**CHAPTER IV**

**FINDINGS AND DISCUSSION**

This chapter reports the result of reading test that is administered to the students of eight classes (see table 4.1 and 4.3). for the students’ reading score without using scanning technique and using scanning technique, are presented in tables 4.1 and 4.3.

1. **Data Presentation**
2. Students’ reading score of pre-test without using scanning technique (control group) and using scanning technique (experimental group)

To know the effectiveness of pre-test without using scanning technique (control group) and using scanning technique (experimental group), then she gives the test to the students who were taught using the two different methods. The result (see the table 4.1)

**Table 4.1 The students’ reading score of pre-test without using scanning technique (control group) and using scanning technique (experimental group)**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Without using scanning technique** **(control group)** | **No.** | **Using scanning technique (experimental Group)** |
| **Code**  | **Score of Pre-test** | **Code**  | **Score of Pre-test** |
|  | B1 | 58 |  | A1 | 46 |
|  | B2 | 60 |  | A2 | 50 |
|  | B3 | 54 |  | A3 | 48 |
|  | B4 | 82 |  | A4 | 58 |
|  | B5 | 52 |  | A5 | 66 |
|  | B6 | 46 |  | A6 | 82 |
|  | B7 | 50 |  | A7 | 62 |
|  | B8 | 80 |  | A8 | 56 |
|  | B9 | 60 |  | A9 | 70 |
|  |  B10 | 80 |  |  A10 | 48 |
|  |  B11 | 64 |  |  A11 | 52 |
|  |  B12 | 75 |  |  A12 | 80 |
|  |  B13 | 56 |  |  A13 | 70 |
|  |  B14 | 50 |  |  A14 | 82 |
|  |  B15 | 82 |  |  A15 | 50 |
|  |  B16 | 54 |  |  A16 | 82 |
|  |  B17 | 70 |  |  A17 | 84 |
|  |  B18 | 62 |  |  A18 | 82 |
|  |  B19 | 84 |  |  A19 | 75 |
|  |  B20 | 64 |  |  A20 | 58 |
|  |  B21 | 52 |  |  A21 | 66 |
|  |  B22 | 82 |  |  A22 | 60 |
|  |  | $$\sum\_{}^{}=1417$$ |  |  | $$\sum\_{}^{}=1427$$ |

After knowing the test result of pre-test, the researcher compare in the result percentage which is done in the stages as described below:

1. Percentage of pre-test score without scanning technique (control group) and using scanning technique (experimental group).

The researcher used percentage formula and divided the test result into three criteria; those are good, fair, and bad in students’ reading achievement control and experimantal group. See the table below:

**Table 4.2 Percentage of pre-test score without using scanning technique (control group) and using scanning technique (experimental group)**

|  |  |  |
| --- | --- | --- |
| **INTERNAL CLASS / STUDENTS’ SCORE** | **Without using scanning technique (control group)** | **Using scanning technique (experimental group)** |
| % | % |
| Good (81 - 100 ) | 30 | 20 |
| Enough / fair (61 - 80) | 20 | 30 |
| Bad / low (40 - 60) | 50 | 50 |

Based on the table above, it can be conclude that the students’ score by using scanning technique (experimental group) is higher than without using scanning technique (control group) in pre-test.

1. Students’ reading score of post-test without using scanning technique (control group) and using scanning technique (experimental group)

To know the effectiveness of post-test without using scanning technique (control group) and using scanning technique (experimental group), then she gives the test to the students who were taught using the two different methods. The result (see the table 4.3)

**Table 4.3 The students’ reading score of post-test without using scanning technique (control group) and using scanning technique (experimental group)**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Without using scanning technique (control group)** | **No.**  | **Using scanning technique (experimental group)** |
| **Code** | **Score of Post-test** | **Code**  | **Score of Post-test** |
|  | B1 | 64 |  | A1 | 60 |
|  | B2 | 82 |  | A2 | 68 |
|  | B3 | 60 |  | A3 | 62 |
|  | B4 | 86 |  | A4 | 72 |
|  | B5 | 66 |  | A5 | 82 |
|  | B6 | 56 |  | A6 | 94 |
|  | B7 | 58 |  | A7 | 78 |
|  | B8 | 86 |  | A8 | 76 |
|  | B9 | 72 |  | A9 | 84 |
|  |  B10 | 84 |  |  A10 | 84 |
|  |  B11 | 76 |  |  A11 | 74 |
|  |  B12 | 76 |  |  A12 | 86 |
|  |  B13 | 60 |  |  A13 | 90 |
|  |  B14 | 62 |  |  A14 | 88 |
|  |  B15 | 86 |  |  A15 | 72 |
|  |  B16 | 60 |  |  A16 | 86 |
|  |  B17 | 82 |  |  A17 | 92 |
|  |  B18 | 70 |  |  A18 | 96 |
|  |  B19 | 88 |  |  A19 | 94 |
|  |  B20 | 76 |  |  A20 | 60 |
|  |  B21 | 54 |  |  A21 | 82 |
|  |  B22 | 84 |  |  A22 | 78 |
|  |  | $$\sum\_{}^{}=1588$$ |  |  | $$\sum\_{}^{}=1758$$ |

After knowing the test result of post-test, the reseacher compare in the results percentage which is done in the stage as described below:

1. Percentage of post-test score of control group (using scanning technique) and experimental group (without using scanning technique).

The researcher used percentage formula and divided the test result into three criteria; those are good, fair, bad in students’ reading achievement of control group. See the table 4.4 below:

**Table 4.4 Percentage of post-test score without using scanning technique (control group) and using scanning technique (experimental group)**

|  |  |  |
| --- | --- | --- |
| **INTERNAL CLASS / STUDENTS’ SCORE** | **Without using scanning technique (control group)** | **Using scanning technique (experimental group)** |
|  | % | % |
| Good (81 - 100 ) | 40 | 70 |
| Enough / fair (61 - 80) | 40 | 20 |
| Bad / low (40 - 60) | 20 | 10 |

Based on the table above, it can be conclude that the students’ score by using scanning technique (experimental group) is higher than without using scanning technique (control group) in post-test.

The researcher used statistical test result using T-test of comparison of students’ reading achievement without using scanning technique (control group) and using scanning technique (experimental group). See the table 4.below:

**Table 4.5 Table presentation to compute the T-test Between Control Group and Experimental Group**

|  |  |
| --- | --- |
| **CONTROL GROUP** | **EXPERIMENTAL GROUP** |
| **Subject** | **Pre-test****(X1)** | **Pos-test****(X2)** | **Deviation (X)** | **X2** | **Subject** | **Pre-test (Y1)** | **Post-test (Y2)** | **Deviation (Y)** | **Y2** |
| 1 | 58 | 64 | 6 | 36 | 1 | 46 | 60 | 14 | 196 |
| 2 | 60 | 82 | 22 | 484 | 2 | 50 | 68 | 18 | 324 |
| 3 | 54 | 60 | 6 | 36 | 3 | 48 | 62 | 14 | 196 |
| 4 | 82 | 86 | 4 | 16 | 4 | 58 | 72 | 14 | 196 |
| 5 | 52 | 66 | 14 | 196 | 5 | 66 | 82 | 16 | 256 |
| 6 | 46 | 56 | 10 | 100 | 6 | 82 | 94 | 12 | 144 |
| 7 | 50 | 58 | 8 | 64 | 7 | 62 | 78 | 16 | 256 |
| 8 | 80 | 86 | 6 | 36 | 8 | 56 | 76 | 20 | 400 |
| 9 | 60 | 72 | 12 | 144 | 9 | 70 | 84 | 14 | 196 |
| 10 | 80 | 84 | 4 | 16 | 10 | 48 | 84 | 36 | 1296 |
| 11 | 64 | 76 | 12 | 144 | 11 | 52 | 74 | 22 | 484 |
| 12 | 75 | 76 | 1 | 1 | 12 | 80 | 86 | 6 | 36 |
| 13 | 56 | 60 | 4 | 16 | 13 | 70 | 90 | 20 | 400 |
| 14 | 50 | 62 | 12 | 144 | 14 | 82 | 88 | 6 | 36 |
| 15 | 82 | 86 | 4 | 16 | 15 | 50 | 72 | 22 | 484 |
| 16 | 54 | 60 | 6 | 36 | 16 | 82 | 86 | 4 | 16 |
| 17 | 70 | 82 | 12 | 144 | 17 | 84 | 92 | 8 | 64 |
| 18 | 62 | 70 | 8 | 64 | 18 | 82 | 96 | 14 | 196 |
| 19 | 84 | 88 | 4 | 16 | 19 | 75 | 94 | 19 | 361 |
| 20 | 64 | 76 | 12 | 144 | 20 | 58 | 60 | 2 | 4 |
| 21 | 52 | 54 | 2 | 4 | 21 | 66 | 82 | 16 | 256 |
| 22 | 82 | 84 | 2 | 4 | 22 | 60 | 78 | 18 | 324 |
| N=22 | X= 1417 | X2=1588 | $$\sum\_{}^{}X=171$$ | $$\sum\_{}^{}X^{2}=1861$$ | N=22 | Y= 1427 | Y2= 1758 | $$\sum\_{}^{}Y= 331$$ | $$\sum\_{}^{}Y^{2}=6121$$ |

Based oh the table above, it means of pre- test and post- test and control group and experimental group were:

For the Experimental Group For the Control Group

Pre- test = 1427 : 22 = 64,8 Pre- test = 1417 : 22 = 64,4

Post- test = 1758 : 22 = 79,9 pot- test = 1588 : 22 = 72,1

$M\_{x}=\frac{X}{N}=\frac{171}{22}=7,77$ $M\_{y}=\frac{X}{N}=\frac{331}{22}=15,04$

$$\sum\_{}^{}x^{2}=\sum\_{}^{}x^{2}-\frac{\left(\sum\_{}^{}x\right)^{2}}{N}$$

$$=1861-\frac{\left(171\right)^{2}}{22}$$

$$=1861-\frac{\left(29241\right)}{22}$$

$$=1861-1329,13$$

$$=531,8$$

$$\sum\_{}^{}y^{2} =\sum\_{}^{}y^{2}-\frac{\left(\sum\_{}^{}y\right)^{2}}{N}$$

 $ =6121-\frac{\left(331\right)^{2}}{22}$

$$=6121-\frac{109561}{22}$$

$= $6121 $ - 4980,04$

1140,9

$$t=\frac{M\_{x}-M\_{y}}{\sqrt{\left(\frac{\sum\_{}^{}x^{2}+\sum\_{}^{}y^{2}}{N\_{x}+N\_{y-2}}\right)\left(\frac{1}{N\_{x}}+\frac{1}{N\_{y}}\right)}}$$

$$t=\frac{7,77-15,04}{\sqrt{\left(\frac{531,8+1140,9}{22+22-22}\right)\left(\frac{1}{22}+\frac{1}{22}\right)}}$$

$$t=\frac{7,27}{\sqrt{\left(\frac{1672,7}{42}\right)\left(\frac{2}{44}\right)}}$$

$$t=\frac{7,27}{\sqrt{\frac{3345,4}{1848}}}$$

$$t=\frac{7,27}{\sqrt{1,81}}$$

$$t=\frac{7,27}{1,35}$$

$t=5,39$

To know the degree of freedom, we can find the result from the formula below:

Df : (N2 + Y2 – 2) = (22 ­+ 22 – 22)

 = 42

 T- count = 5,38

 T- table = 2,02

 With the level of significance 5%. So, T-count (5,39) > T-table (2,02)

Based on the statistical analysis using t-test, it shown that t-table = (2,02) and t-count = (5,39). Therefore, the Ho (Null Hypothesis) is rejected; on the other hand Ha (Alternative Hypothesis) is received. It can be concluded that there was a significant effect of using scanning technique to improve comprehension of the eighth grade students at SMPN 3 Kedungwaru Tulungagung.

**Table 4.11 the result of the Hypothesis Testing**

|  |  |  |
| --- | --- | --- |
|  | **Experimental Group** | **Control Group** |
| Mean | 531,8 | 1140,9 |
| N | 22 | 22 |
| Pretest/posttest | 1427/1758 | 1417/1588 |
| Deviation | 331 | 171 |
| t-test | 5,39 |
| t-table 5% | 2,02 |
| Degree of freedom | 42 |

1. **Discussion**

The purpose of this research was to examine whether or not scanning techniques is effective in students’ reading comprehension test as the instrument was used in this study.

The statistical computation on the pre-test of experimental and control group using T-test formula. the result of T-test computation (independent sample test) demonstrated that the Tobt was lower than Tcrit (64, 4 < 64, 8) so the null hypothesis was accepted.

The outcomes of computation on the post-test group showed that the distribution of the experimental and the control group scores were aqual. In addition, the result of the T-test computation (Independent sample test) exhibited a significant difference between the experimental group who was treated using scanning technique and the control group who was treated without using scanning techniquein which the Tobt was lower than Tcrit (72, 1 < 79, 9), so the null hypothesis was accepted.

The computation of the control group pre-test and post-test score using T-test showed that there was differences between the pre-test and post-test scores. Meanwhile, the result showed that the students’ in the experimental group achieve better result in post-test. The improvement statistically significant it was compared to their pre-test scores. The statistical computation result exhibited a significant fact that scanning technique is effective in students’ reading comprehension.

The computation of average scores in the experimental group exhibited that before treatment the average score was 64, 8 and after treatment was 79, 9. Then, the classification of range score was implemented based on the probable class performance of Harris (1969: 134), the outcome revealed that the students’ reading comprehension without using scanning technique was classified as poor (40 - 60) while using scanning technique was classified average to good (81 - 100).