CHAPTER III

RESEARCH METHOD

A. Research Design

The design of this research was an experimental research. Gay (2012:250) states that an experimental research is a type of research that can test hypotheses to establish cause-effect relation. Generally, the steps in an experimental study include selecting and defining a problem, selecting participants and measuring instruments, preparing a research plan, analyzing the data, and formulating conclusion.

In an experimental research, the group that receives the new treatment is called the experimental group, and the group that receives a different treatment or is treated as usual is called control group. The experimental group was taught by Dictogloss Technique and the control group was taught by Conventional technique (note taking). After deciding which classes were experimental and control, the researcher continue with the treatment process. Every meeting the researcher gives different topics. At the end of treatment, the researcher gives the students post-test. Finally, at the end of the research, According to Gay (2012:267) posttest score are compared to determine the effectiveness of the treatment to prove whether or not students who were taught of Dictogloss Technique had better writing ability in analytical exposition than who were not at Senior High School 15 Padang.

Table 3.1
Table Research Design

Group	Treatment	Post-test
Experiment	X	O_1
Control	-	O_2

X = Treatment (teaching through Dictogloss Technique)

O_1= Post-test for experimental class

O_2= Post-test for control class

B. **Population and Sampels**

1. **Population**

Gay (2000:122) states that population was a group of interest to the researcher, the group to which she or he would like the result of the study to be generalized. The population of this research was science class of eleventh grade students of Senior High School 15 Padang. Total number of second years students in Senior High School 15 Padang is 154 consist of five classes. As shown in the table below:

Table 3.2
Population of the Research

No	Class	Total
1	XI IPA 1	31
2	XI IPA 2	30
3	XI IPA 3	30
4	XI IPA 4	32
5	XI IPA 5	31
TOTAL		**154**

Source: English teacher at class XI IPA of SMA N 15 Padang

2. Sample

According to Gay (2012:129) a sample is a group of individuals, items, or events that represents the characteristic of the larger group from which the sample is drawn. Then, process of selecting a number of individuals for a study in such a way that the individuals represent the larger group from which they were selected is called Sampling. Researcher used cluster random sampling. Gay (2012:144) says that cluster sampling is sampling in which group, not individual are randomly selected. To get the representative sample of this research the researcher did these steps:

a) Collected students' daily writing from all of students at eleventh grades.

b) Test of normality, normality test has an objective to know the population normal or not. The normality test analyzed by using SPSS (*Statistical Product and Service Solution*) with data exploration of Kolmogorov-Smoirnov test and Shapiro Wilk. Based on that test the data stated normal if every classes has significance or probability score bigger than 0.05. It can be seen on the table.
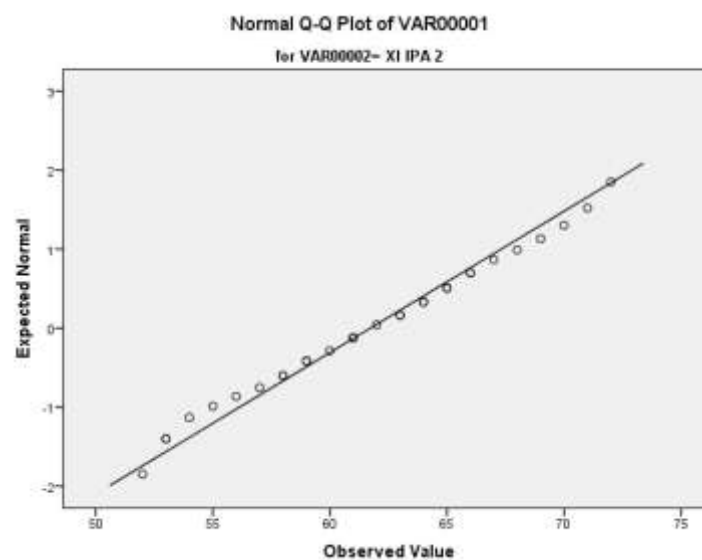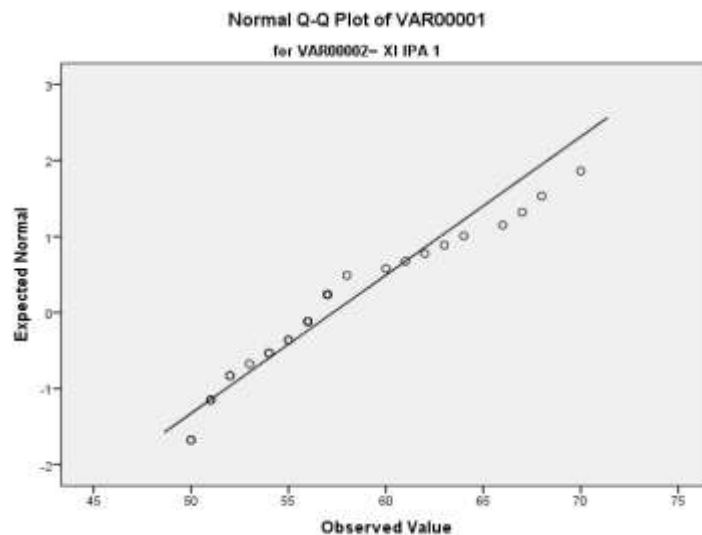
Table 3.3
Tests of Normality

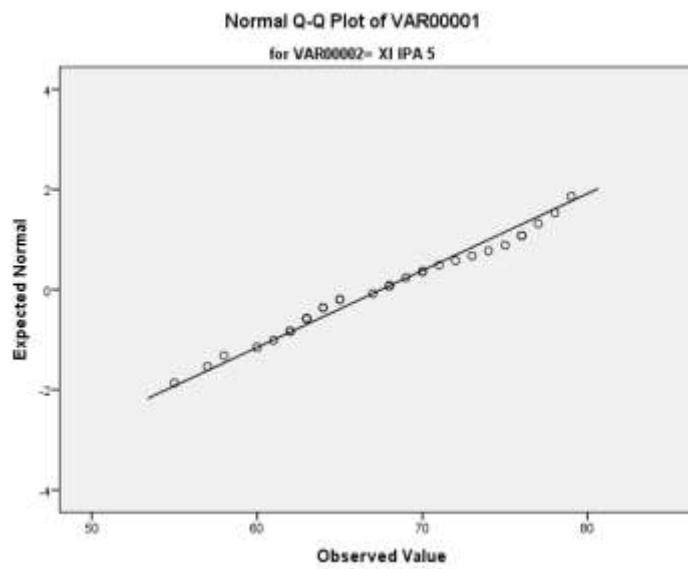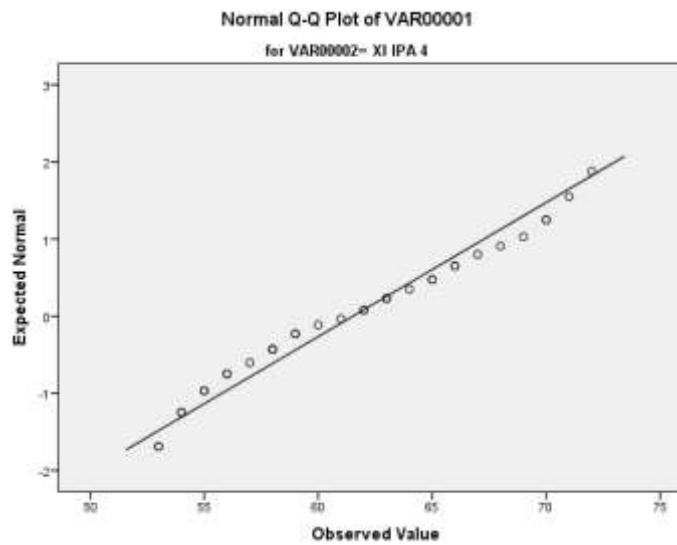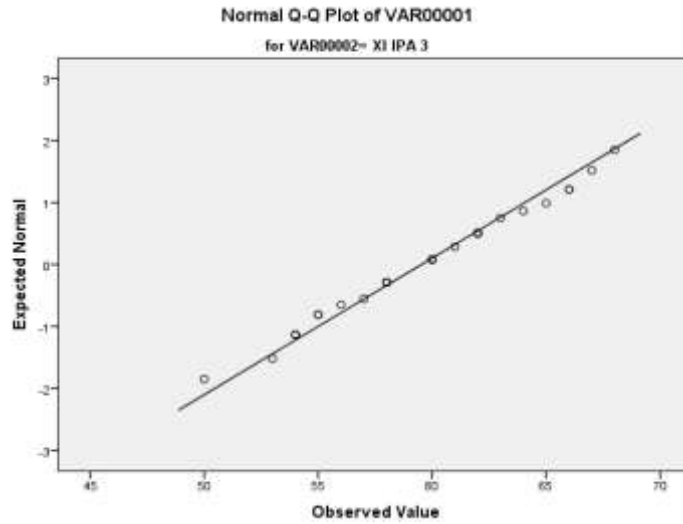| VAR00002		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
VAR00001	XI IPA 1	.198	31	.003	.925	31	.032
	XI IPA 2	.057	30	.200[*]	.976	30	.699
	XI IPA 3	.099	30	.200[*]	.979	30	.788
	XI IPA 4	.108	32	.200[*]	.951	32	.159
	XI IPA 5	.102	31	.200[*]	.973	31	.613

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on the table, can be seen that the significance or probability score just four classes (IPA 2, IPA 3, IPA 4 and IPA 5) bigger than 0.05 in both Kolmogorov-Smirnov and Shapiro-Wilk.

To see whether the sample normal or not in distribution, researcher also use normal graphic of Q-Q plot, the data is normal if the distribution of data plot be in the surrounding of aslant and athwart line. From the normality test, researcher got the output as below:

Normal Q-Q Plot of VAR00001
for VAR00002– XI IPA 1

Normal Q-Q Plot of VAR00001
for VAR00002– XI IPA 2

Normal Q-Q Plot of VAR00001 for VAR00002= XI IPA 3

Normal Q-Q Plot of VAR00001 for VAR00002= XI IPA 4

Normal Q-Q Plot of VAR00001 for VAR00002= XI IPA 5

From the chart above can be seen that the drops spread around the line. So, it can be concluded that the distribution of all the population were not normal. Four classes was normal and the other not normal.

c) Test of Homogeneous Variances

After did the normality test and got the normal data. Then the researcher did the homegeneous variation test. This test had an objective as to know the sample homogeny or not. The researcher did the test of homogeneity by using *Test of homogeneity of variance*. If the data were significant or the data were more than 0.05 it mean the data was homogeneous.

Table 3.4
Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
VAR00001	Based on Mean	1.336	4	149	.259
	Based on Median	1.331	4	149	.261
	Based on Median and with adjusted df	1.331	4	139.075	.261
	Based on trimmed mean	1.364	4	149	.249

The decision of column *test of homogeneity of variance* shown that p-value 0.001 is smaller than 0.05, so it can be concluded that all the class were homogeneity.

d) After researcher analyzed the homogeneity and normality test, researcher found all classes was homogeny but one class was not normal. Then, researcher was chosen those normal classes for experimental class and control

class. The procedure of cluster random sampling is researcher made a lottery which contained all of population. So, the researcher got XI IPA 4 as control class and XI IPA 5 as experimental class.

Table 3.5
Sample of Research

No	Class	Number of Student
1	XI IPA 5 (Experimental Class)	31
2	XI IPA 4 (Control Class)	32
Total Sample		**63**

C. Place and Time of Research

This research was done in class XI IPA at Senior High School 15 Padang. This place was chosen because the researcher had ever done observation there. The treatment conducted on July to August 2017 on academic year 2017/2018 at first semester.

D. Instrument

The instrument of this research was writing test. Students in experimental class were taught by Dictogloss Technique and students of control class were taught by Conventional technique. The written test was given in post-test. In this case, the students were asked to the topics given and create their paragraph. The researcher uses Jacob's criteria (1981:90) in scoring the students' writing product can be assessed based on five categories that are; content, organization, vocabulary, language use, and mechanics.

E. Procedure of Doing Research

    1. Preparing

        a. Determine the research time.

        b. Determining the population and sample

        c. Preparing the lessons plan arranged by curriculum or syllabus for five meetings to experimental and control class

        d. Preparing research instrument

    2. Application Step

        The researcher gave the treatment to the students with Dictogloss Technique in teaching writing in experimental class and conventional technique for control class. The following table indicates the procedures that the researcher conducted in teaching writing process; the teaching process was dividing into three sessions as follows:

Table 3.6
Procedures in Teaching Writing

Experimental Class	Control Class
PRE-TEACHING ACTIVITY **(15 Minutes)** - Greeting. - Checking students' attendance list. - Teacher introduces learning objective to students. - Teacher writes a topic of the lesson on the whiteboard.	**PRE-TEACHING ACTIVITY** **(15 Minutes)** - Greeting. - Checking students' attendance list. - Teacher introduces learning objective to students. - Teacher writes a topic of the lesson on the whiteboard.

WHILST-TEACHING ACTIVITY (65 Minutes)	WHILST-TEACHING ACTIVITY (65 Minutes)
1. Exploration **Building Knowledge of the Field (BKOF)** • Teacher gives some questions based on the topic to build students' background knowledge. • Teacher introduces the topic.	**1. Exploration** • Teacher gives some questions based on the topic to build students' background knowledge. • Teacher introduces the topic.
2. Elaboration **Modeling of Text (MOT)** • Teacher models analytical exposition text. • Teacher explains generic structure, purpose, language features of the text. • Guiding the students to analyse the text.	**2. Elaboration** • Teacher models analytical exposition text. • Teacher explains generic structure, purpose, language features of the text. • Guiding the students to analyse the text. • Giving feedback to the students. • Teacher guides students to make their own text based on the topic given.
Join Construction of the Text (JCOT) • Guide the students in understanding of how they will do dictogloss technique. • Teacher read the text twice. The first time, they should not write. The second time, they should write down key words from text. • Teacher divides students into several groups. • Students work in groups, proceed to pool their notes and work on their version of the text.	
Independent Construction of Text (ICOT) • Students analyse and correct their text by comparing their version to other group and then with the original. • Ask the students to recognize the new text based on their own text based on the topic given.	

3. Confirmation	3. Confirmation
• Teacher monitors the students. • Teacher asks the students to finish a complete text and collects students' writing. • Teacher gives the supporting comments to students.	• Teacher monitors the students. • Teacher collects students' writing. • Teacher gives the supporting comments to students.
POST-TEACHING ACTIVITY (10 Minutes) • Teacher concludes the lesson. • Teacher closes the lesson.	**POST-TEACHING ACTIVITY (10 Minutes)** • Teacher concludes the lesson. • Teacher closes the lesson.

3. Final Step

   a. Giving written test to experimental class and control class in the last meeting.

   b. Processing data towards experimental class and control class.

   c. Taking conclusion from technique of data collection.

F. **Technique of Data Collection**

1. Test

The data was collect by giving writing test. Writing test was given to both of control and experimental group. Data of this research was the students' scores in post-test. The post-test was given at the end of treatment. The researcher gave treatment to experimental group for five times by using Dictogloss Technique. It is aimed to find out the effect of treatments to students' writing score.

2. Scoring

Researcher uses scoring technique of Jacob (1981: 92) in this research to assess students' writing.

Table 3.7
Weighting Table for Writing

No	Rating Quality	Score				
		Content	Organization	Vocabulary	Language Use	Mechanic
1	Excellent	27-30	18-20	18-20	22-25	5
2	Good	22-26	14-17	14-17	18-21	4
3	Fair	17-21	10-13	10-13	11-17	3
4	Very Poor	13-16	7-9	7-9	5-10	2
	Max Score	**30**	**20**	**20**	**25**	**5**

G. Technique of Data Analysis

Technique of data analysis in this research was statistical procedure. It gives a way to analyze the differences between the groups. To analyze the students' score in post-test, the researcher use T-test formula taken from Sudjana (1992: 239). In this case, T-test means a statistical procedure that used to determine whether both of groups were in the same ability or not. T-test formulas develop which is presented as follow.

In analyzing the students' test score, some steps were did before analyzing the different mean by using t-test formula as follows;

1. This formula apply to decide mean of students' test score in experimental and control groups;

$$\overline{X_1} = \frac{\sum F_1 X_1}{\sum F_1} \quad \text{(Experimental group)}$$

$$\overline{X_2} = \frac{\sum F_2 X_2}{\sum F_2} \quad \text{(Control group)}$$

2. This formula used to decide standard deviation of experimental group;

$$S_1^2 = \frac{n_1 \, x \sum F_1 x_1^2 \, (\sum F_1 X_1)^2}{n_1 (n_1 - 1)}$$

3. This formula used to decide standard deviation of control group;

$$S_2^2 = \frac{n_2 \, x \sum F_2 x_2^2 \, (\sum F_2 X_2)^2}{n_2 (n_2 - 1)}$$

The formula of t-test as follows (Sudjana, 1996).

$$t = \frac{\overline{X_1} - \overline{X_2}}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

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

Notes;

t : The value of t calculated / observer / obtained

$\overline{X_1}$: Mean score of experiment sample

$\overline{X_2}$: Mean score of control sample

n_1 : The number of subject of experimental group

n_2 : The number of subject of control group

S_1^2 : Standard deviation of experimental group

S_2^2 : Standard deviation of control group

The t-$_{\text{table}}$ was employed to see whether there was a significant difference between the mean score of both experimental group and control group. The value of t-$_{\text{obtained}}$ was consulted with the value of t-$_{\text{table}}$ at the degree of freedom $(n_1-1) + (n_2-1)$ and the level of confidence of 95% = 0. 05. If the value of t-$_{\text{obtained}}$ was less than the value t-$_{\text{table}}$, the null hypothesis was accepted; on the contrary, if the value of t-$_{\text{obtained}}$ is equal or bigger than value of t-$_{\text{table}}$, the alternative one is not accepted.