

CHAPTER IV

RESEARCH FINDING AND DISCUSSION

A. Description of The Research

In this chapter, the researcher wanted to describe the result of the research based on the data collected and analyzed. The researcher wanted to find out the the effectiveness of inquiry method to teach reading of descriptive texts at 8th grade students of MTs. Nurul Huda Semarang in academic year of 2013/2014.

The research had been conducted since September 2nd of 2013 to September 30th 2013 in MTs. Nurul Huda Semarang. This research had been carried through 5 steps. They involved try out test, pre test, and post test.

To find out the result of students' acquisition of reading comprehension descriptive text material, the researcher identified some result, they were: the score of students before treatment and the differences between pre test and post test score of students. This research used an analysis of quantitative data. The data was obtained by giving test to the experimental class and control class after giving a different treatment to both classes.

Before the activities were conducted, the research determined the materials and lesson plan of learning. The researcher gave first to analyze validity, reliability, difficulty level and also the discrimination power of each item. The researcher prepared 35 items as the

instrument of the test. Try out test was given to the students who were had been got material of descriptive text. It was to the IX D class. Then the researcher did the pre test to both classes, experimental and control group. It was used to know groups were normal and had same variant.

The learning process in the experimental class used descriptive text, while the control class without using of descriptive text. After the both classes conducted the learning process, students were asked to do the assignment. This assessment was hoped to help the students to identify and remember descriptive text.

The last, students did the post test then counted to get the result of this research which analyzed to prove the truth of hypothesis that has been planned.

B. The Data Analysis

1. Analysis of Try-out Test Instrument

This discussion covered validity, reliability, difficulty level, and also discriminating power.

a. Validity of instrument

Validity was a condition in which a test could measure what was supposed to be measured. It was used to know index validity of the test. To calculate the validity of instrument, the researcher used the person product moment formula to analyze each item.

There were 35 items as the instrument of try-out test. It was obtained 20 items which were valid and 15 test items which were invalid. They were to be said invalid because the computation result of their r_{xy} value was lower than r_{table} value.

Table 4.1
Validity of Each Item

Criteria	t_{table}	Number of questions	Total
Valid	0.404	1, 3, 5, 6, 7, 8, 10, 11, 12, 14, 15, 19, 22, 24, 26, 27, 29, 30, 32, 35	20
Invalid		2, 4, 9, 13, 16, 17, 18, 20, 21, 23, 25, 28, 31, 33, 34	15

The following was item of validity computation for item number 1 and for the other items would use the same formula.

$$N = 44 \qquad \qquad \qquad \sum X^2 = 27$$

$$\sum XY = 596 \qquad \qquad \qquad \sum X = 27$$

$$\sum Y = 863 \qquad \qquad \qquad \sum Y^2 = 18389$$

$$\begin{aligned}
 r_{xy} &= \frac{N \sum XY - \sum(X) \sum(Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}} \\
 &= \frac{(44 \times 596) - (27 \times 863)}{\sqrt{\{(44 \times 27) - (27)^2\} \{(44 \times 27) - (863)^2\}}} \\
 &= 0.538
 \end{aligned}$$

From the computation above, the result computing validity of the item number 1 was 0.538 after that, the writer consulted the result to the table of r product moment with the number of subject (N) = 44 and significant level 5% it is 0.297. Because the result of the computation was higher than r_{table} , the index of validity of the item number was considered to be valid. The list of the validity of each item could be seen in appendix.

b. Reliability of instrument

A good test had to be valid and reliable. Reliability meant “consistent and dependent”.⁵⁶ Besides the index of validity, the writer calculated the reliability of the test using formula:

⁵⁶ Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan*. (Jakarta: Bumi Aksara , 2007), p. 86.

$$r_{11} = \left(\frac{k}{k-1} \right) \left(\frac{S_t^2 - \sum pq}{S_t^2} \right)$$

Before computing the reliability, the writer had to compute Variance (S^2) with the formula below:

$$\begin{aligned} S_t^2 &= \frac{X_t^2}{N} \\ x^2 &= \frac{\sum X^2 - \frac{(\sum X)^2}{N}}{N} \\ &= 18389 - \frac{(863)^2}{44} \\ &= 18389 - \frac{744769}{44} \\ &= 18389 - 16927 \\ &= 1462 \end{aligned}$$

$$s_t^2 = \frac{x_t^2}{n} = \frac{1462}{44} = 33.24$$

The computation of the total variance (S_t^2) was 28.16. After finding the total variance (S_t^2) the writer computed the reliability of the test as follows:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(\frac{S_i^2 - \sum pq}{S_i^2} \right)$$

$$r_{11} = \left(\frac{35}{35-1} \right) \left(\frac{33.24 - 8.415}{33.24} \right)$$

$$r_{11} = 0.769$$

From the computation above, it was found out that r_{11} (the total of reliability test) was 0.769, if $r_{11} \geq 0.297$, so the test was reliable and if $r_{11} \leq 0.297$, so the test was not reliable. Based on the computation, we had found that r_{11} (the total of reliability test) was 0.769, it meant $r_{11} \geq 0.297$, so the test was reliable.

c. Difficulty level

This following was the computation of the level difficulty for item number 1 and the other items would use the same formula.

The criteria :

Interval P	Criteria
0.00 < IK ≤ 0.30	Difficult
0.30 < IK ≤ 0.70	Medium
0.70 < IK < 1.00	Easy

= 27

$$\begin{aligned}
 JS &= 44 \\
 P &= \frac{B}{JS} \\
 &= \frac{27}{44} \\
 &= 0.614
 \end{aligned}$$

It was proper to say that the index difficulty of the item number 1 above could be said as the medium category, because the calculation result of the item number 1 was in the interval $0.30 \leq P < 0.70$

After computing 35 items of the try-out test, there was 1 item was considered to be easy, 34 items were medium. The whole computation result of difficulty level could be seen in appendix.

Table 4.2
Degree of Difficulty of Each Item

Criteria	Number of questions	Total
Easy	17	1
Medium	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35	34

d. Discriminating power

Item of discrimination power used to know how accurate the question differ higher subject and lower subject. The index of discriminating power told us whether those students who performed well on the whole test tended to do well or badly on each item in the test. To do this analysis, the number of try-out subjects was divided into 2 groups, upper and lower groups.

The criteria:

Interval DP	Criteria
$DP \leq 0.00$	Poor
$0.00 < DP \leq 0.20$	Failed
$0.20 < DP \leq 0.40$	Enough
$0.40 < DP \leq 0.70$	Good
$0.70 < DP \leq 1.00$	Excellent

Table 4.3

The Table of Discriminating Power of Item Number 1

Upper Group			Lower Group		
No	Code	Score	No	Code	Score
1	UC-37	1	23	UC-38	0
2	UC-44	1	24	UC-8	1
3	UC-12	1	25	UC-29	1
4	UC-13	1	26	UC-3	0
5	UC-33	1	27	UC-28	0

6	UC-31	1	28	UC-27	1
7	UC-26	1	29	UC-42	0
8	UC-32	0	30	UC-19	1
9	UC-39	1	31	UC-5	0
10	UC-24	0	32	UC-18	0
11	UC-1	1	33	UC-20	0
12	UC-43	1	34	UC-23	1
13	UC-14	1	35	UC-10	0
14	UC-30	1	36	UC-25	0
15	UC-22	1	37	UC-4	1
16	UC-6	1	38	UC-16	0
17	UC-15	1	39	UC-40	0
18	UC-34	1	40	UC-41	1
19	UC-2	0	41	UC-17	1
20	UC-36	1	42	UC-7	0
21	UC-21	1	43	UC-35	1
22	UC-9	0	44	UC-11	0
Sum		18	Sum		9

The following was the computation of the discriminating power for item number 1 and for other items would use the same formula.

$$BA = 18$$

$$BB = 9$$

$$JA = 22$$

$$JB = 22$$

$$\begin{aligned} D &= \frac{BA}{JA} - \frac{BB}{JB} \\ &= \frac{18}{22} - \frac{9}{22} \\ &= 0.409 \end{aligned}$$

According to the criteria, the item number 1 above was good, because the calculation result of the item number 1 was in the interval $0.40 < D \leq 0.70$

After computing 35 items of try-out test, there were 10 items were considered to be good 11 items were enough, 10 items were fair and 4 items were poor. The result of the discriminating power of each item could be seen appendix.

Table 4.4
Discriminating Power of Each Item

Criteria	Number of questions	Total
Poor	13, 18, 25, 28	4
Less	4, 9, 16, 17, 20, 21, 23, 31, 33, 34	10
Enough	2, 5, 6, 10, 11, 14, 15, 19, 24, 32,	11
Good	35 1, 3, 7, 8, 12, 22, 26, 27, 29, 30,	10

Based on the analysis on validity, reliability, difficulty level and discriminating power, finally 21 were accepted. From 21 items, only 20 items were used as instrument to make the scoring easy. They were number 1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 25.

2. Analysis of Pre-test Score of the Experimental Class and the Control Class

Before the experiment was conducted, the researcher gave students pre-test consisting of 20 multiple choice items. The analysis of pre-test value of control and experimental class, as follow:

Table 4.5
The list of pre-test score of the experimental class and the control class

Control Class			Experimental Class		
No	Code	Score	No	Code	Score
1	C-1	55	1	E-1	60
2	C-2	60	2	E-2	70
3	C-3	40	3	E-3	45
4	C-4	50	4	E-4	65
5	C-5	55	5	E-5	60

6	C-6	45	6	E-6	70
7	C-7	55	7	E-7	60
8	C-8	35	8	E-8	45
9	C-9	60	9	E-9	65
10	C-10	60	10	E-10	70
11	C-11	40	11	E-11	50
12	C-12	50	12	E-12	60
13	C-13	50	13	E-13	50
14	C-14	45	14	E-14	65
15	C-15	45	15	E-15	55
16	C-16	55	16	E-16	60
17	C-17	50	17	E-17	65
18	C-18	45	18	E-18	55
19	C-19	65	19	E-19	55
20	C-20	55	20	E-20	60
21	C-21	40	21	E-21	70
22	C-22	45	22	E-22	65
23	C-23	50	23	E-23	65
24	C-24	35	24	E-24	60

25	C-25	65	25	E-25	60
26	C-26	55	26	E-26	50
27	C-27	55	27	E-27	60
28	C-28	60	28	E-28	45
29	C-29	55	29	E-29	60
30	C-30	50	30	E-30	55
31	C-31	60	31	E-31	60
32	C-32	60	32	E-32	50
33	C-33	55	33	E-33	60
34	C-34	50	34	E-34	55
35	C-35	50	35	E-35	55
36	C-36	45	36	E-36	60
37	C-37	55	37	E-37	50
38	C-38	65	38	E-38	75
39	C-39	55	39	E-39	55
40	C-40	35	40	E-40	55
41	C-41	60	41	E-41	65
42	C-42	45	42	E-42	60
43	C-43	40	43	E-43	55

44	C-44	60	44	E-44	70
45	C-45	55	45	E-45	65
46	C-46	55	46	E-46	75
47	C-47	55	47	E-47	60
Σ	=	2425	Σ	=	2800
N	=	47	N	=	47
X	=	51.60	X	=	59.57
S^2	=	64.25	S^2	=	55.25
S	=	8.02	S	=	7.43

a. The normality of pre test of the control class

Test of normality was used to find out whether data of control and experimental class which had been collected from the research came from normal distribution or not. The result computation of Chi-square (X^2_{count}) then was compared with table of Chi-square (X^2_{table}) by using 5% alpha of significance. If $X^2_{count} < X^2_{table}$ meant that the data spread of research result distributed normally.

Hypothesis:

H_1 : Data distributed normally

H₀: Data did not distribute normally
 Ho accepted if $\chi^2_{count} < \chi^2_{table}$ with $\alpha = 5\%$ and

$$dk=k-1$$

Test of hypothesis:

The formula is used:

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Computation of normality test:

Length of the class = 4.756

Maximum score = 65

Minimum score = 35

K / Number of class = 6

Range = 31

Table 4.6
Distribution value of pre-test of the control class

Class			f _i	X _i	X _i ²	f _i ·X _i	f _i ·X _i ²
35	–	40	7	37	1397	262	9780
41	–	46	7	43	1861	302	13024
47	–	51	8	49	2390	391	19122
52	–	57	14	55	2986	765	41807
58	–	63	8	60	3648	483	29188
64	–	69	3	66	4377	198	13131
Total			47			2401	126052

Table 4.7
Observation frequency value of pre test of the control class

the list of frequency value of control class

Class	Bk	Z_i	$P(Z_i)$	Wide of area	E_i	f_i	$\frac{(f_i - E_i)}{E_i}$
	34.5	-2.13	0.0165				
35 - 40				0.0621	2.9	7	5.706
	40.3	-1.41	0.0786				
41 - 46				0.1645	7.7	7	0.069
	46.0	-0.70	0.2430				
47 - 51				0.2656	12.5	8	2.510
	51.8	0.02	0.5086				
52 - 57				0.2617	12.3	14	0.236
	57.5	0.74	0.7702				
58 - 63				0.1573	7.4	8	0.050
	63.3	1.46	0.9276				
64 - 69				0.0577	2.7	3	0.031
	69.0	2.18	0.9852				
$\chi^2 =$						8.601	

For $\alpha = 5\%$, with $dk = 6 - 1 = 5$ was obtained $\chi^2_{table} =$

11.07

Because $\chi^2_{count} < \chi^2_{table}$, so the distribution data was normal

With $\alpha = 5\%$ $dk = 6 - 1 = 5$ from the chi-square distribution table, obtained $\chi^2_{table} = 11.07$ because χ^2_{count} was lower than χ^2_{table} ($8.601 < 11.07$) so, the distribution list was normal.

b. The normality of pre test of the experimental class

Hypothesis:

H_1 : Data distributed normally

H_0 : Data did not distribute normally

H_0 accepted if $\chi^2_{count} < \chi^2_{table}$ with $\alpha = 5\%$ and $dk = k - 1$

Test of hypothesis:

The formula is used:

$$X^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

The computation of normality test:

- Length of the class = 4
- Maximum score = 75
- Minimum score = 45
- K / Number of class = 6
- Range = 31

Table 4.8
Distribution value of pre-test of the experimental class

Class			f_i	X_i	X_i^2	$f_i \cdot X_i$	$f_i \cdot X_i^2$
45	-	50	8	47.37806	2244.680	379.024	17957
51	-	56	9	53.13417	2823.241	478.208	25409
57	-	61	15	58.89029	3468.066	883.354	52020
62	-	67	8	64.64641	4179.158	517.171	33433
68	-	73	5	70.40252	4956.515	352.013	24782
74	-	79	2	76.15864	5800.138	152.317	11600
Total			47			2762.088	165203

Table 4.9

Observation frequency value of pre-test of the experimental class
the list of frequency value of control class

Class	Bk	Z _i	P(Z _i)	Wide of area	E _i	O _i	$\frac{(O_i - E_i)^2}{E_i}$
	44.5	-2.03	0.0213				
45 – 50				0.4163	19.6	8	6.8368
	50.3	-1.25	-0.3950				
51 – 56				0.2109	9.9	9	0.0839
	56.0	-0.48	-0.1841				
57 – 61				0.3002	14.1	15	0.0563
	61.8	0.30	0.1161				
62 – 67				0.2415	11.4	8	0.9897
	67.5	1.07	0.3576				
68 – 73				0.1098	5.2	5	0.0050
	73.3	1.84	0.4674				
74 – 79				0.0282	1.3	2	0.3447
	79.0	2.62	0.4956				
						X ² =	8.3165

For a = 5%, with dk = 6 - 1 = 5 was obtained X² table =

11.07

Because X² count < X² table, so the distribution data was normal

With $\alpha = 5\%$ dk = 6 - 1 = 5 from the chi-square distribution table, obtained $X_{table} = 11.07$ because X_{count}^2 was lower than X_{table}^2 (8.3165 < 11.07). So, the distribution list was normal

- c. The homogeneity of pre test of the control class and the experimental class

The homogeneity test was used to know whether the group sample that was taken from population was homogeneous or not. In this research, the homogeneity of the test was measured by comparing the obtained score (f_{count}) with (f_{table}).

Ho : $\sigma_1^2 = \sigma_2^2$ (homogeny variance)

H1 : $\sigma_1^2 \neq \sigma_2^2$ (non homogeny variance)

Ho was accepted if $f_{count} < f_{table}$

Data of the research:

Source of Variant	Control class (VIII C)	Experimental class (VIII D)
Sum	2800	2425
N	47	47
\bar{X}	59.57	51.60
Variant (S^2)	55.25	64.25
Standard of deviation (S)	7.43	8.02

By knowing the mean and the variant, the researcher was able to test the similarity of the two variants in the pre test between experimental and control class. The computation of the test of homogeneity was as follows:

$$F = \frac{\text{biggest variance}}{\text{smallest variance}}$$

$$F = \frac{64.25}{55.25}$$

$$= 1.16$$

On a 5 % with dk numerator $(k-1) = 47-1 = 46$ and dk denominator $(k-1) = 47-1 = 46$ it was found $f_{table(0.05)(47/47)} = 1.63$ because of $(f_{count}) < (f_{table})$, so it could be concluded that both experimental and control class had no differences. The result showed both classes had similar variants or homogenous.

- d. Testing the similarity of average of the initial data between the experimental class and the control class

To test the similarity of average used t-test.

$$H_0 = \mu_1 = \mu_2$$

$$H_a = \mu_1 \neq \mu_2$$

Where:

μ_1 : average data of experimental group

μ_2 : average data of control group

The researcher used formula:

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

The average similarity test of pre test of the experimental class and the control class

Source of Variant	Experimental class	Control class
Sum	2800	2425
N	47	47
\bar{X}	59.57	51.60
Varians (S^2)	55.25	64.25
Standard of deviation (S)	7.43	8.02

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

$$s_2 = \sqrt{\frac{[47 - 1] 55.250 + [47 - 1] 64.246}{47 + 47 - 2}} = 7.730$$

So, the computation of t-test:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$t = \frac{59.57 - 51.60}{7.730 \sqrt{\frac{1}{47} + \frac{1}{47}}} = 5.004$$

Based on the computation above, $t_{count} = 5.004$ and opportunity $(1 - \alpha)$ from the distribution t , we got $t_{table} = 1,980$ with $\alpha = 5\%$, and $dk = 47 + 47 - 2 = 92$ because $t_{count} > t_{table}$, so it could be concluded that there was significance of difference between the experimental and control group. It meant that experimental group was better than control group after getting treatments.

3. Analysis of Post-test Score of the Experimental Class and the Control Class

The experimental class was given post-test on 24th September 2013. Control class was given post-test 26th September 2013 post test was given after all treatments were done. Inquiry Method was used as technique in teaching descriptive text in experimental class. While for students in control class, they gave treatment without using inquiry method.

This analysis contains of normality test, homogeneity test and the difference average test of post-test.

Table 4.10
The list of post-test Score of the experimental class and the control class

Control Class			Experimental Class		
No	Code	Score	No	Code	Score
1	C-1	50	1	E-1	70
2	C-2	45	2	E-2	80
3	C-3	55	3	E-3	60
4	C-4	55	4	E-4	65
5	C-5	55	5	E-5	75
6	C-6	50	6	E-6	75
7	C-7	60	7	E-7	65
8	C-8	40	8	E-8	60
9	C-9	65	9	E-9	70
10	C-10	65	10	E-10	75
11	C-11	50	11	E-11	60
12	C-12	50	12	E-12	70
13	C-13	55	13	E-13	65

14	C-14	55	14	E-14	80
15	C-15	60	15	E-15	75
16	C-16	60	16	E-16	80
17	C-17	55	17	E-17	75
18	C-18	45	18	E-18	70
19	C-19	50	19	E-19	65
20	C-20	60	20	E-20	70
21	C-21	60	21	E-21	75
22	C-22	65	22	E-22	75
23	C-23	50	23	E-23	80
24	C-24	40	24	E-24	75
25	C-25	50	25	E-25	70
26	C-26	60	26	E-26	80
27	C-27	50	27	E-27	60
28	C-28	45	28	E-28	60
29	C-29	65	29	E-29	75
30	C-30	65	30	E-30	75
31	C-31	60	31	E-31	70
32	C-32	45	32	E-32	80

33	C-33	60	33	E-33	80
34	C-34	45	34	E-34	70
35	C-35	50	35	E-35	70
36	C-36	45	36	E-36	65
37	C-37	60	37	E-37	75
38	C-38	65	38	E-38	75
39	C-39	60	39	E-39	80
40	C-40	40	40	E-40	65
41	C-41	65	41	E-41	75
42	C-42	50	42	E-42	70
43	C-43	50	43	E-43	60
44	C-44	65	44	E-44	65
45	C-45	50	45	E-45	70
46	C-46	55	46	E-46	75
47	C-47	55	47	E-47	75
Σ	=	2550	Σ	=	3350
<i>N</i>	=	47	<i>N</i>	=	47
<i>X</i>	=	54.26	<i>X</i>	=	71.28

S^2	=	56.50	S^2	=	40.73
S	=	7.52	S	=	6.38

- a. The normality of post test of the control class

The normality test was used to know whether the data was normally distributed or not. Test data of this research used the formula of Chi-square.

Hypothesis:

H_1 : Data distributed normally

H_0 : Data did not distribute normally

Ho accepted if $X_{count}^2 < X_{table}^2$ with $\alpha = 5\%$ and $dk=k-1$

Test of hypothesis:

The formula is used:

$$X^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

The computation of normality test:

Length of the class = 4
Maximum score = 65
Minimum score = 40
K / Number of class = 6

Range = 25

Table 4.11
Distribution value of post-test of the control class

Class			f_i	X_i	X_i^2	$f_i \cdot X_i$	$f_i \cdot X_i^2$
40	-	44	3	41.918	1757.101	125.753	5271.303
45	-	49	6	46.753	2185.877	280.520	13115.264
50	-	54	12	51.589	2661.419	619.067	31937.030
55	-	58	8	56.425	3183.727	451.396	25469.813
59	-	63	10	61.260	3752.800	612.601	37527.998
64	-	68	8	66.096	4368.639	528.765	34949.109
Class			47			2618.103	148270.517

Table 4.12
Observation frequency value of post-test of the control class
the list of frequency value of control class

Class	Bk	Z_i	$P(Z_i)$	Wide of area	E_i	O_i	$\frac{(O_i - E_i)^2}{E_i}$
	39.5	-2.16	-0.4845				
40 -	44			0.0497	2.3	3	0.190
	44.3	-1.51	-0.4348				
45 -	49			0.1272	6.0	6	0.000
	49.2	-0.87	-0.3076				
50 -	54			0.2183	10.3	12	0.295
	54.0	-0.23	-0.0893				
55 -	58			0.2512	11.8	8	1.227
	58.8	0.42	0.1618				
59 -	63			0.1938	9.1	10	0.087
	63.7	1.06	0.3556				
64 -	68			0.1002	4.7	8	2.298
	68.5	1.70	0.4558				
					$\chi^2 =$		4.098

For $\alpha = 5\%$, with $dk = 6 - 3 = 3$ was obtained χ^2 table =
Because χ^2 count $<$ χ^2 table, so the distribution data was normal

7.81

With $\alpha = 5\%$ $dk = 6 - 3 = 3$ from the chi-square
distribution table, obtained $\chi_{table} = 7.81$

because X_{count}^2 was lower than X_{table}^2 ($4.781 < 7.81$).

So, the distribution list was normal

- b. The normality of post test of the experimental class

Hypothesis:

H_1 : Data distributed normally

H_0 : Data did not distribute normally

H_0 accepted if $X_{count}^2 < X_{table}^2$ with $\alpha = 5\%$ and $dk = k - 1$

Test of hypothesis:

The formula was used:

$$X^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

The computation of normality test:

Length of the class = 3

Maximum score = 80

Minimum score = 60

K / Number of class = 6

Range = 20

Table 4.13

Distribution value of post-test of the experimental class

Class			f_i	X_i	X_i^2	$f_i \cdot X_i$	$f_i \cdot X_i^2$
60	-	63	6	61.702	3807.170	370.214	22843.023
64	-	68	7	66.107	4370.111	462.748	30590.779
69	-	72	11	70.511	4971.852	775.625	54690.375
73	-	77	15	74.916	5612.393	1123.739	84185.898
78	-	81	8	79.320	6291.734	634.564	50333.873
82	-	85	0	83.725	7009.875	0.000	0.000
Class			47			3366.889	242643.948

Table 4.14

Observation frequency value of post-test of the experimental class
the list of frequency value of control class

Class	Bk	Z _i	P(Z _i)	Wide of area	E _i	O _i	$\frac{(O_i - E_i)^2}{E_i}$
	59.5	-1.85	-0.4675				
60 -	63			0.0915	4.3	6	0.6709
	63.9	-1.16	-0.3760				
64 -	68			0.1970	9.3	7	0.5503
	68.3	-0.47	-0.1790				
69 -	72			0.2681	12.6	11	0.2035
	72.7	0.23	0.0891				
73 -	77			0.2309	10.9	15	1.5844
	77.1	0.92	0.3200				
78 -	81			0.1258	5.9	8	0.7364
	81.5	1.61	0.4458				
82 -	85			0.0433	2.0	0	2.0370
	85.9	2.30	0.4892				
						$\chi^2 =$	5.7826

For a = 5%, with dk = 6 - 1 = 5 was obtained X² table =

11.07

Because X² count < X² table, so the distribution data was normal

With $\alpha = 5\%$ dk = 6-1=5 from the chi-square distribution table, obtained $X_{table} = 11.07$ because X_{count}^2 is lower than X_{table}^2 (5.7826 < 11.07). So, the distribution list was normal.

- c. The homogeneity of post test of the control class and the experimental class

The researcher determined the mean and variant of the students' score either in experimental or control class. By knowing the

mean and the variant, the researcher was able to test the similarity of the two variants in the post test between experimental and control class

Ho : $\sigma_1^2 = \sigma_2^2$ (homogeny variance)

H1 : $\sigma_1^2 \neq \sigma_2^2$ (non homogeny variance)

Ho was accepted if $f_{count} < f_{table}$

Data of the research:

Source of varians	Experimental	Control
Sum	3350	2550
N	47	47
\bar{x}	71.277	54.255
Varians (s^2)	40.726	56.499
Standard of deviation (s)	6.382	7.517

The computation of the test of homogeneity was as follows:

$$F = \frac{\textit{biggest variance}}{\textit{smallest variance}}$$

$$F = \frac{54.255}{40.726}$$

$$= 1.387$$

On á 5 % with dk numerator (k-1) = 47-1=46 and dk denominator (k-1) = 47-1= 46 it was found

$f_{table} (0.05)(47/47) = 1.632$ because of $(f_{count}) < (f_{table})$,

so it could be concluded that both experimental and control class had no differences. The result showed both classes had similar variants or homogenous.

- e. Testing the difference of average of the final data between the experimental class and the control class

To test the differences of average used t-test.

$$H_0 = \mu_1 \leq \mu_2$$

$$H_a = \mu_1 > \mu_2$$

Where:

μ_1 : average data of experimental group

μ_2 : average data of control group

The researcher used formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

The average difference test of post-test of the experimental class and the control class

Source of variation	Experimental	Control
Sum	3350	2550
$\frac{N}{x}$	47	47
\bar{x}	71.28	54.26
Varians (s^2)	40.73	56.50
Standard of deviation (s)	6.38	7.52

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

$$s = \sqrt{\frac{[47 - 1] 40.726 + [47 - 1] 56.499}{47 + 47 - 2}} = 6.9723$$

So, the computation of t-test

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

t	=	$\frac{71,28}{6,9723}$	-	$\frac{54,26}{\sqrt{\frac{1}{47} + \frac{1}{47}}}$	=	11,835
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After getting t-test result, then it would be consulted to the critical score of t_{table} to check whether the difference was significant or not. For $\alpha = 5\%$ with $dk = 47$ it was found $t_{table} = 1,980$ because of $t_{count} > t_{table}$, so it could be concluded that there was significance difference between the experimental and control class. It meant that experimental class was better than control class after getting all treatments.

C. Discussion of research finding

The objectives of this research were to find out the students' achievement of descriptive text who have been taught using inquiry method and non inquiry method and whether there was difference between students' achievement of descriptive text of students who had been taught through inquiry method and had been taught through non inquiry method at The Eighth Grade of MTs NU Nurul Huda Semarang in the Academic Year of 2013/2014.

In the pre-test, the average scores of the control group and the experimental group were 51.60 and 59.57. From the pre-test, it could be said that the ability of the two groups was relatively the same. From the scores, it could be concluded that the two groups were homogeneous, because there was only slight difference in the pre-test result between the control group and the experimental class.

After they received the treatment, the average score of the experimental group was higher than the control group. The experimental group got 71.277 and the control group got 54.255.

Table 4.15

The pre test and post test students' average scores of the control and the experimental class

No	Class	The average of pre test	The average of post test
1	Experimental	59.57	71.277
2	Control	51.60	54.255

From the table above, it could be seen that the students' achievement of preposition was increasing. The percentage of rise in score of the pre-test and the post-test score of the experimental group was higher than the score of the control group.

Based on the result of calculation t-test above, it meant that there was a significant difference between students' achievement of preposition of students who have been taught through inquiry method and have been taught through non inquiry method.

The students' achievement of preposition influenced by learning method, it could be said it is concern with the theory of constructivism. Constructivism theory asserts that absolute knowledge gained from the cognitive construction in

a person; through experience received through the senses of sight, hearing, touch, smell, and taste.⁵⁷

In the control class, students were taught using conventional method, so there was not new experience to students. Teacher used blackboard and chalk as aid in the teaching learning process. Students could not enjoy in learning process. In the experimental class, students were taught inquiry method in the treatment. By using text descriptive as a teaching medium and inquiry as the technique, the attention of students more focused and it could create situation in teaching descriptive text more interesting and made the students easier to understand the lesson.

⁵⁷ Wiji Suwarno, *Dasar-Dasar Ilmu Pendidikan*, (Jogjakarta: Ar-ruz Media, 2009), p.58.