CHAPTER IV RESEARCH FINDING AND ANALYSIS

A. Descriptions of the Research Findings

In this chapter the writer describes the result of the research based on the collected and analyzed data. The purpose of the research was to measure the effectiveness of using Diction Chain Technique to teach writing of descriptive text at the tenth grade of MA Darul Ulum Semarang. The writer gathered data from 17th February to 27th February 2016. The data was obtained by giving test to the experimental class and control class.

The subjects of this research were divided into two classes. They were experimental class (X A) and control class (X B). Experimental class received a new treatment but the control class did not receive the new treatment. At last, the writer got class X A which consisted of 30 students as experimental group and X B which consisted of 30 students as control group. The number of students was gained from the documentation of the school by the English teacher's help.

The writer gave pre-test on 18th February and 20th February 2016 in control and experimental class. After giving pretest, the writer determined the materials and lesson plans of learning activities. Pre-test was conducted to both classes to know that two classes were normal and homogeneous. After knowing the control class and experimental class had same variant. The writer prepared lesson plan and material to learning activity. The writer conducted treatment in experimental class and control class on 22nd and 24th February 2016. The experimental class was taught by using Diction Chain Technique and the control class was taught by using usual teaching learning method.

After giving the treatment in experimental class and usual teaching in control class, the writer gave post-test by performing short simple descriptive text. The writer gave post-test on 25th and 27th February 2016. Post-test was given to know the effectiveness of using Diction Chain technique in teaching writing of descriptive text.

B. Data Analysis of the Research

1. Analysis of Pre-Test Score of the Experimental and Control Class.

Before doing the treatmentt, the writer gave students pre-test. The analysis of pre-test value of experimental and control class, as follow:

	PRE-TEST SCORE										
C	CONTROL (X B) EXPERIMENT (X A)										
NO	CODE	SCORE	NO	CODE	SCORE						
1	C-1	45	1	E-1	65						
2	C-2	65	2	E-2	60						

Table 4.1

3	C-3	75	3	E-3	65
4	C-4	55	4	E-4	70
5	C-5	60	5	E-5	60
6	C-6	75	6	E-6	75
7	C-7	60	7	E-7	70
8	C-8	60	8	E-8	55
9	C-9	70	9	E-9	80
10	C-10	55	10	E-10	60
11	C-11	60	11	E-11	65
12	C-12	70	12	E-12	70
13	C-13	55	13	E-13	50
14	C-14	70	14	E-14	55
15	C-15	60	15	E-15	65
16	C-16	65	16	E-16	75
17	C-17	70	17	E-17	55
18	C-18	55	18	E-18	70
19	C-19	70	19	E-19	50
20	C-20	70	20	E-20	65
21	C-21	60	21	E-21	75
22	C-22	55	22	E-22	45
23	C-23	60	23	E-23	75
24	C-24	55	24	E-24	40
25	C-25	80	25	E-25	60
26	C-26	50	26	E-26	80
27	C-27	50	27	E-27	50
28	C-28	50	28	E-28	50
29	C-29	60	29	E-29	60
30	C-30	50	30	E-30	60
jumlah		1835			1875
n	n				30
X rata2		61.16667			62.5
Varians	(s2)	77.040			108.1897
Standar of	devisiasi				
(S)		8.777256			10.40143

a. Normality Test of Pre-Test for Experimental Class

The normality test is used to know whether the data is normally distributed or not. To find out the distribution data is used normality test with Chi-square.

Hypothesis:

H_o: Data Distributed Normally

H_a: Data did not Distribute Normally

H_o Accepted if $\chi^2_{count} < \chi^2_{table}$ with $\alpha = 5\%$ and dk – k-3

Test of Hypothesis:

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

The computation of normally test:

Maximum Score	: 80.00
Minimum Score	: 40.00
Range (R)	: 40.00
Class width (k)	: 6.00 classes

Length of class (P): 7.00

Table 4.2Observation Frequency Value of Pre-Test of the
Experimental Class

Kelas		Bk	$\mathbf{Z}_{\mathbf{i}}$	P(Z _i)	Luas Daerah	Ei	Oi	$\frac{\left(O_i - E_i\right)^2}{E_i}$	
			39.5	-2.14	-0.4839				
40	-	47		0.34		0.0642	1.9	2	0.0028
			47.5	-1.40	-0.4197				
48	-	55		0.40		0.1729	5.2	7	0.6349
			55.5	-0.66	-0.2468				
56	_	63		0.47		0.2762	8.3	6	0.6312
			63.5	0.07	0.0294				

64	_	71		0.54		0.2622	7.9	9	0.1633
			71.5	0.81	0.2916				
72	_	79		0.61		0.1478	4.4	4	0.0427
			79.5	1.55	0.4395				
80	_	87		0.68		0.0495	1.5	2	0.1794
			87.5	2.29	0.4890		0.0989		
							χ^2	=	1.65

With $\alpha = 5\%$ dk = 6 - 3 = 3 from the chi-square

distribution table, $\chi^2_{table} = 7.81$

Because χ^2_{count} (1.65) was lower than χ^2_{table} (7.81) so the distribution list was normal.

b. Normality Test of Pre-test for Control Class

Hypothesis:

H_o: Data Distributed Normally

H_a: Data did not Distribute Normally

H_o Accepted if $\chi^2_{\text{count}} < \chi^2_{table}$ with $\alpha = 5\%$ and dk – k-3

Test of Hypothesis:

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

The computation of normally test:

Maximum Score	: 80.00
Minimum Score	: 45.00
Range (R)	: 35.00
Class width (k)	: 6.00 classes
Length of class (P)): 6.00

	Control Class											
	Kela	5	Bk	Z_i	P(Z _i)	Luas Daerah	Ei	Oi	$\frac{(O_i - E_i)^2}{E}$			
			44.5	-1.85	-0.4680				L_i			
45	_	51		0.54		0.1080	3.2	5	0.9568			
			51.5	-1.08	-0.3600							
52	-	58		0.63		0.2388	7.2	6	0.1891			
			58.5	-0.31	-0.1212							
59	—	65		0.71		0.2995	9.0	10	0.1144			
			65.5	0.46	0.1783							
66	-	72		0.80		0.2132	6.4	6	0.0245			
			72.5	1.23	0.3915							
73	_	79		0.88		0.0861	2.6	2	0.1312			
			79.5	2.01	0.4776							
80	_	86		0.97		0.0197	0.6	1	0.2845			
]			86.5	2.78	0.4973		0.0197					
							χ^2	=	1.70			

Table 4.3Observation Frequency Value Of Pre-Test of the
Control Class

With $\alpha = 5\%$ dk = 6 - 3 = 3 from the chi-square

distribution table, $\chi^2_{table} = 7.81$

Because χ^2_{count} (1.70) was lower than χ^2_{table} (7.81) so the distribution list was normal.

c. Homogeneity Test of Pre-Test

The statistic formula which is used to test the homogeneity of the sample is F test. The formula is as follow:

 $F = \frac{Biggest \, Variance}{Smallest \, Variance}$

The hypotheses in homogeneity test are:

$$H_o: \sigma_1^2 = \sigma_2^2$$
, homogeny variant
 $H_a: \sigma_1^2 \neq \sigma_2^2$, non homogeny variant

The calculation result of F count is lower than F_{table} (F_{count} $< F_{table}$) by 5% degree of significant so H_o is accepted, it means the data is homogeneous or both of groups have the same variance.

Experimental and Control Class								
Variance Source Control Experimental								
Sum of Score ($\sum X$)	1835	1875						
The number of students	30	30						
Average (x)	61.167	62.500						
Variance (s^2)	77.040	108.190						

Table 4.4

From the calculation of variance in the experimental and control class, it is known that the biggest variance was 108.190 and the smallest variance was 77.040, so that:

8.777

10.401

$$F = \frac{108.1897}{77.0402} = 1.404$$

Deviation standard (s)

By using $\alpha = 5\%$ and dk numeration= 30 - 1 = 29, dkdenominator = 30 - 1 = 29, it was found $F_{table} = 1.861$. Since the F_{count} (1.404) < F_{table} (1.861), so H_o was accepted meaning that both classes; experimental and control class had similar variance and homogeneous.

d. Testing the similarity of Average of the Initial Data between Experimental and Control Class

To test the difference of average the writer used ttest.

 $H_o:\mu_1\ =\ \mu_2$

 $H_a: \mu_1 \neq \mu_2$

Where:

 μ_1 : average data of experimental class

 μ_2 : average data of control class

Table 4.5The Average Similarity Test of Pre-Test in
Experimental and Control Classes

Source of Variance	Control	Experimental	Criteria
Sum	1835	1875	
Ν	30	30	
Average (x)	61.167	62.500	H_o
Variance (S^2)	77.040	108.190	accepted
Standard	8.777	10.401	(same)
Deviation (S)			

The used formula:

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

with,

$$S = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

According to the formula above, it is obtained that:

$$s = \sqrt{\frac{(30-1)108.19+(30-1)77.04}{30+30-2}}. = 9.62$$
$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$
$$t = \frac{62.50 - 61.17}{9.62\sqrt{\frac{1}{30} + \frac{1}{30}}} = 0.537$$

With $\alpha = 5\%$ and dk = 30+30-2= 58, obtained $t_{table} = 2.0017$. From the result of calculation t-test, $t_{count} = 0.537$. Because t_{count} was lower than t_{table} (0.537 < 2.0017), so H_o was accepted. It means that both of classes were homogeneous.

2. Analysis of Post-Test Score of the Experimental and Control Class

The analysis contains of normally test, homogeneity test and difference average test of post-test.

POST TEST SCORE											
CC	CONTROL (X B) EXPERIMENTAL (X A)										
NO	CODE	SCORE	N0	CODE	SCORE						
1	C-1	75	1	E-1	90						
2	C-2	70	2	E-2	80						
3	C-3	55	3	E-3	75						
4	C-4	65	4	E-4	75						
5	C-5	60	5	E-5	70						
6	C-6	50	6	E-6	75						
7	C-7	65	7	E-7	70						

Table 4.6

8	C-8	50	8	E-8	75
9	C-9	65	9	E-9	90
10	C-10	70	10	E-10	80
11	C-11	65	11	E-11	65
12	C-12	80	12	E-12	80
13	C-13	70	13	E-13	85
14	C-14	80	14	E-14	70
15	C-15	65	15	E-15	70
16	C-16	65	16	E-16	85
17	C-17	75	17	E-17	65
18	C-18	55	18	E-18	90
19	C-19	80	19	E-19	60
20	C-20	60	20	E-20	65
21	C-21	75	21	E-21	70
22	C-22	55	22	E-22	60
23	C-23	70	23	E-23	90
24	C-24	65	24	E-24	55
25	C-25	85	25	E-25	85
26	C-26	55	26	E-26	90
27	C-27	45	27	E-27	50
28	C-28	60	28	E-28	55
29	C-29	70	29	E-29	90
30	C-30	55	30	E-30	60
jumlah		1955			2220
n		30			30
X rata2		65.1667			74
Varians(s	(2)	100.833			145.517
Standar d	levisiasi				
(S)		10.0416			12.0631

a. The Normality of Post-test for Experimental Class

 H_o : the data of normal distribution

 H_a : the data of abnormal distribution with criteria:

H_o accepted if $\chi^2_{count} < \chi^2_{table}$ *H_o* rejected if $\chi^2_{count} > \chi^2_{table}$ With α = 5% and dk = k-3

Test of Hypothesis:

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

The computation of normally test:

Maximum Score : 90.00

Minimum Score : 50.00

Range (R) : 40.00

Class width (k) : 6.00 classes

Length of class (P): 7.00

Table 4.7 Observation Frequency Value of Post-Test of the Experimental Class

ł	Kelas	5	Bk	Z_i	P(Z _i)	Luas Daerah	Ei	Oi	$\frac{(O_i - E_i)^2}{E}$	
			49.5	-1.90	-0.4712				E_i	
50	_	57		0.28		0.0692	2.1	3	0.4098	
			57.5	-1.29	-0.4020					
58	_	65		0.33		0.1481	4.4	6	0.5465	
			65.5	-0.69	-0.2539					
66	_	73		0.38		0.2217	6.7	5	0.4098	
			73.5	-0.08	-0.0322					
74	_	81		0.42		0.2325	7.0	7	0.0001	
			81.5	0.53	0.2003					
82	_	89		0.47		0.1707	5.1	3	0.8792	
			89.5	1.13	0.3710					

90	_	97		0.51		0.0878	2.6	6	4.3003
			97.5	1.74	0.4588		0.5269		
							χ^2	=	6.55

With $\alpha = 5\%$ dk = 6 - 3 = 3 from the chi-square distribution table, obtained $\chi^2_{table} = 7.81$ and $\chi^2_{count} = 6.55$. Because χ^2_{count} (6.55) was lower than χ^2_{table} (7.81) so the distribution list was normal.

b. The Normality of Post-test of the Control Class Hypothesis:

Ho: Data Distributed Normally

H_a: Data did not Distribute Normally

H_o Accepted if $\chi^2_{count} < \chi^2_{table}$ with $\alpha = 5\%$ and dk – k-3

Test of Hypothesis:

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

The computation of normally test:

Maximum Score	: 85.00
Minimum Score	: 45.00
Range (R)	: 40.00
Class width (k)	: 6.00 classes
Length of class (P)	: 7.00

Table 4.8

Kelas		Bk	Z_i	P(Z _i)	Luas Daerah	Ei	Oi	$\frac{(O_i - E_i)^2}{E}$	
			44.5	-2.01	-0.4776				L _i
45	_	52		0.41		0.0861	2.6	3	0.0677
			52.5	-1.23	-0.3915				
53	_	60		0.49		0.2132	6.4	8	0.4022
			60.5	-0.46	-0.1783				
61	_	68		0.56		0.2995	9.0	7	0.4389
			68.5	0.31	0.1212				
69	-	76		0.64		0.2388	7.2	8	0.0976
			76.5	1.08	0.3600				
77	-	84		0.71		0.1080	3.2	3	0.0177
			84.5	1.85	0.4680				
85	_	92		0.79		0.0277	0.8	1	0.0349
			92.5	2.62	0.4957		0.0277		
							χ^2	=	1.06

Observation Frequency Value of Post-Test of the Control Class

With $\alpha = 5\%$ dk = 6 - 3 = 3 from the chi-square distribution table, obtained $\chi^2_{table} = 7.81$ and $\chi^2_{count} = 1.06$. Because χ^2_{count} (1.06) was lower than \div^2_{table} (7.81) so the distribution list was normal.

c. The Homogeneity of Post-Test of the Experimental and Control Class

The statistic formula which is used to test the homogeneity of the sample is F test. The formula is as follow:

 $F = \frac{Biggest Variance}{Smallest Variance}$ $H_o: \dot{o}_1^2 = \dot{o}_2^2, \text{ homogeny variant}$ $H_a: \dot{o}_1^2 \neq \dot{o}_2^2, \text{ non homogeny variant}$

The calculation result of F_{count} is lower than F_{table} ($F_{count} < F_{table}$) by 5% degree of significant so H_o is accepted, it means the data is homogeneous or both of groups have the same variance.

Table 4.9

Variance Source	Control	Experimental			
Sum of Score $(\sum X)$	1955	2220			
The number students (n)	30	30			
Average (x)	65.167	74.000			
Variance (s^2)	100.833	145.517			
Deviation Standard (s)	10.042	12.063			

The Data Source of Homogeneity Test in the Experimental and Control Class

From the calculation of variance in experimental and control class, it is known that the biggest variance was 145.517 and the smallest variance was 100.833, so, that:

$$F = \frac{145.517}{100.833} = 1.443$$

By using $\alpha = 5\%$ and dk numeration= 30 - 1 = 29, dk denominator = 30 - 1 = 29, it was found $F_{table} = 1.861$. Since the F_{count} (1.443) < F_{table} (1.861), so H_o was accepted. It means that both classes; experimental and control class had similar variance and homogeneous.

d. Testing the Differences of Average of the Initial Data between Experimental and Control Class

To test the difference of average the writer used t-

test.

$$H_o: \hat{i}_1 \leq \hat{i}_2$$

$$H_a: \hat{i}_1 > \hat{i}_2$$

Where:

 \hat{i}_1 : average data of experimental class

 \hat{i}_2 : average data of control class

Table 4.10

The Average Differences Test of Post-Test in Experimental and Control Classes

Source of Variance	Control	Experimental	Criteria
Sum	1955	2220	
N	30	30	H _o
Average	65.167	74.000	
Variance (S^2)	100.833	145.517	accepted
Standard	10.041	12.063	(same)
Deviation (S)			

The used formula:

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

with:

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$
$$s = \sqrt{\frac{(30 - 1)145.52 + (30 - 1)100.833}{30 + 30 - 2}} = 11.10$$

So:

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

$$t = \frac{74.00 - 65.17}{11.10\sqrt{\frac{1}{30} + \frac{1}{30}}} = 3.083$$

With $\alpha = 5\%$ and dk = 30 + 30 - 2 = 58, obtained $t_{table} =$ 1.671. From the result of calculation t-test, $t_{count} =$ 3.083. Because t_{count} was higher than t_{table} (3.083 > 1.671), so H_o was accepted and there was significant difference between experimental and control class on the post-test.

3. The Hypothesis Test

Hypothesis test is used to know whether there is a difference on post-test of experimental class and control class. In this case, the hypothesis of using Diction Chain Technique was effective to teach writing of descriptive text.

The data which used to test the hypothesis is score post-test both of class. To test the difference of average used t-test. There were the results:

a. The experimental class identified $X_1 = 74.00$ and $S_1^2 = 145.52$, also for control class identified $X_2 = 65.16$ and $S_2^2 = 100.83$. On $\alpha = 5\%$ and dk (nb-1) numeration = 30 - 1 = 29, dk (nk-1) denominator = 30 - 1 = 29, it was found $F_{table} = 1.861$.

Since the F_{count} (1.443) < F_{table} (1.861), so H_o was accepted meaning that both classes; experimental and control class had no differences.

b. For t-test obtained from the last phase of the t-test, it is obtained $t_{count} = 3.083$ with $t_{table} = 1.671$ with the standard of significant 5%. Because of $t_{count} > t_{table}$ (3.083 > 1.671) so, the hypothesis was accepted. It means that using diction chain technique to teach writing of descriptive text was effective.

From the result, it can be concluded that there was significant difference on descriptive text score between students who were taught by using diction chain technique and those who were taught without diction chain technique. It means that diction chain technique was effective to teach students writing ability of descriptive text. So, the action hypothesis was accepted.

C. Discussion of the Research Findings

After getting the result of the research, the writer discussed the data. Based on the teaching learning processed, it could be seen that Diction Chain Technique was able to answer the statement of the problem.

 The comparison of average score between pre-test of experimental class and pre-test of control class was not significance/homogeneous. The homogeneity of pre-test is very important for the writer if she want to continue her research.¹ The average score of experimental class was 62.500. And the average of control class was 61.167. Based on the calculation of normality and the homogeneity test from experimental and control class above, there were normal distribution and homogeneous.

2. The process between pre-test and post-test of experimental class and control class.

The difference improvement of experimental class and control class was on the treatment. The students of experimental class were taught by using Diction Chain Technique, while the students of control class were not taught by using Diction Chain Technique. The progress of learning process in experimental class was increased and improved. It can be seen on students' activity in treatment process by using Diction Chain Technique.

It means that after using Diction Chain Technique, students can understand about writing descriptive text as well. So, it is possible that they will get higher score than before.

It was affected to the students' average score of post-test was 74.00 while the average score of pre-test in writing descriptive text was 62.5 for experimental class. Meanwhile, the average score of pre-test was 61.166 for control class, and the

¹ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik.* (Jakarta: PT Rineka Cipta, 2006), p. 321

students' average score of post-test was 65.166 because the writer taught the students without using Diction Chain Technique.

Table 4.11

The Pre And Post-Test Students Average Scores of the Control and Experimental Class

No	Class	The Average	The Average	
		Percentage of	Percentage of	
		Pre-test	Post-test	
1.	Control	61.166	65.166	
2.	Experimental	62.5	74.00	

From the table above, it can be concluded that Diction Chain Technique had some positive influences for the students in teaching descriptive text. There were some reasons why the students can develop their writing ability on descriptive text by Diction Chain Technique. They were as follows:

- 1. The students enjoyed to join teaching learning process, because the Diction Chain Technique was very interesting.
- The students more active when using diction chain technique. It can help the students enrich some new vocabularies and comprehending the lesson easily.
- The students could understand describing something well. Because most of students think writing as difficult thing to learn.

On the other hand, the students in the control class felt bored when learning process, because the teacher just explain and gave worksheet only. So, they were not interested and difficult to understand the material.