CHAPTER III
RESEARCH METHOD

A. Design of the Research

The method that was used by the writer was experimental research. Moreover, the approach was quantitative which meant the method and instrument involve numerical measurement and the statistical qualification was conducted. According to Arikunto, "experiment is the way to look for the cause of relationship causebility between experiment class and control class."[1] It is to know the aims from using the method that is Diction Chain technique in teaching writing skill. The experimental research is divided into two groups; control group and experimental group. An experimental group receive a new treatment and control group receive a usual treatment.

This research aimed to investigate the effectiveness of using Diction Chain technique to teach writing of descriptive text. Therefore, the Diction Chain technique was applied as a treatment to teach descriptive text to know the students' writing ability.

The research design of experiment could be described as follows:

[1] Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek*, (Jakarta: PT. Rineka Cipta, 2013), p. 9

E	**O_1**	**X**	**O_2**
C	**O_3**	**Y**	**O_4**

Where:

E = Experiment Group

C = Control Group

O_1 = pre-test for experimental group

O_2 = post-test for experimental group

O_3 = pre-test for control group

O_4 = post-test for control group

X = treatment using diction chain technique

Y = treatment without using diction chain technique

Based on the design above, subjects of the research can be classified into an experimental group (top line) and control group (bottom line). The quality of subjects can be checked by pre-testing (O_1 and O_3). Then, the experimental treatment (will be taught by using diction chain technique) will be applied into the experimental group. The treatment is symbolize as "X". While, the control group will be taught without using diction chain technique. This treatment is symbollized as "Y". The test will be held in the form of writing. The results of post-test (O_2 and O_4) will be computed statistically.

B. Setting of the Research

1. Subject and Place of the Research

This research was conducted at Madrasah Aliyah Darul Ulum at Jl. Raya Anyar Wates Ngaliyan Semarang. The

subject of this research was the students of Tenth Grade of MA Darul Ulum Semarang in the Academic Year of 2015/2016. There were two classes, X A and class X B, consist of 60 students. Class X A consists of 30 students as the experimental class. Class X B consists of 30 students as the control class.

2. Time of the Research

This research conducted from February 17th to February 27th on the second semester in the academic year of 2015/2016.

3. Procedures of the Research

In collecting data, there were some procedures of the research, those steps are:

a. Preliminary visit (meet the administration officer)

The school was visited to get information about teacher and students as participants. To gain the information, the writer asked the administration officer.

b. Contact the headmaster

The writer asked permission to the headmaster of MA Darul Ulum by giving the permission letter.

c. Contact the English teacher

After receiving research permission from the headmaster of the school, the writer met the English teacher and asked for the data of students, and asked guidance for the writer

conducted the research. The writer explained about test and material that were given to the students.

d. Give the pre-test

In this section, the writer gave the pre-test to experimental and control classes. The writer gave an assignment to write descriptive text based on the topic. The students must write at least 2 paragraphs in 20 minutes.

e. Give the treatment

In this section, the experimental class received a new treatment using Diction Chain Technique in the teaching writing descriptive text, but the control class did not get the treatment in the teaching writing descriptive text.

f. Give the post-test

In this section, the writer gave the post-test to experimental class and control class, it used to measure the improvement of students' achievement in writing descriptive text. The writer gave an assignment to write a descriptive text based on the topic. The students have to use at least 2 paragraphs in 30 minutes. Students had to pay attention to the five aspects of writing which would be used in the assessment. The procedures of collecting data could be seen in the following table:

Table 3.1
The Schedule of the Research

No	Task	Plan	Date
1	Preliminary visit (meet the administration officer)	Letter of Pre-research	Wednesday, February 17, 2016
2	Contact the headmaster	Letter of research	Wednesday, February 17, 2016
3	Contact the English teacher	Discussion	Thursday, February 18, 2016
4	Give the Pre-test	Pre-test worksheet	- Control Class: Thursday, February 18, 2016 - Experiment Class: Saturday, February 20, 2016
5	Give the treatment	Lesson plan, worksheet, teaching materials, Diction Chain Technique (experiment class)	- Control Class: Monday, February 22, 2016 - Experiment Class: Wednesday, February 24, 2016
6	Give the Post-test	Post-test worksheet	- Control Class: Thursday, February 25, 2016 - Experiment Class: Saturday, February 27, 2016

C. Population and Technique Sampling

1. Population

Population is generalization which consist of object/subject that have certain characteristic and quality which specified by researcher to be studied and put its conclusion.[2] It can be defined as a group to whom the writer would like to generalize the result of the research. The population of this research was the entire of the tenth grade students of MA Darul Ulum Semarang in academic year of 2015/2016. The total population were 60 students.

2. Sample and Technique Sampling

Sample means apart of characteristic had by population that will be observed.[3] In this research, the object of the research will be taken using *sampling jenuh*. Which means that technique determining sample if all members of population are used as sample. This technique is often conducted when amount of population is relative small, less than 30 people, or research which wishes to make generalizing with small mistake. Other term of this sample is census, where all the population members used as sample.[4]

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[2] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*, (Bandung: Alfa Beta, 2008), p. 80

[3] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*, p. 81

[4] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*, p. 85

In this school, there were only two classes in the tenth grade. Therefore, the total number of the population was about 60 students. The writer took all of the population and the classes was divided into experimental and control class.

D. Variable and Indicator of the Research

Brown states that "variable is something that may vary or differ. There are dependent, independent, moderator, control and intervening variable."[5] This research considers two types of variables; they are dependent and independent variable. A dependent variable is the variable of focus or the central variable on which other variables will act if there is any relationship. The independent variable is the variable selected by the researcher to determine the relationship with the dependent variable.

In this research, the variables are:

1. The Independent Variable (X)

Independent variable is variable has the influence or the cause of change or make the existence of dependent variable. So, the independent variable in this research is the use of Diction Chain technique in teaching learning process.

The indicators of this variable are:

a. Students prepare the learning tools such as pen, and dictionary

[5] J.D Brown, *Understanding Research in Second Language Learning: A Teacher's Guide to Statistics and Research Design*, (Cambridge: Cambridge University Press, 1988), p. 10

b. Students writes difficult words and its meaning
c. Students develops sentences into paragraph of descriptive text individually

2. The Dependent Variable (Y)

Dependent variable is variable which is influenced or became effect of the independent variable.[6] Dependent variable in this research is students' writing of descriptive text. The indicator of this variable is students write a descriptive text based on the social function, generic structure and language features of descriptive text. The writer can measure it based on students' score from the test and the indicators are:

a. Students' Content
b. Students' Organization
c. Students' Grammar
d. Students' Vocabulary
e. Students' Mechanics

E. Technique of Data Collection

Technique of data collection is very important in a research. According to Arikunto, "data source in a research is

[6] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*, (Bandung: Alfa Beta, 2012), p. 61

basically source of which a researcher gets data, depends on the necessary and kind of information which is needed."[7]

To get the accurate data in this research, the writer selected the data that appropriate for the problem statement, there were:

1. Test

Test is an instrument to collect the data response about the question or exercise to measure students' achievement in learning process. In another word, test means a question which has to measure competence, knowledge, intelligence and ability to talent which is possesses by individual or group to collect data.[8] In this research, the test was used as the first method of collecting the data. The purpose of test is to know how students' ability in writing descriptive text.

The writer was gathered the data by analyzing the test. The writer gave the test twice (pre-test and post-test) in both experimental and control class.

a. Pre-test

The test was given to students before being taught using Diction Chain technique. Pre-test was given to the

[7] Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktek*, (Jakarta: PT. Rineka Cipta, 2013), p. 193

[8] Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktek* , p. 193

experimental and control class. This test took before the treatment is run.

b. Post-test

The post-test was given to the experiment and control class. The test has been given in order to know students' achievement on writing descriptive text after they were taught using Diction Chain technique (experimental class) and without using Diction Chain technique (control class).

2. Documentation

Documentation is finding out of data about things or variables such as notes, transcripts, books, agenda, and so on.[9] In this research, the method how to get the data was related to the object of research such as students' name list and pictures. In this case, the data was gained by the English teacher's help.

F. Technique of Data Analysis

1. Scoring Technique

H.D. Brown states that, there are five major items or categories in analytic scoring writing test, namely content, organization, vocabulary, language in use or grammar, and mechanic.[10] The writer gave writing test to the students to

[9] Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktek* (Jakarta: PT. Rineka Cipta, 2013), p. 274

[10] H. Douglas Brown, *Language Assessment: Principle and Classroom Practices.* (New York: Longman, 2011), p. 246.

analyze their scores on content, organization, grammar, vocabulary, and mechanic. The percentage of the categories or elements of writing can be seen in the table 3.4.

Table 3.4
Elements of Writing

Element of writing	Score
1. The content	30
2. The organization	20
3. The vocabulary	20
4. The language in use (grammar)	25
5. The mechanic	5
Total of score	**100**

Explanation:

a. *Content* : The substance of writing, ideas expressed.

b. *Organization* : The organization of the content.

c. *Vocabulary* : The choice of words, structure and lexical items to give particular tone a flavor the writing.

d. *Grammar* : The employing grammatical and syntactic forms.

e. *Mechanic* : The use of graphic convention of the language.

The writer employs scouring guidance criteria by Sara Cushing Weigle. It was included by some aspects. To the detail data can be seen in the table 3.5 and table 3.6:

Table 3.5
Scoring Guidance Explanation [11]

Item analysis	Score	Criterion of scoring
Content	30-27	**Excellent to very good:** knowledgeable-substantive, through development of thesis, relevant to assigned topic.
	26-22	**Good to Average:** some knowledgeable of subject-adequate range, limited development of thesis: mostly relevant to topic, but lacks detail.
	21-17	**Fair to poor:** limited knowledgeable of subject-little substance, inadequate development of topic
	16-13	**Very poor:** does not show knowledgeable of subject-non substantive, non-pertinent, OR not enough to evaluate.
Organization	20-18	**Excellent to very good:** fluent expression ideas clearly state; well organized; logical sequencing; cohesive.
	17-14	**Good to Average:** somewhat choppy loosely organized but main ideas stand out.
	13-10	**Fair to poor:** not fluent-ideas confused or disconnected.
	9-7	**Very poor:** does not communicate-no organization.
Vocabulary	20-18	**Excellent to very good:** sophisticated range-effective word/idiom choice and usage; word

[11] Sara Cushing Weigle, *Assessing Writing,* (New York: Cambridge University Press, 2002), p. 116.

Item analysis	Score	Criterion of scoring
		from mastery; appropriate register.
	17-14	**Good to Average:** adequate range occasional of word /idiom form, choice, usage, but meaning is not obscured.
	13-10	**Fair to poor:** limited range-frequent errors of word/idiom form, choice, usage; meaning confused.
	9-7	**Very poor:** essentially translation-little knowledge of English vocabulary.
Language in use (grammar)	25-22	**Excellent to very good:** effective complex, few errors of agreements, grammar construction.
	21-18	**Good to Average:** effective but simple constructive in grammar.
	17-11	**Fair to poor:** a major problem is simple/complex construction in grammar.
	10-5	**Very poor:** virtually no mastery of sentence construction rules.
Mechanic	5	**Excellent to very good:** demonstrates mastery of construction.
	4	**Good to Average:** occasional errors of spelling, punctuation, capitalization.
	3	**Fair to poor:** frequent errors of spelling, punctuation, capitalization.
	2	**Very poor:** no mastery of conventions, dominated by errors of spelling, punctuation, capitalization and paragraphing.

Item analysis	Score	Criterion of scoring
Total of score	1-100	

Table 3.6
Criteria Assessment

Students' Mastery	
Criteria of Assessment	**Grade**
91-100	Excellent
81-90	Very good
71-80	Good
61-70	Fair
51-60	Poor
Less than 50	Very poor

(D. Harris.1969:134)

2. Pre-requisite Test

Before the writer determines the statistical analysis technique used, the writer examined the validity sample. The way that used to examine the validity sample was normality and homogeneity test.

a. Normality Test

It was used to know the normality of the data that was analyzed whether both groups had normal distribution or not. To find out the distribution data is used normality test with Chi squre.[12]

[12] Sudjana, *Metode Statistika*, (Bandung: Tarsito, 2002), p. 273

The steps of Chi-square test as follows:

1) Determine the range (R): the largest data reduced the smallest.
2) Determine the many class interval (K) with formula:

   K = 1+ (3,3) log n
3) Determine the length of the class, using the formula:

   $P = \frac{range\ R}{number\ of\ class}$
4) Make a frequency distribution table
5) Determines the class boundaries (bc) of each class interval
6) Calculating the average x_i ($\bar{x}$), with the formula:

   $\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$
7) Calculate variants, with the formula:

   $S = \sqrt{\frac{\sum f_i (x_i - \bar{x})^2}{n-1}}$
8) Calculate the value of Z, with the formula:

   $Z = \frac{x - \bar{x}}{s}$

   x = limit class

   $\overline{x}$ = average class

   S = standard deviation
9) Define the wide area of each interval
10) Calculate the frequency expository (Ei), with formula:

    Ei = n x wide area with the n number of sample

11) Make a list of the frequency of observation (Oi), with the frequency expository as follows:

Class	Bk	Z	P	L	Ei	$\frac{(Oi-Ei)^2}{Ei}$

12) Calculate the chi-square (χ^2), with the formula:

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

13) Calculate the degree of validity (dk). In the calculation of this data was arranged in list of frequency distribution consisting of k pieces so that the interval to determine the criteria test used formula dk= k-3, where k was the number of class intervals and $\alpha = 5\%$

14) Determining the value of χ^2 table

15) Determining the distribution normality with test criteria:

If $\chi^2_{count} > \chi^2_{table}$ so the data was not normal distribution and other way if the $\chi^2_{count} < \chi^2_{table}$ so the data was normal distribution.

b. Homogeneity Test

It was used to know whether experimental group and control group, that were decided, came from population that had relatively same variant or not. The formula was:[13]

[13]Sugiyono, *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif, dan R&D)*, (Bandung: Alfa Beta, 2012), p. 275

$F = \frac{Vb}{Vk}$

Where:

Vb : bigger variant

Vk : smaller variant

c. Average Test

It was used to examine average whether experimental group and control group have been decided having different average.

T-test was used to analyze the data of this research. It was used to compare and measure or the mean of the two groups.

Proposed hyphothetical test in average similarity with the right test is as follows[14]:

Ho : $\mu_1 = \mu_2$

Ha : $\mu_1 \neq \mu_2$

μ_1 : average data of experiment group

μ_2 : average data of control group

The t-test formula is used.

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

[14] Sudjana, *Metode Statistika*, (Bandung: Tarsito, 2002), pg. 239

With :

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

Where:

$\bar{x}_1$: average of experimental group

$\bar{x}_2$: average of control group

n_1 : number of experiment group

n_2 : number of control group

S : standard deviation of both experimental and control

S_1^2: standard deviation of experimental group

S_2^2: standard deviation of control group

Testing criteria that apply Ho is accepted if $t_{count} > t_{table}$

With determinate df = $(n_1 + n_2 - 2)$ and the significant α = 5 % (1-α)

3. Phase End Analysis

a. Normality Test

Steps normality second step was the same as the normality test on the initial data.

b. Homogeneity Test

Steps Homogeneity second step was the same as the homogeneity test on the initial data.

c. Hypothesis Test

Proposed hypothesis test in average similarity with the right test is as follows:

Ho: $\mu_1 \leq \mu_2$

Ha: $\mu_1 > \mu_2$

μ_1: Average data of experimental group

μ_2: Average data of control group

The formula that is used in the t-test as follows:[15]

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

With:

$$s = \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1 + n_2 - 2}}$$

Where:

$\bar{x}_1$: Average of experimental group

$\bar{x}_2$: Average of control group

n_1 : The Number of experimental group

n_2 : The number of control group

s : Standard deviation

s^2 : Variance

Criteria test is Ho was accepted if $t_{count} > t_{table}$ with determinate df = $(n_1+n_2 -2)$ and the significant $\alpha = 5\%$ with opportunities $(1- \alpha)$.

[15] Sudjana, *Metode Statistika*, (Bandung: Tarsito, 2002), p. 239