

CHAPTER III

RESEARCH METHOD

A. Research design

This research is an experimental research. Gay (1976) says that an experimental research typically consist of two groups, they are experimental group and control group. The purpose of experimental research is to study cause- effect relationships (Zulhidah: 25).

According to Arikunto (2007: 207) defined that the experimental research try to prove there is or there is not cause and effect relationship between experimental class (treatment) and control class (no treatment). Gay (2000: 250- 251), the experimental research is the only type of research that can test hypotheses to establish cause-and effect relationship.

There were two classes involved in this research. The first is classified as the experimental class (E) and the other one is the control class (C). The experimental class was received a treatment by using Group Investigation Technique, while the control class by using conventional strategy. After deciding which class experimental and control, this research was continued with the treatment process for experimental class by using Group Investigation Technique and process for the control class by using conventional strategy. Both of classes were treated as many as six meetings.

Then, both of classes gave the same topic and the same length of time. Both experiment class and control class were taught by the

researcher. After finishing the treatment, the researcher gave post- test. There was one test in this research that is post-test only. For the posttest, both of group (experiment and control group) will get the same test.

Furthermore, at the end of the research, the researcher took the post-test to see how both of them, using Group Investigation Technique and Conventional Strategy gives significant effect towards students' writing ability. The design of the research can be described based on the table:

Table 3.1
Table of Research Design

	Treatment	Posttest
Experiment	X	O ₂
Control	-	O ₄

X = treatment of experimental group

O₂ = post-test for experimental group

O₄ = post-test for control group

B. Population and Sample

1. population

Gay (1987: 107) states that population is the total of group to which the researcher would like to generalize the result of the study and sampling is the processes of selecting a number of represent one the large group from which they selected. In this research, the population was the class VIII of Junior High School 5 Pariaman.

The students consist of 127 students. They are distributed in to five classes such the following table:

Table 3.2
Population

NO	CLASS	TOTAL
1	VIII.1	26
2	VIII.2	26
3	VIII.3	25
4	VIII.4	25
5	VIII.5	25
TOTAL	5 Classes	127

2. Sample

According to Gay (2000:131) A good sample is one that is representative of the population from which it was selected, and selecting a representative sample is not a haphazard process. In order to get sample, the researcher used cluster random sampling. Cluster random sampling means that the sample of the population was taken by lottery. The researcher used SPSS to show normality and homogenous of class VIII. It can be seen from the result of SPSS test below:

Table 3.3
Test Normality of Population

	VAR0000 1	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
kelas	VIII.1	,149	26	,143	,956	26	,321
	VIII.2	,118	26	,200*	,932	26	,086
	VIII.3	,118	25	,200*	,936	25	,118
	VIII.4	,168	25	,068	,954	25	,306
	VIII.5	,153	25	,132	,927	25	,075

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 3.4
Test Homogeneity of Variance Population

		Levene Statistic	df1	df2	Sig.
kelas	Based on Mean	1,810	4	122	,131
	Based on Median	1,573	4	122	,186
	Based on Median and with adjusted df	1,573	4	114,654	,186
	Based on trimmed mean	1,760	4	122	,141

Based on SPSS result above, writer got all of class VIII showing that normal and homogenous. Then, to determine experimental and control class, the researcher used cluster random sampling. It was chosen following the procedure of lottery to determine experimental class and control class. So, researcher got class VIII 4 as experiment class and class VIII 3 as control class. To get clearly, the total of the sample can seen in the following table:

Table 3.5
Sample

No.	Class	Total
1	VIII.3	25
2	VIII.4	25
3	2 Classes	50

C. Place and Time of the Research

This research was done in Junior High School 5 Pariaman at class VIII. This place was chosen because the researcher had ever done observation there. The time allocation of English subject is twice a week for each class or (2x 40) minutes. The treatment conducted on Oktober to November 2017 on academic year 2017/2018 at first semester.

D. Instrument of the Research

The instrument that use for this research is writing test. The written test was done on post-test toward two classes (experimental and control classes). The students in experimental class were taught writing through Group Investigation Technique and the students of control class were taught through Conventional Strategy.

There was post-test only. The post-test given to the students was aimed to see whether the two classes had significant difference scores. This is also to see whether the treatment was useful or not. The researcher was evaluated students' achievement on writing in terms of content, organization, language use, vocabulary and mechanics.

According to Gay (2000), validity was the most important quality of a test. It was the degree to which a test measures it was supposed to measure and consequently, permitted appropriate interpretations of test scores. The characteristics of test validity is content validity. It means the test is valid if it fixes with the material that has been given to the students and it is based on the Curriculum and syllabus. The writer will use the Curriculum or syllabus and teaching material to construct the test.

The instrument for this research is the form of written test. The researcher used Jacob's criteria (1981:90) in scoring the students' writing ability because it would be easy for researcher to score the students writing. Criteria to be measured in students' writing covered five points: content, organization, vocabulary, language use, and mechanics. It can be seen as shown in the following table:

Table 3.6
Indicator of writing Based on Jacob's Theory

CONTENT	SCORE LEVEL	CRITERIA
	30-27	Excellent to very good: knowledge, substantive, through development of thesis, relevant to assigned topic.
	26-22	Good to average: some knowledge of subject, adequate range, limited development of thesis; mostly relevant to topic, but lacks detail.
	21-17	Fair to poor: limited knowledge of subject, little substance, inadequate development of topic.
	16-13	Very poor: does not show knowledge of subject, non-substance, not pertinent, or not enough to evaluate.

ORGANIZATION	SCORE LEVEL	CRITERIA
	20-18	Excellent to very good: fluent expression, ideas clearly stated supported, succinct, well organized, logical sequencing, cohesive.
	17-14	Good to average: somewhat choppy, loosely organized but main ideas stand out, limited support, logical but incomplete sequencing.
	13-10	Fair to poor: non-fluent ideas confused or disconnected, lacks logical sequencing and development.
	9-7	Very poor: does not communicate, no organization, or not enough to evaluate.
VOCABULARY	SCORE LEVEL	CRITERIA
	20-18	Excellent to very good: sophisticated range, effective word/idiom choice and usage, word form mastery, appropriate register.
	17-14	Good to average: adequate range, occasional errors of words/Idiom form, choice, usage but meaning not obscured.
	13-10	Fair to poor: limited range, frequent errors of words/idiom form, choice, usage, meaning confused or obscured.
	9-7	Very poor: essentially translation, little knowledge of English vocabulary, idioms, word form, or not enough to evaluate.
LANGUAGE USE	SCORE LEVEL	CRITERIA
	25-22	Excellent to very good: effective complex construction, few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions.

	21-18	Good to average: effective but simple constructions, minor problems in complex constructions, several errors of agreement, tense, number, word order/ function, articles, pronouns, prepositions but meaning seldom obscured
	17-11	Fair to poor: major problems in simple/complex constructions, frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and /or fragments, run-ons, deletions, meaning confused or obscured.
	10-5	Very poor: virtually no mastery of sentence construction rules, dominated by errors, does not communicate, or not enough to evaluate.
MECHANICS	SCORE LEVEL	CRITERIA
	5	Excellent to very good: demonstrates mastery of conventions; few errors of spelling, punctuation, capitalization, paragraphing.
	4	Good to average: occasional errors of spelling, punctuation, capitalization, paragraphing, but meaning not obscured.
	3	Fair to poor: frequent errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, meaning confused or obscured.
	2	Very poor: no mastery of conventions dominated by errors of spelling, punctuation, capitalization, paragraphing, handwriting illegible, or not enough to evaluate.

E. Procedure of the Research

1. Preparing

The researcher used two classes to collect the data, the researcher taught the students by using Group Investigation Technique for experimental class, and Conventional Strategy in control class. The material of the teaching was the same writing material.

2. Learning Process

The process of the class can be seen in the following table:

Table 3.7
Treatment Procedure of Experimental Class

Fase	Learning Activity	Time
Pre-Teaching	<p>Apperception</p> <ol style="list-style-type: none"> 1. Greeting 2. Checking students' attendance list 3. Praying 4. Teacher asks the students about last topic <p>Motivation</p> <ol style="list-style-type: none"> 1. Teacher give the students motivation 2. Teacher gives questions based on the topic to build students' background knowledge about recount text. 	10 Minutes
Whilst-Teaching	<p>Observing</p> <ul style="list-style-type: none"> • Teacher introduces a lesson by showing the picture to the students. • The teacher write an example about recount text in the whiteboard <p>Questioning</p> <ul style="list-style-type: none"> • Teacher leads student to give comment or ask question based on the picture or based on the example. <p>Exploring</p> <ol style="list-style-type: none"> a. Teacher gives intruction to <i>selec thet</i> 	60 minutes

	<p><i>topic and make group</i>, Teacher divides students into group. Each of groups consist of six members</p> <p>Associating</p> <p>b. <i>Planning task</i>, Each group plans a task. They will tell about</p> <p>c. <i>Investigation</i>, each of group gather information from collaborator such as other groups, teacher or other sources. They will ask about vocabulary, pronounce the word and grammar Then each group evaluate the data or information</p> <p>d. <i>Preparing report</i>, all of group members involve to evaluate the information, they are given an opportunity to learn before presentation</p> <p>Communicating</p> <p>e. <i>Presentation</i>, each of group presents their result in front of class.</p> <p>f. <i>Evaluate</i>, the assessment do to see how the students' motivation and their contribution in group</p> <ul style="list-style-type: none"> • Students get the supporting comments from the teacher • Teacher gives emphasize about recount text 	
Post-Teaching	<p>Post- Teaching Closing</p> <ol style="list-style-type: none"> 1. Teacher concludes the material 2. Teacher gives reflection (students responses about the lesson). 3. The teacher tells the next material. 4. Teacher closes the class 	10 minutes

3. Evaluation

After doing the learning process so the next step was the post test.

The test was given to the both class (experimental class and control class). The test used a written test. The students were given explanation

about the components of writing that was measured such as content, organization, vocabulary, language use, and mechanic.

In finishing:

- a. Giving test to experimental and control class in the last meeting
- b. Processing data towards experimental and control class
- c. Getting finding
- d. Taking conclusion and proposing suggestion

F. Technique of Data Collection

The data was collected through a post- test score. Researcher gave both of group's different treatment for writing test. Data of this research used the students' post- test score. The post- test score was taken in the last meeting after giving the treatment six times.

After researcher gave treatment to the students, the researcher taught both the experiment group and control group. For experimental group, researcher used Group Investigation Technique in teaching writing. For control group, researcher used Conventional Strategy in teaching writing. Finally, both groups were given the post test. The post test was administered to get final result of the research.

G. Technique of Data Analysis

To analyze the students' score in posttest, the researcher use t_{test} formula taken from (Subana, 2000). In this case, t_{test} mean a statistical

procedure used to determine whether both of groups are in the same ability or not.

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

1. This formula was applied to decide mean of students' test score in experimental and control groups:

$$\bar{X}_1 = \frac{\sum F_1 X_1}{\sum F_1} \text{ (Experimental group)}$$

$$\bar{X}_2 = \frac{\sum F_2 X_2}{\sum F_2} \text{ (Control group)}$$

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

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

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

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

The formula of t-test was as followed (Subana, 2000: 171)

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

With

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

Where;

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_{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_{obtained} was consulted with the value of t_{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_{obtained} was less than the value t_{table} , the null hypothesis was accepted; on the contrary, if the value of t_{obtained} is equal or higher than value of t_{table} , the alternative one was not accepted.