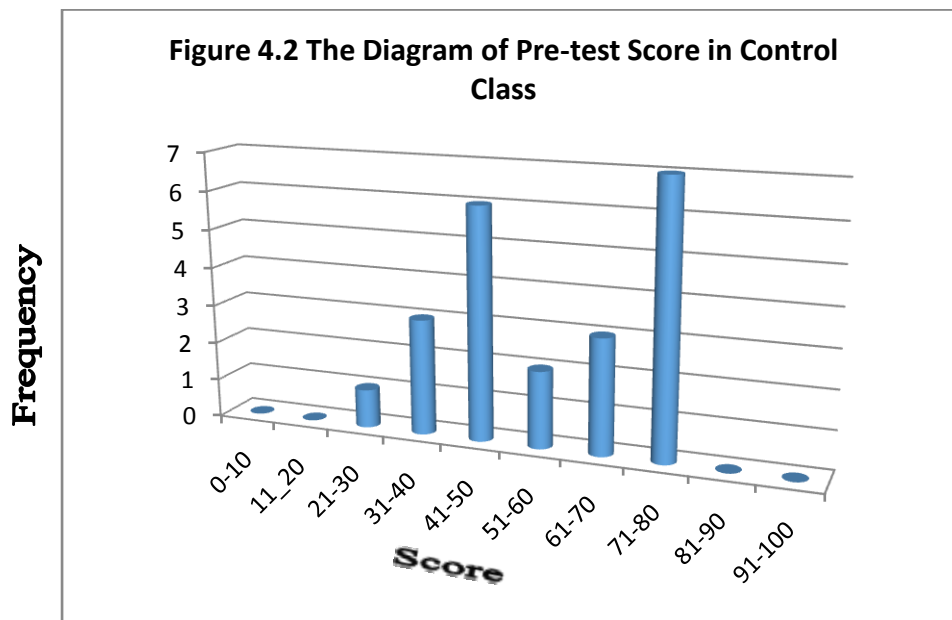


Figure 4.1 diagram of frequency distribution of pre-test scores for control class.

The table and figure above showed the students' pre-test score of the control group. It could be seen that there was three students who got score 80, one student who got score 78, three students who got score 74, one student who got score 30, one student who got score 70, one student who got score 72, one student who got score 68, two students who got score 65, two students who got score 54, one student who got score 48, one student who got score 46, three students who got score 45, one student who got score 44, one student who got score 34, two students who got score 33, and one student who got score 25. In this case, many students got score under 65

The next step, writer tabulated the score into the table for calculation mean as follows.

**Table 4.8** The Table for Calculating Mean of Pre-test Scores for Control Class.

| NO    | SCORE<br>(X) | FREKUENSI<br>(F) | FX               | FKb | FKa |
|-------|--------------|------------------|------------------|-----|-----|
| 1     | 80           | 3                | 240              | 23  | 3   |
| 2     | 78           | 1                | 78               | 20  | 4   |
| 3     | 74           | 3                | 222              | 19  | 7   |
| 4     | 72           | 1                | 72               | 16  | 8   |
| 5     | 68           | 1                | 68               | 15  | 9   |
| 6     | 65           | 2                | 130              | 14  | 11  |
| 7     | 54           | 2                | 108              | 12  | 13  |
| 8     | 48           | 1                | 48               | 10  | 14  |
| 9     | 46           | 1                | 46               | 9   | 15  |
| 10    | 45           | 3                | 135              | 8   | 18  |
| 12    | 44           | 1                | 44               | 5   | 19  |
| 13    | 34           | 1                | 34               | 4   | 20  |
| 14    | 33           | 2                | 66               | 3   | 22  |
| 15    | 25           | 1                | 25               | 1   | 23  |
| TOTAL |              | N = 23           | $\sum FX = 1316$ |     |     |

a. Mean

$$M_x = \frac{\sum FX}{N}$$

$$= \frac{1316}{23}$$

$$= 57,2173913$$

The calculation about showed of mean was 57,22

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

**Table 4.9 The Table for Calculating Standard Deviation and Standard Error of Pre-test Scores of Control Class.**

| NO    | SCORE | FREKUENSI<br>(F) | FX           | X       | X <sup>2</sup> | FX <sup>2</sup>               |
|-------|-------|------------------|--------------|---------|----------------|-------------------------------|
| 1     | 80    | 3                | 240          | 22,78   | 519,05         | 1557,14                       |
| 2     | 78    | 1                | 78           | 20,78   | 431,92         | 431,92                        |
| 3     | 74    | 3                | 222          | 16,78   | 281,66         | 844,97                        |
| 4     | 72    | 1                | 72           | 14,78   | 218,53         | 218,53                        |
| 5     | 68    | 1                | 68           | 10,78   | 116,26         | 116,26                        |
| 6     | 65    | 2                | 130          | 7,78    | 60,57          | 121,14                        |
| 7     | 54    | 2                | 108          | -3,217  | 10,35          | 20,70                         |
| 8     | 48    | 1                | 48           | -9,22   | 84,96          | 84,96                         |
| 9     | 46    | 1                | 46           | -11,217 | 125,83         | 125,83                        |
| 10    | 45    | 3                | 135          | -12,22  | 149,26         | 447,79                        |
| 11    | 44    | 1                | 44           | -13,22  | 174,70         | 174,70                        |
| 12    | 34    | 1                | 34           | -23,22  | 539,05         | 539,05                        |
| 13    | 33    | 2                | 66           | -24,217 | 586,48         | 1172,96                       |
| 14    | 25    | 1                | 25           | -32,217 | 1037,96        | 1037,96                       |
| TOTAL |       | N = 23           | ΣFX=<br>1316 |         |                | ΣFX <sup>2</sup> =<br>6893,91 |

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below:

c. Standard deviation

$$\begin{aligned}
 SD_D &= \sqrt{\frac{\sum FX^2}{N}} \\
 &= \sqrt{\frac{6893,91}{23}} \\
 &= \sqrt{299,7353497} \\
 &= 17,3128666 \text{ (17,33)}
 \end{aligned}$$

d. Standard error

$$\begin{aligned}
 SE_{MD} &= \frac{SD_D}{\sqrt{N-1}} \\
 &= \frac{17,3128666}{\sqrt{23-1}} \\
 &= \frac{17,3128666}{\sqrt{22}} \\
 &= \frac{17,3128666}{4,7} \\
 &= 3,68358864 \text{ (3,68)}
 \end{aligned}$$

The result of calculation showed the standard deviation of pre-test scores of experimental group was 17,33 and the standard error of pre-test scores of experimental group was 3,68.

**Table 4.10 The Table of Calculation of Mean, Standard Deviation, and Standard Error of Mean of Pre-test Scores in Control Group Using SPSS. 20 Program**

| Statistics         |         |                 |
|--------------------|---------|-----------------|
| control            |         |                 |
| N                  | Valid   | 23              |
|                    | Missing | 0               |
| Mean               |         | 57.22           |
| Std. Error of Mean |         | 3.691           |
| Median             |         | 54.00           |
| Mode               |         | 45 <sup>a</sup> |
| Std. Deviation     |         | 17.702          |
| Minimum            |         | 25              |
| Maximum            |         | 80              |

3. Distribution of Post-test score of the experiment group. The test scores of experimental group were presented in the following table.

**Table 4.11 The Description of Post-test Score of The Data Achieved by Students in Experimental Group.**

| CODE | SCORE<br>(X) |
|------|--------------|
| C1   | 75           |
| C2   | 75           |
| C3   | 80           |
| C4   | 75           |

|     |    |
|-----|----|
| C5  | 70 |
| C6  | 74 |
| C7  | 85 |
| C8  | 83 |
| C9  | 80 |
| C10 | 60 |
| C11 | 54 |
| C12 | 66 |

Based on the data above, it can be seen that the students highest score was 85 and the students lowest score was 54. However, based on the standard evaluation vocabulary subject, there were 10 students who success since they got more than 65. It mean that most students have master about vocabulary.

**Table 4.12The Frequency Distribution of Post-test Score of The Experimental Class**

| NO    | SCORE<br>(X) | FREKUENSI<br>(F) | FX                |
|-------|--------------|------------------|-------------------|
| 1     | 85           | 1                | 85                |
| 2     | 83           | 1                | 83                |
| 3     | 80           | 2                | 160               |
| 4     | 75           | 3                | 225               |
| 5     | 74           | 1                | 74                |
| 6     | 70           | 1                | 70                |
| 7     | 66           | 1                | 66                |
| 8     | 60           | 1                | 60                |
| 9     | 54           | 1                | 54                |
| TOTAL |              | N = 12           | $\Sigma FX = 877$ |

The distribution of students' post-test scores can also be seen in the following figure of diagram.

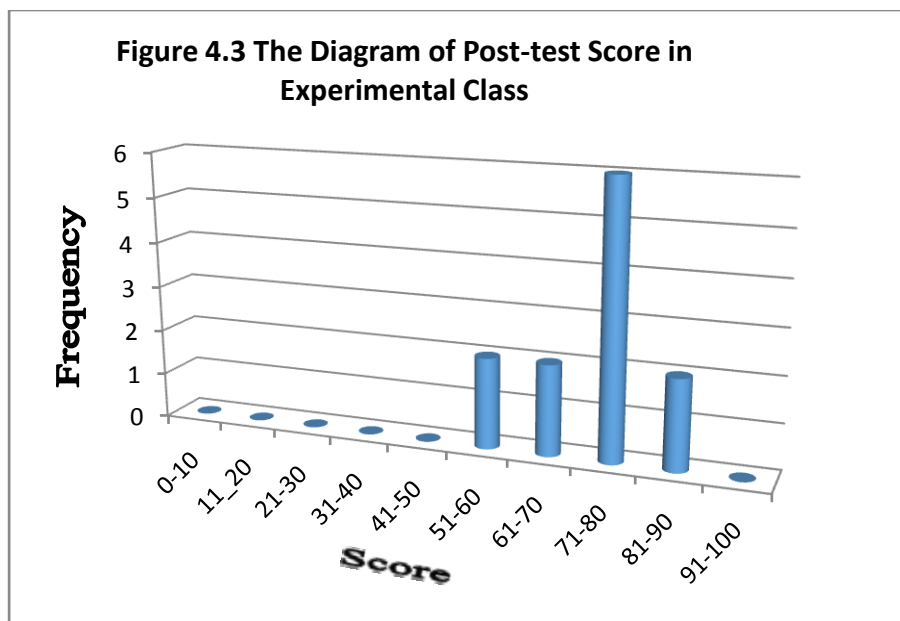


Figure 4.3 diagram of frequency distribution of post-test scores for experimental class.

The table and figure above showed the students' post-test score of the experimental group. It could be seen that there was three students who got score 75, two students who got score 80, one student who got score 70, one student who got score 74, one student who got score 85, one student who got score 83, one student who got score 60, one student who got score 54, one student who got score 66. In this case, many students got score more than 65.

The next step, writer tabulated the score into the table for calculation mean as follows.

**Table 4.13**The Table for Calculating Mean of Post-test Scores for  
Experimental Class.

| NO    | SCORE<br>(X) | FREKUENSI<br>(F) | FX              | FKb | FKa |
|-------|--------------|------------------|-----------------|-----|-----|
| 1     | 85           | 1                | 85              | 12  | 1   |
| 2     | 83           | 1                | 83              | 11  | 2   |
| 3     | 80           | 2                | 160             | 10  | 4   |
| 4     | 75           | 3                | 225             | 8   | 7   |
| 5     | 74           | 1                | 74              | 5   | 8   |
| 6     | 70           | 1                | 70              | 4   | 9   |
| 7     | 66           | 1                | 66              | 3   | 10  |
| 8     | 60           | 1                | 60              | 2   | 11  |
| 9     | 54           | 1                | 54              | 1   | 12  |
| TOTAL |              | N = 12           | $\sum FX = 877$ |     |     |

b. Mean

$$\begin{aligned}
 M_x &= \frac{\sum FX}{N} \\
 &= \frac{877}{12} \\
 &= 73,0833 \text{ (73,08)}
 \end{aligned}$$

The calculation about showed of mean was 73,08



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

**Table 4.14** The Table for Calculating Standard Deviation and Standard Error of Post-test Scores of Experimental Class.

| N<br>O | SCORE | FREKUENSI<br>(F) | FX          | X        | X <sup>2</sup> | FX <sup>2</sup>                |
|--------|-------|------------------|-------------|----------|----------------|--------------------------------|
| 1      | 85    | 1                | 85          | 11.92    | 142.0069       | 142.0069                       |
| 2      | 83    | 1                | 83          | 9.92     | 98.3403        | 98.3403                        |
| 3      | 80    | 2                | 160         | 6.92     | 47.8403        | 95.6806                        |
| 4      | 75    | 3                | 225         | 1.92     | 3.6736         | 11.0208                        |
| 5      | 74    | 1                | 74          | 0.92     | 0.8403         | 0.8403                         |
| 6      | 70    | 1                | 70          | -3.08    | 9.5069         | 9.5069                         |
| 7      | 66    | 1                | 66          | -7.08    | 50.1736        | 50.1736                        |
| 8      | 60    | 1                | 60          | -13.0833 | 171.1736       | 171.1736                       |
| 9      | 54    | 1                | 54          | -19.0833 | 364.1736       | 364.1736                       |
| TOTAL  |       | N = 12           | ΣFX=<br>877 |          |                | ΣFX <sup>2</sup> =<br>942.9167 |

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below

a. Standard deviation

$$\begin{aligned}
 SD_D &= \sqrt{\frac{\sum FX^2}{N}} \\
 &= \sqrt{\frac{942,9167}{12}}
 \end{aligned}$$

$$= \sqrt{78,5763889}$$

$$= 8,8643324 \text{ (8,864)}$$

b. Standard error

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

$$= \frac{8,8643324}{\sqrt{12-1}}$$

$$= \frac{8,8643324}{\sqrt{11}}$$

$$= \frac{8,8643324}{3,3}$$

$$= 2,68616133 \text{ (2,68)}$$

The result of calculation showed the standard deviation of post-test scores of experimental group was 8,864 and the standard error of post-test scores of experimental group was 2,68.

**Table 4.15 The Table of Calculation of Mean, Standard Deviation, and Standard Error of Mean of Post-test Scores in Experimental Group Using SPSS 20 Program**

| Statistics         |         |       |
|--------------------|---------|-------|
| experiment         |         |       |
| N                  | Valid   | 12    |
|                    | Missing | 0     |
| Mean               |         | 73.08 |
| Std. Error of Mean |         | 2.673 |
| Median             |         | 75.00 |
| Mode               |         | 75    |

|                |              |
|----------------|--------------|
| Std. Deviation | <b>9.258</b> |
| Minimum        | <b>54</b>    |
| Maximum        | <b>85</b>    |

4. Distribution of Post-test score of control group

**Table 4.16 The Description of Post-test Score of The Data  
Achieved by Students in ControlGroup.**

| CODE | SCORE<br>(X) |
|------|--------------|
| A1   | 55           |
| A2   | 59           |
| A3   | 76           |
| A4   | 76           |
| A5   | 75           |
| A6   | 78           |
| A7   | 45           |
| A8   | 68           |
| A9   | 63           |
| A10  | 62           |
| A11  | 62           |
| A12  | 68           |
| A13  | 80           |
| A14  | 68           |

|     |    |
|-----|----|
| A15 | 47 |
| A16 | 62 |
| A17 | 54 |
| A18 | 68 |
| A19 | 57 |
| A20 | 48 |
| A21 | 57 |
| A22 | 64 |
| A23 | 68 |

Based on the data above, it can be seen that the students highest score was 80 and the students lowest score was 47. However, based on the standard evaluation vocabulary subject, there were 10 students who success since they got fewer than 65. It mean that most students still did not master about vocabulary.

**Table 4.17 The Frequency Distribution of Post-test Score of the Control Class**

| NO | SCORE<br>(X) | FREKUENSI<br>(F) | FX  |
|----|--------------|------------------|-----|
| 1  | 80           | 1                | 80  |
| 2  | 78           | 1                | 78  |
| 3  | 76           | 2                | 152 |
| 4  | 75           | 1                | 75  |
| 5  | 68           | 5                | 340 |
| 6  | 64           | 1                | 64  |
| 7  | 63           | 1                | 63  |

|       |    |        |                    |
|-------|----|--------|--------------------|
| 8     | 62 | 3      | 186                |
| 9     | 59 | 1      | 59                 |
| 10    | 57 | 2      | 114                |
| 11    | 55 | 1      | 55                 |
| 12    | 54 | 1      | 54                 |
| 13    | 48 | 1      | 48                 |
| 14    | 47 | 1      | 47                 |
| 15    | 45 | 1      | 45                 |
| TOTAL |    | N = 23 | $\Sigma FX = 1460$ |

The distribution of students' post-test scores can also be seen in the following figure of diagram.

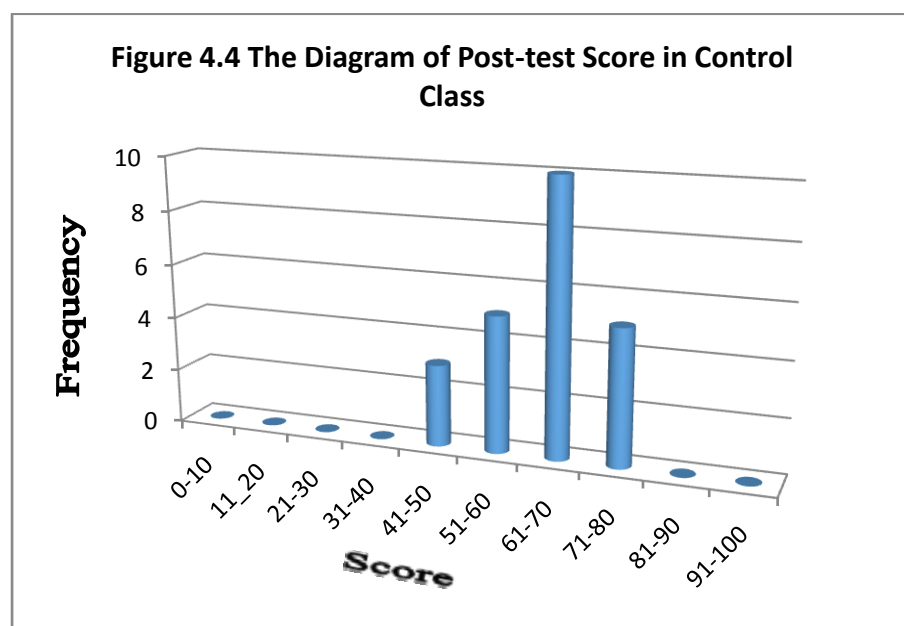


Figure 4.4 diagram of frequency distribution of post-test scores for control class.

The table and figure above showed the students' post-test score of the control group. It could be seen that there was one student who got score 55, one student who got score 59, two students who got score 76, one student who got score 75, one student who got score 78, one student who got score 45, five students who got score 68, one student who got score 63, three students who got score 62, one student who got score 80, one student who got score 47, three students who got score 54, two students who got score 57, one student who got score 48, one students who got score 64. In this case, many students got score under 65

The next step, writer tabulated the score into the table for calculation mean as follows.

**Table 4.18** The Table for Calculating Mean of Post-test Scores for Control Class.

| NO | SCORE<br>(X) | FREKUENSI<br>(F) | FX  | FKb | FKa |
|----|--------------|------------------|-----|-----|-----|
| 1  | 80           | 1                | 80  | 23  | 1   |
| 2  | 78           | 1                | 78  | 22  | 2   |
| 3  | 76           | 2                | 152 | 21  | 4   |
| 4  | 75           | 1                | 75  | 19  | 5   |
| 5  | 68           | 5                | 340 | 18  | 10  |
| 6  | 64           | 1                | 64  | 13  | 11  |
| 7  | 63           | 1                | 63  | 12  | 12  |
| 8  | 62           | 3                | 186 | 11  | 15  |
| 9  | 59           | 1                | 59  | 8   | 16  |
| 10 | 57           | 2                | 114 | 7   | 18  |

|       |    |        |                  |   |    |
|-------|----|--------|------------------|---|----|
| 11    | 55 | 1      | 55               | 5 | 19 |
| 12    | 54 | 1      | 54               | 4 | 20 |
| 13    | 48 | 1      | 48               | 3 | 21 |
| 14    | 47 | 1      | 47               | 2 | 22 |
| 15    | 45 | 1      | 45               | 1 | 23 |
| TOTAL |    | N = 23 | $\sum FX = 1460$ |   |    |

Mean

$$\begin{aligned}
 M_x &= \frac{\sum FX}{N} \\
 &= \frac{1460}{23} \\
 &= 63,47826
 \end{aligned}$$

The calculation about showed of mean was 63,48.

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

**Table 4.19 The Table for Calculating Standard Deviation and Standard Error of Post-test Scores of Control Class.**

| NO | SCORE | FREKUENSI<br>(F) | FX  | X       | X <sup>2</sup> | FX <sup>2</sup> |
|----|-------|------------------|-----|---------|----------------|-----------------|
| 1  | 80    | 1                | 80  | 16,5217 | 272,9679       | 272,9679        |
| 2  | 78    | 1                | 78  | 14,522  | 210,8809       | 210,8809        |
| 3  | 76    | 2                | 152 | 12,5217 | 156,7940       | 313,5879        |
| 4  | 75    | 1                | 75  | 11,522  | 132,7505       | 132,7505        |
| 5  | 68    | 5                | 340 | 4,5217  | 20,4461        | 102,2306        |
| 6  | 64    | 1                | 64  | 0,5217  | 0,2722         | 0,2722          |

|       |    |        |                     |          |          |                            |
|-------|----|--------|---------------------|----------|----------|----------------------------|
| 7     | 63 | 1      | 63                  | -0,4783  | 0,2287   | 0,2287                     |
| 8     | 62 | 3      | 186                 | -1,479   | 2,1853   | 6,5558                     |
| 9     | 59 | 1      | 59                  | -4,478   | 20,0548  | 20,0548                    |
| 10    | 57 | 2      | 114                 | -6,4783  | 41,9679  | 83,9357                    |
| 11    | 55 | 1      | 55                  | -8,478   | 71,8809  | 71,8809                    |
| 12    | 54 | 1      | 54                  | -9,4783  | 89,8374  | 89,8374                    |
| 13    | 48 | 1      | 48                  | -15,478  | 239,5766 | 239,5766                   |
| 14    | 47 | 1      | 47                  | -16,478  | 271,5331 | 271,5331                   |
| 15    | 45 | 1      | 45                  | -18,4783 | 341,4461 | 341,4461                   |
| TOTAL |    | N = 23 | $\sum FX =$<br>1460 |          |          | $\sum FX^2 =$<br>2157,7391 |

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below:

a. Standard deviation

$$\begin{aligned}
 SD_D &= \sqrt{\frac{\sum FX^2}{N}} \\
 &= \sqrt{\frac{2157,7391}{23}} \\
 &= \sqrt{93,8147448} \\
 &= 9,6858012 \text{ (9,69)}
 \end{aligned}$$

b. Standard error

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



$$\begin{aligned}
&= \frac{9,6858012}{\sqrt{23-1}} \\
&= \frac{9,6858012}{\sqrt{22}} \\
&= \frac{9,6858012}{4,7} \\
&= 2,06080877 (2,06)
\end{aligned}$$

The result of calculation showed the standard deviation of pre-test scores of experimental group was 9,69 and the standard error of pre-test scores of experimental group was 2,06.

**Table 4.20 The Table of Calculation of Mean, Standard Deviation, and Standard Error of Mean of Post-test Scores in Control Group Using SPSS 20 Program**

| Statistics         |         |       |
|--------------------|---------|-------|
| control            |         |       |
| N                  | Valid   | 23    |
|                    | Missing | 0     |
| Mean               |         | 63.48 |
| Std. Error of Mean |         | 2.065 |
| Median             |         | 63.00 |
| Mode               |         | 68    |
| Std. Deviation     |         | 9.903 |
| Minimum            |         | 45    |
| Maximum            |         | 80    |

## B. Testing of Data Normality and Homogeneity

## 1. Testing Normality

### One-Sample Kolmogorov-Smirnov Test

|                           |                | experiment | control |
|---------------------------|----------------|------------|---------|
| N                         |                | 12         | 23      |
| Normal                    | Mean           | 73.08      | 63.48   |
| Parameters <sup>a,b</sup> | Std. Deviation | 8.864      | 9.903   |
| Most Extreme              | Absolute       | .258       | .111    |
| Differences               | Positive       | .145       | .107    |
|                           | Negative       | -.258      | -.111   |
| Kolmogorov-Smirnov Z      |                | .895       | .531    |
| Asymp. Sig. (2-tailed)    |                | .400       | .940    |

a. Test distribution is Normal.

b. Calculated from data.

The criteria of the normality test pre-test and post-test is if the value of  $r$ (probability value/critical value) is higher than or equal to the level of significance  $\alpha$  defined ( $r \geq \alpha = 0.05$ ), it means that, the distribution is normal. Based on the calculation using SPSS 20 above, the value of  $r$  (probability value/critical value) from pre-test and post-test of the control group and experimental group in Kolmogorov-Smirnov. So that the distributions are normal. It meant that the students' scores of in pre-test and post-test had a normal distribution.

## 2. Testing Homogeneity

### Test of Homogeneity of Variances

Nilai

| Levene<br>Statistic | df1      | df2       | Sig.        |
|---------------------|----------|-----------|-------------|
| <b>.839</b>         | <b>1</b> | <b>33</b> | <b>.366</b> |

From the table output above can be known the significance about 0,366. Because the value of significance higher than 0, 05 so can be concluded that the data of both group have the same variance or homogeneity. Number of Levene Statistic showed that more lower the value so higher the homogeneity of the data.

### C. Result of Data Analysis

In order to calculate the  $t_{\text{test}}$ , the writer used both manual calculation and SPSS program calculation. Both results are expected to support the correct calculation each other.

#### 1. Testing hypotheses using manual calculation

To answer the problem, whether there was a significant difference between teaching English vocabulary using Contextual Teaching and Learning and without using Contextual Teaching and Learning on the students' vocabulary mastery or not, the  $t_{\text{test}}$  for correlated samples was applied. Here the writer choose the significance level on 5%, it means the significance level or refusal of null hypotheses on 5%. The writer decided the significance level at 5% due to the hypotheses type stated on non-directional (two-tailed test). It meant that the hypotheses cannot direct the prediction of alternative hypotheses. Alternative hypotheses symbolized by "1". This

symbol could direct the answer of hypotheses. “1” can be (>) or (<). The answer of hypotheses could not be predicted whether or more than less than.

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

**Table 4.21 The Standard Deviation and Standard Error of  $X_1$  and  $X_2$**

| Variable | The Standard Deviation | The Standard Error |
|----------|------------------------|--------------------|
| $X_1$    | 8, 864                 | 2, 69              |
| $X_2$    | 9,69                   | 2,06               |

$X_1$  : Experiment Class

$X_2$  : Control Class

The data showed the result of the standard deviation calculation of  $X_1$  was 8, 864 and the result of the standard error mean calculation was 2, 68. The result of the standard deviation calculation of  $X_2$  was 9, 69 and the result of the standard error mean calculation was 2, 06.

The next step, the writer calculated the standard error of differences mean between  $X_1$  and  $X_2$  as follows:

$$SE_{M1} - SE_{M2} = \sqrt{SE_{M1}^2 + SE_{M2}^2}$$

$$\begin{aligned}
&= \sqrt{2,69^2 + 2,06^2} \\
&= \sqrt{7,2361 + 4,2436} \\
&= \sqrt{11,4797} \\
&= 3.3881706 (3.388)
\end{aligned}$$

The calculation above showed the standard error of the differences mean between  $X_1$  and  $X_2$  was 3, 83. Then,  $t_{\text{observe}}$  as follows:

$$\begin{aligned}
t_o &= \frac{M_1 - M_2}{SE_{M1} - SE_{M2}} \\
&= \frac{73.08 - 63,48}{3,388} \\
&= \frac{9,6}{3,388} \\
&= 2.83353011 (2, 834)
\end{aligned}$$

With criteria:

If t-test (t-observed)  $\geq$  t-table.  $H_a$  is accepted and  $H_o$  is rejected.

If t-test (t-observed)  $<$  t-table.  $H_a$  is rejected and  $H_o$  is accepted.

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

$$\begin{aligned}
Df &= (N_1 + N_2) - 2 \\
&= 12 + 23 - 2 \\
&= 33
\end{aligned}$$

Then writer choose the significant level on 5%; it meant the significant level of refusal of null hypotheses on 5%. The writer decided the significance level at 5% due the hypotheses typed stated on non-directional

(two-tailed test). It meant that the hypotheses cannot direct the prediction of alternative hypotheses.

The calculation above showed the result of  $t_{\text{test}}$  calculation as in the table follows:

**Table 4.22 The Result of t-test**

| Variable    | $t_{\text{observed}}$ | $t_{\text{table}}$ |       | Df/db |
|-------------|-----------------------|--------------------|-------|-------|
|             |                       | 5%                 | 1%    |       |
| $X_1 - X_2$ | 2, 834                | 2, 042             | 2,750 | 33    |

Where :

$X_1$  = Experimental Class

$X_2$  = Control Class

$t_{\text{observed}}$  = The calculated value

$t_{\text{table}}$  = The distribution of t value

Df/db = Degree of freedom

Based on the result of hypotheses test calculation, it was found that the value of  $t_{\text{observed}}$  was greater than the value of  $t_{\text{table}}$  at the level of significance in 5% or 1% that was  $2, 042 < 2, 834 > 2, 750$  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 teaching English by using Contextual Teaching and Learning gives effect on the students' vocabulary mastery score was accepted and  $H_o$  stating that teaching English by using Contextual Teaching and Learning does not give effect on the students' vocabulary score was rejected. It means that

teaching vocabulary using Contextual Teaching and Learning gave significant effect on the students' vocabulary score of the students' of English study program at State Islamic Institute of Palangka Raya.

#### **D. Testing hypotheses using SPSS 20**

The writer also applied SPSS 20 program to calculate  $t_{test}$  in testing hypotheses of the study. The result of  $t_{test}$  using SPSS 20 was used to support the manual calculation of the  $t_{test}$ . The result of the  $t_{test}$  using SPSS 20 program could be seen as follows:

**Table 4.23 Standard Deviation and Standard Error of  $X_1$  and  $X_2$**

| <b>Group Statistics</b> |       |    |       |                |                 |
|-------------------------|-------|----|-------|----------------|-----------------|
|                         | class | N  | Mean  | Std. Deviation | Std. Error Mean |
| score                   | $X_1$ | 12 | 73.08 | 9.258          | 2.673           |
|                         | $X_2$ | 23 | 63.48 | 9.903          | 2.065           |

The table showed the result of the standard deviation calculation of  $X_1$  was 9,258 and the result of standard error mean calculation was 2,673. The result of standard deviation calculation of  $X_2$  was 9,903, and the standard error mean calculation was 2,065.

**Table 4.24 The Calculation  $t_{test}$  Using SPSS.20 Independent Samples Test**

| <b>Independent Samples Test</b> |
|---------------------------------|
|---------------------------------|

|       |                             | Levene's Test for Equality of Variances |             | t-test for Equality of Means |               |                |                 |                       |   |               |
|-------|-----------------------------|---|-------------|------------------------------|---------------|----------------|-----------------|-----------------------|---|---------------|
|       |                             | F                                       | Sig.        | t                            | df            | Sig.(2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |               |
|       |                             |   |             |                              |               |                |                 |                       | Lower                                     | Upper         |
| Score | Equal variances assumed     | <b>.169</b>                             | <b>.683</b> | <b>2.783</b>                 | <b>33</b>     | <b>.009</b>    | <b>9.605</b>    | <b>3.452</b>          | <b>2.582</b>                              | <b>16.628</b> |
|       | Equal variances not assumed |   |             | <b>2.844</b>                 | <b>23.811</b> | <b>.009</b>    | <b>9.605</b>    | <b>3.378</b>          | <b>2.631</b>                              | <b>16.579</b> |

The table showed the result of  $t_{\text{test}}$  calculation using SPSS.20 program.

Since the result of post test between experimental and control group had difference score of variance, it found that the result of  $t_{\text{observed}}$  was 2,783, the result of mean difference between experimental and control group was 2,844, and the standard error difference between experimental and control group was 3,378.

To examine the truth or the false of null hypothesis stating that Contextual Teaching and Learning does not give effect on students' vocabulary mastery score, the result of degree of freedom to get the  $t_{\text{table}}$ . The result of degree of freedom (df) was 33, it found from total number of the



students in both group minus 2. The following table was the result of  $t_{\text{observed}}$  and  $t_{\text{table}}$  from 33 df at 5% and 1 %

It could be interpreted based on the result of calculation  $H_a$  stating that Contextual Teaching and Learning give effect on the students' vocabulary score was accepted and  $H_o$  stating that Contextual Teaching and Learning does not give effect on the students' vocabulary score was rejected. It means that teaching vocabulary using Contextual Teaching and Learning gave significant effect on students' vocabulary score of the right grade students in English study program at State Islamic Institute of Palangka Raya.

#### **E. Discussion**

In teaching learning process, the writer took two groups as the participant of the study, the first group where taught by using Contextual Teaching and Learning and the second group as control group who are taught by using conventional method which is used by the teacher using the book and explain accord with the existing topics in the text book. Contextual Teaching and Learning is one of method that used to teach English vocabulary by the teacher for teaching the students in the class. Contextual Teaching and Learning can make a good interaction between teacher and students. Contextual Teaching and Learning used by teacher was increase students' enthusiasm in learning process. It could be occur because Contextual Teaching and Learning connected between material and the fact in real situation. From the result of analysis, it can be seen from the score of students how the use of method giving positive effects for students vocabulary mastery. It meant the method has important role in teaching learning process.

The result of the statistical calculation showed clearly that there was a significant difference between vocabulary mastery using Contextual Teaching and Learning and vocabulary mastery without using it on the students' English score. The data showed that there was clear evidence indicating significant effect on the students' vocabulary mastery using Contextual Teaching and Learning.

The result of the data analysis showed that the Contextual Teaching and Learning gave significance effect on the students' English scores for the vocabulary class at the first year students in English study program at State Islamic Institute of Palangka Raya. The students who were taught using Contextual Teaching and Learning got higher score than those who were taught without using Contextual Teaching and Learning.

Furthermore, the finding of the study interpreted that the alternative hypotheses stating that teaching vocabulary using Contextual Teaching and Learning give effect toward the vocabulary mastery at the first year students of English study program State Islamic Institute was accepted and the null hypotheses stating that teaching of vocabulary without using Contextual Teaching and Learning does not give effect toward the vocabulary mastery at the first year students of English study program State Islamic Institute was rejected.

There were some possible reasons why the Contextual Teaching and Learning gave effect on the vocabulary scores of the first year students in English Study Program at State Islamic Institute of Palangka Raya. First Contextual Teaching and Learning invites students to be more active and found the material

by themselves. Beside that, students connected between material , it helped students for practicing the material that they got on the daily activities.

Second, according to Burhanuddin, Contextual Teaching and Learning can basically be applied in all curriculums, all subjects, and all class. In this study, Contextual Teaching and Learning applied in the vocabulary class at university level is significant. It clearly showed on the result of the statistical calculation. Beside that, Kasihani points out that Contextual Teaching and Learning is the draft of teaching and learning which help teacher to connect the lesson with the real situation and motivate students for connecting the experience and applied with daily activities as family member and society.

The findings of the study verified the statement that teaching Vocabulary using Contextual Teaching and Learning as a good method in teaching English vocabulary that provided the concrete thing for the students that can be seen. It is proved by the calculation result of the acceptance of alternative hypotheses stating that teaching vocabulary using Contextual Teaching and Learning give effect toward the vocabulary mastery at the first year students of English study program State Islamic Institute of Palangka Raya.

