

## CHAPTER IV

### RESEARCH FINDING AND DISCUSSION

In this chapter , the researcher describe and discuss the data to find out the answer of the statements of problem in chapter 1. The researcher gave post test to know the whether it is effective or not to use collaborative writing in teaching descriptive text. The researcher wanted to know weather any significant difference between before and after students are taught by using collaborative writing method.

#### 4.1. The Calculation of Test Validity

Trying out of instrument was needed in order to know the validity of the test item. In this section, the data showed the calculation of validity in test.

##### 4.1.1 The Validity of Test

Formula :

$$r_{xy} = \frac{(N \cdot \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{\{(N \cdot X^2) - (\sum X)^2\} \cdot \{N \cdot (\sum Y^2) - (\sum Y)^2\}}}$$

The item test is valid if  $r_{xy} > r_{table}$

$$R_{table} = 0,367$$

Table 4.1

## The Validity Computation Using Manual Calculation

No.	The Value of $r_{xy}$	Criteria
1.	$r_{xy} = \frac{(N \cdot \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{\{(N \cdot X^2) - (\sum X)^2\} \cdot \{N \cdot (\sum Y^2) - (\sum Y)^2\}}}$ $= \frac{(29 \cdot 1244) - (81 \cdot 427)}{\sqrt{\{(29 \cdot 239) - (81)^2\} \cdot \{29 \cdot (6575) - (427)^2\}}}$ $= \frac{36.076 - 34.587}{\sqrt{\{6.692 - 6561\} \cdot \{190.675 - 182.329\}}}$ $= \frac{1489}{\sqrt{\{131\} \cdot \{8.348\}}}$ $= \frac{1489}{\sqrt{3088760}}$ $= \frac{1489}{1.757,486842056}$ $= 0,483$	Valid
2.	$r_{xy} = \frac{(N \cdot \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{\{(N \cdot X^2) - (\sum X)^2\} \cdot \{N \cdot (\sum Y^2) - (\sum Y)^2\}}}$ $= \frac{(29 \cdot 1373) - (89 \cdot 427)}{\sqrt{\{(29 \cdot 291) - (89)^2\} \cdot \{29 \cdot 6575 - (427)^2\}}}$ $= \frac{(39817) - (38003)}{\sqrt{\{(8439 - 7921) \cdot 190675 - 182329\}}}$	Valid

	$= \frac{1814}{\sqrt{\{518.8346\}}}$ $= \frac{1814}{\sqrt{4323,228}}$ $= \frac{1489}{2079,23}$ $= 0,872$	
3.	$r_{xy} = \frac{(N \cdot \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{\{(N \cdot X^2) - (\sum X)^2\} \cdot \{N \cdot (\sum Y^2) - (\sum Y)^2\}}}$ $= \frac{(29 \cdot 1407) - (93 \cdot 427)}{\sqrt{\{(29 \cdot 313) - (93)^2\} \cdot \{29 \cdot 6575 - (427)^2\}}}$ $= \frac{40803 - 39711}{\sqrt{\{(9077 - 8649) \cdot (190675 - 182329)\}}}$ $= \frac{1092}{\sqrt{\{427.8346\}}}$ $= \frac{1092}{\sqrt{3572088}}$ $= \frac{1092}{1889,99}$ $= 0,578$	Valid
4.	$r_{xy} = \frac{(N \cdot \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{\{(N \cdot X^2) - (\sum X)^2\} \cdot \{N \cdot (\sum Y^2) - (\sum Y)^2\}}}$	Valid

	$= \frac{(29.1179) - (75.427)}{\sqrt{\{(29.217 - (75)^2)\} \cdot \{29.6575 - (427)^2\}}}$ $= \frac{34191 - 32025}{\sqrt{\{(6293 - 5625) \cdot 190675 - 182329\}}}$ $= \frac{2166}{\sqrt{\{668.13566\}}}$ $= \frac{2166}{\sqrt{9062088}}$ $= \frac{2166}{3010,33}$ $= 0,719$	
5.	$r_{xy} = \frac{(N \cdot \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{\{(N \cdot X^2 - (\sum X)^2)\} \cdot \{N \cdot (\sum Y^2 - (\sum y)^2)\}}}$ $= \frac{(29.1372) - (89.427)}{\sqrt{\{(29.295 - (89)^2)\} \cdot \{29.6575 - (427)^2\}}}$ $= \frac{39755 - 38003}{\sqrt{\{(8555 - 7291) \cdot 190675 - 182329\}}}$ $= \frac{1752}{\sqrt{\{634.825\}}}$ $= \frac{1752}{\sqrt{5236205}}$	Valid

	$\frac{1752}{2288}$ $= 0,765$	
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From the manual calculation above. The result, the writer gets the validity coefficient of correlation is (0,483), (0,872) (0,578), (0,719), (0,765). Then, it consults to the table of coefficient correlation, because r table with N=29 is  $\alpha = 5\%$  is 0,367. It shows that  $r_{xy} > r_{table}$ . So, all the items are valid.

#### 4.2. The Data Description

This part showed the general description of students' score in both the experimental and control group. The description was divided in to the result of test between control and experimental classes.

#### 4.3. The Post-Test Score

In this part, table describe the students' post-test score of the experimental group and control group. There were 28 students both in the experimental and control group.

Table 4.2

## The Students' Post-Test Score

Students	The Post-Test Score of Control Group	The Post-Test Score of Experimental Group
1	55	90
2	30	95
3	25	75
4	40	95
5	50	80
6	30	80
7	35	90
8	30	80
9	40	80
10	30	90
11	25	80
12	55	90
13	45	80



14	45	75
15	40	95
16	45	75
17	35	80
18	25	90
19	35	80
20	40	95
21	35	90
22	30	95
23	30	90
24	35	80
25	35	80
26	35	95
27	30	90
28	30	75
$\Sigma$	<b>1015</b>	<b>2390</b>
<b>Mean</b>	<b>36,25</b>	<b>85,5</b>

The data above shows the post test score of experimental and control group. The post test was given in the last meeting to students after they got treatment. The data showed the lowest score of experimental group was 75 and the control group was 25. In addition, the highest score the experimental group was 95 and control group was 55. So, it can be seen that the experimental group had higher score than the control group.

#### 4.4. The Data analysis

This section was intended to answer the research question whether collaborative writing was effective to improve students's writing descriptive text at the eight grade students of MTs. Mathalibul Huda Mlonggo or not. T-test was used to answer the research question and conducted in both the experimental group and control group by manual calculation as follows:

**Table 4.3**

**The Comparison Scores of Each Studentsin Experimental Group and Control Group**

Student	X	Y	X-MX	Y-MY	(X-MX) <sup>2</sup>	(Y-MY) <sup>2</sup>
1	90	55	4,5	18,5	20,25	342,25
2	95	30	9,5	-6,5	90,25	42,25



3	75	25	-10,5	-11,5	110,25	132,5
4	95	40	9,5	3,5	90,25	12,25
5	80	50	-5,5	13,5	30,25	182,25
6	80	30	-5,5	-6,5	30,25	42,25
7	90	35	4,5	-1,5	20,25	2,25
8	80	30	-5,5	-6,5	30,25	42,25
9	80	40	-5,5	3,5	30,25	12,25
10	90	30	4,5	-6,5	20,25	42,25
11	80	25	-5,5	-11,5	30,25	132,25
12	90	55	4,5	18,5	20,25	342,25
13	80	45	-5,5	8,5	30,25	72,25
14	75	45	-10,5	8,5	110,25	72,25
15	95	40	4,5	3,5	20,25	12,25
16	75	45	-10,5	8,5	110,25	72,25
17	80	35	-5,5	-1,5	30,25	2,25
18	90	25	4,5	-11,5	20,25	132,25
19	80	35	-5,5	-1,5	30,25	2,25

20	95	40	9,5	3,5	90,25	12,25
21	90	35	4,5	-1,5	20,25	2,25
22	95	30	4,5	-6,5	20,25	42,25
23	90	30	4,5	-6,5	20,25	42,25
24	80	35	-5,5	-1,5	30,25	2,25
25	80	35	-5,5	-1,5	30,25	2,25
26	95	35	9,5	-1,5	90,25	2,25
27	90	30	4,5	-6,5	20,25	42,25
28	75	30	10,5	-6,5	110,25	42,25
<b>Σ</b>	<b>2390</b>	<b>1015</b>	<b>7</b>	<b>-7</b>	<b>1307</b>	<b>1883,25</b>
<b>Mean</b>	<b>85,35714</b>	<b>36,25</b>	<b>0,25</b>	<b>-0,25</b>	<b>48,67</b>	<b>67,25</b>

The procedures of calculation are as follow:

1. Determining Mean of variable X, with formula:

$$M_x = \frac{\sum X}{N_1}$$

$$M_x = \frac{2390}{28}$$

$$M_x = 85.35$$

2. Determining Mean of variable Y, with formula :

$$M_x = \frac{1015}{28}$$

$$= 36.25$$

3. Determining Standard of Deviation Score of Variable X, with

formula:

$$\begin{aligned}
 SD_1 &= \sqrt{\frac{\sum X^2}{N_2}} \\
 &= \frac{\sqrt{205450}}{28} \\
 &= \sqrt{7337.5} \\
 &= 85.65
 \end{aligned}$$

4. Determining Standard of Deviation score of Variable Y, with

formula:

$$\begin{aligned}
 SD_2 &= \sqrt{\frac{\sum Y^2}{N_2}} \\
 &= \frac{\sqrt{38675}}{28} \\
 &= \sqrt{13831,5} \\
 &= 37.16
 \end{aligned}$$

5. Determining Standard Error Mean of Variable X, with

formula:

$$\begin{aligned}
 SE_{M_1} &= \frac{SD_1}{\sqrt{N_1-1}} \\
 &= \frac{85.65}{\sqrt{27}} \\
 &= \frac{85.65}{5.19515} \\
 &= 16.48
 \end{aligned}$$

6. Determining Standard Error Mean of Variable Y, with

formula:

$$\begin{aligned}
 SE_{M_2} &= \frac{SD_2}{\sqrt{N_1-1}} \\
 &= \frac{37.16}{\sqrt{27}} \\
 &= \frac{37.16}{5.19515} \\
 &= 2.647
 \end{aligned}$$

7. Determining Standard Error Mean of different Mean of Variable X and Mean of Variable Y, with formula:

$$\begin{aligned}
 SE_{M_1 - M_2} &= \sqrt{SE_{m_1^2} + SE_{m_2^2}} \\
 &= \sqrt{16.48^2 + 2.674^2} \\
 &= \sqrt{270.272 + 7.150276} \\
 &= \sqrt{277.422} \\
 &= 16.65
 \end{aligned}$$

8. Determining  $t_o$ , with formula:

$$\begin{aligned}
 t_o &= \frac{M_1 - M_2}{SE_{M_1 - M_2}} \\
 &= \frac{85.35 - 36.25}{16.65} \\
 &= \frac{49.1}{16.65} \\
 &= 2.94
 \end{aligned}$$

9. Determining Degrees of Freedom (df), with formula:

$$\begin{aligned} Df &= (N_1 + N_2) - 2 \\ &= (28 + 28) - 2 \\ &= 54 \end{aligned}$$

Thus the degree of freedom (df) was 54 and the critical value of df was by using the degree of significant 5% was and t table was 1,676 clearly it can be seen that the post test score of experimental group higher than the score of control group. The result of the comparison between t observe an t table is 2,94

Beside the researcher also made calculation from the scores of the experimental and control group by using SPSS calculation. In order to see the comparison of scores between the experimental group and control group, the writer took t-test measurement of gained score in both them. The post test score was calculate by computing the difference between the experimental and control group for each students. Certainly it was important to know whether the alternative hypothesis ( $H_a$ ) was accepted or rejected. It can be said that for strengthening the statistical calculation of the improvement score from the post test between experiment class and control class was by post test score.

Table 4.4

The *t*-test of Score in the Experimental Group and the Control Group

## Group Statistics

	Kelas	N	Mean	Std. Deviation	Std. Error Mean
Hasil	Experimental	28	85,3571	7,31925	1,38321
	Control	28	36,2500	8,34721	1,57747

## Independent Samples Test

	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	,030	,864	23,406	54	,000	49,107	2,098	44,900	53,313
Score Equal variances not assumed			23,406	53,093	,000	49,107	2,098	44,899	53,315



The above tables described that there was a significant difference from measurement score of the experimental and control group. Based on the result of the statistic calculation above, the score of *t<sub>observe</sub>* was 2.94. By using degree of freedom 5%, the value of 54 (the degree of significance) as stated in in the *t*- *table* was 1.674.

#### 4.5. Data Interpretation

In this section, the researcher describe the interpretation of the research finding and summarized the hypothesis. The research was held to answer the question whether the use of collaborative writing is effective to improve students' writing descriptive text at eight grade of MTs. Mathalibul Huda Mlonggo or not. In order to answer the question, the write writes the alternative Hypothesis ( $H_0$ ) as follows:

- a. The Null Hypothesis ( $H_0$ ) : there was a significant difference of students' writing descriptive text between who were taught through collaborative writing and students' who were taught without collaborative writing method.
- b. The Alternative Hypothesis ( $H_a$ ) : there was no significant difference of students' writing descriptive text between who were taught through collaborative writing and students' who were taught without collaborative writing method.
  - a. If  $t_o > t_{table}$ , the Null Hypothesis ( $H_0$ ) was rejected and alternative Hypothesis ( $H_a$ ) was accepted. It was proven that Collaborative Writing method was effective to improve students' writing skill in descriptive text.

- b. If  $t_o < t_{table}$ , the Null Hypothesis ( $H_o$ ) was accepted and alternative Hypothesis ( $H_a$ ) was rejected. It was proven that Collaborative Writing method was not effective to improve students' writing skill in descriptive text

According to the analysis of the result above, there was a significant difference between the score of experimental group and control group. Both of *t-test* result by using SPSS and manual formula were the same, although there was little different in any digit behind the comma. The result showed that the experimental group got higher score than the control group. Thus, there was a significant measurement score in experimental and control group. The data were  $M_x = 85.35$  ,  $M_y = 36.25$  ,  $SD_x = 85.65$  in manual calculation and 7,31 in SPSS,  $SD_y = 37,16$  in manual and  $SD_y = 8,34$  in SPSS and  $t(56) = 2,94$ . The result report that *t-test* was higher than *t-table* ( $2,94 > 1,67 = t_{observe} > t_{table}$ ).

The report that the *t-test* was higher than *t-table* ( $2,94 > 1,67$ ). It can be defined that teaching writing skill in descriptive text by using collaborative writing method was effective than teaching writing without collaborative writing method since alternative hypothesis ( $H_a$ ) was accepted and the null hypothesis ( $H_o$ ) was rejected. In other word, teaching writing descriptive text by using collaborative writing method gave positive influence toward students' achievement of eight grade in MTs. Mathalibul Huda Mlonggo.