

## **CHAPTER III**

### **RESEARCH METHOD**

#### **A. Research Design**

The design of this research was an experimental research. Gay (2000:250) stated that the experimental research is the only type of research that can test hypotheses to establish cause and affect relationship.

Gay (2000: 252) states an experiment typically involves two groups, an experimental group and a control group. The experiment group received a treatment using What-Why-How strategy, while the control group treated using conventional technique. The control group needed in order to search whether there is or there is not any significant difference both of groups. It represents the most valid approach to the solution of educational problems, both practical and theoretical, and to the advancement of education as a science.

There was two classes involve in this research. The first was classified as the experimental (E) and the other one is the control class (C). Both classes have the same length of time. Both experimental class and control class taught by writer. The two groups treat as many as five meetings; it was assume that five meetings would be sufficient in seeing any difference that occurred afterward. There was one test in this research; post-test that occurred after the treatment of the strategy for the experiment class and different strategy for the control class.

After deciding which class was experimental and control, the researcher continued with the treatment process for experimental class and no treatment process for the control class. And finally, at the end of the research, the researcher had to take the final or the post-test to see how both strategies, What-Why-How strategy and conventional technique affected students' writing ability

**Table 3.1**  
**Research Concept**

Group	Independent Variable	Dependent Variable
E	X	0
C	-	0

Where:

- E : Experimental group
- C : Control group (teaching conventional technique)
- 0 : Post test (Writing Test)
- X : Treatment (teaching through W-W-H strategy)

## **B. Research Subject**

### **1. Population**

The population of this research was the first year students of Senior High School Pariaman enrolled in the year 2017/2018. They were chosen as population of the research because they learned about hortatory

exposition text. Therefore, they assumed to be able to write the hortatory exposition text.

There were five classes of the first year of Senior High School Pariaman. Total numbers of the students from the five classes were 150 students.

**Table 3.2**

**Population of class XI IPA at Senior High School 4 Pariaman**

Class	Total Of Students
XI IPA1	31 students
XI IPA2	32 students
XI IPA3	28 students
XI IPA4	31 students
XI IPA5	28 students
<b>Total</b>	150 students

The five classes used SPSS (Statistical Product and Service Solution) to know the normality and homogeneous data. To show the sample was representative or not. The table below shows the result of normality and homogeneity test.

**Table 3.3**

**Test of Normality**

Tests of Normality							
	KELAS	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
NILAI	XI.IPA 1	.133	29	.200 <sup>*</sup>	.936	29	.077
	XI.IPA 2	.131	32	.177	.962	32	.312
	XI.IPA 3	.093	29	.200 <sup>*</sup>	.954	29	.229
	XI.IPA 4	.093	31	.200 <sup>*</sup>	.986	31	.943

	XI.IPA 5	.170	28	.036	.893	28	.008
a. Lilliefors Significance Correction *. This is a lower bound of the true significance.							

Based on the table, can be seen that the significance or probability score of all the classes bigger than 0,05 in both Kolmogrove-Smirnov and Shapiro-Wilk

To see wheter the sample normal or not in distribution, researcher also used normal graphic of Q-Q plot, the data was normal if the distribution of data plot in the surrounding of aslant and athwart line. From the normality test, researcher got the output (see appendix).

From the graphic above can be seen that the drops spread around the line. So, it can be concluded that the distribution of all the opulation were normal.

After did the normality test, researcher analyzed the homogenous variation test. This test is an objectives to know whether the sample homogeny or not. The researcher did the test of homogeneity by using *test of homogeneity of variances*. Population has homogeny variance if P-value was bigger than 0,05. See the table below:

**Table 3.4**

**Test of Homogeneity of Variances**

**Test of Homogeneity of Variances**

Nilai

Levene Statistic	df1	df2	Sig.
34.617	1	54	.018

The decision of column *test of Homogeneity of variances* was bigger than 0,05, so it can be concluded that all the class were homogeny.

After knowing the normality homogeneous test by using SPSS, the researcher found all classes normal and homogeny as a population. The five classed had the significant of normality and homogeneous more than 0,05. Based on the graphics Q-Q plot, if the data around and near with the line, it means, the data was normal. After get the population, researcher continued the next step to find the sample of this research.

## 2. Sample

Sample was a part of population that can represent the problem values of the population. A sample comprised the individuals, items, or events selected from a large group referred to as a population. The purpose of sampling was to gain information about the population by using the sample.

The sample of this research used simple random sampling. Gay (2000: 131) says that Simple random sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of selection for the sample. The selection of the sample was completely out of the researcher's control; instead, a random, or chance, procedure selects the sample. In other words, every individual had the same probability of being selected, and selection of one individual in no way affects selection of another individual. This class chose because it represented the homogenous population.

Sugiyono (2008: 120) concerns that simple random sampling refers to select a sample that the researcher believes to be representative of homogenous population. Sample chose randomly. After get the class. The sample of this research consisted of two groups: an experiment group and control group. Based on the fifth classes above, the researcher chose two classes at the sample. The researcher took class XI IPA4 and XI IPA5 as the sample because both of this class had same qualification. The sample were 56 students. The In determining experimental group and control group the researcher used flapping coin. The researcher got the result that class XI IPA5 as experimental group with 28 students and class XI IPA4 as control group with 28 students.

### **C. Place and Time Research**

This research was at SMAN 4 Pariaman, the treatment conducted at the first year's student. The treatment carried out based on the teaching schedule of SMAN 4 Pariaman. The time allocation of English subject did twice a week for each class or 4 x 45 minutes and each meeting or 2 x 45 minutes, for five meetings by applying W-W-H Strategy to improve students writing ability in hortatory exposition text.

After giving treatment by using W-W-H strategy for five times in classroom activity, the researcher gave post-test in order to know the students writing ability after treatment and whether W-W-H strategy was effective to improve students writing ability, the researcher compared the result post-test for both experimental class and control class.

#### D. Instrument

The instrument of this research was writing test. Writing test used to collect the data about the improvement of student's writing ability after implementing presentation technique. The data collection used to explain the real condition of the process of teaching and learning of English especially in teaching and learning process of writing.

The written test gave in posttest is the same writing test. In this case, the researcher gave one topic and then students wrote title and created their paragraph. The topic is smoking.

**Table 3.5**  
**Sample of instrument in giving writing score**

##### 1. Post-test for experiment class

No. of Students	Aspects					
	Content (30)	Organization (20)	Voc (20)	Grammar (25)	Mechanics (5)	Total (100)
1						
2						
25						

##### 2. Post-test for control class

No. of Students	Aspects					
	Content (30)	Organization (20)	Voc (20)	Grammar (25)	Mechanics (5)	Total (100)
1						
2						
25						

While, the writer used the Jacob's criteria (1981:90) in scoring the student's writing. It can be seen in the following table:

**Table 3.6**  
**The Criteria of Writing Evaluation**

No	Components	Criteria of each item	Score
1	Content	<p>Excellent to very good: Knowledgeable; substantive; thorough development of thesis; relevant to assigned topic.</p> <p>Good to average: Some knowledge of subject; adequate range; limited development of thesis; mostly relevant to topic, but lacks detail.</p> <p>Fair to poor: limited knowledge of subject; little substance; inadequate development of topic.</p> <p>Very poor: does not show knowledge of subject; non substantive; not pertinent; or not enough to evaluate.</p>	<p>30-27</p> <p>26-22</p> <p>21-17</p> <p>16-13</p>
2	Organization	<p>Excellent to very good: Fluent expression; ideas clearly stated; supported; succinct; well organized, logical sequencing; cohesive.</p> <p>Good to average: somewhat choppy; loosely organized but main ideas stand out; limited support; logical but incomplete sequencing.</p> <p>Fair to poor: non-fluent; ideas confused or disconnected; lacks logical sequencing and development.</p> <p>Very poor: does not communicate; no organization; or not enough to evaluate.</p>	<p>20-18</p> <p>17-14</p> <p>13-10</p> <p>9-7</p>
3	Vocabulary	Excellent to very good: sophisticated	20-18



		<p>range; effective word / idiom choice and usage; word form mastery; appropriate register.</p> <p>Good to average: adequate range; occasional errors of word / idiom form, choice, usage but meaning not obscured.</p> <p>Fair to poor: limited range; frequent errors of word / form choice, usage; meaning confused or obscured.</p> <p>Very poor: essentially translation; title knowledge of English vocabulary, idioms, word form, or not enough to evaluate.</p>	<p>17-14</p> <p>13-10</p> <p>9-7</p>
4	Language Use	<p>Excellent to very good: effective complex constructions; few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions.</p> <p>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.</p> <p>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</p>	<p>25-22</p> <p>21-18</p> <p>17-11</p> <p>10-5</p>

		<p>obscured.</p> <p>Very poor: virtually no mastery of sentence constructions rules; dominated by errors; does not communicate; or not enough to evaluate.</p>	
5	Mechanics	<p>Excellent to very good: demonstrates mastery of conventions few errors of spelling, punctuations, capitalizations, paragraphing.</p> <p>Good to average: occasional errors of spelling, punctuation, and capitalization, paragraphing, but meaning not obscured.</p> <p>Fair to Poor: Frequent errors of spelling, punctuations, capitalizations, paragraphing; poor handwriting, meaning confused or obscured.</p> <p>Very poor: no mastery of conventions dominated by errors of spelling, punctuation, capitalization, paragraphing; handwriting illegible; or not enough to evaluate.</p>	<p>5</p> <p>4</p> <p>3</p> <p>2</p>

### E. Types of Data

The researcher collected the data in the form of quantitative. The term of quantitative data used to describe a type of information that came from the data that expressed numerically. This type of data was often collected in experiments, and statistically analyzed. Quantitative data can be represented visually in graphs, histograms, tables and charts. The

quantitative data got from the result of students' writing test in form of written test.

## **F. Research Procedures**

### **1. Preparing**

The researcher used two classes to collect the data, the researcher taught the students using What-Why-How strategy for experimental class, and the English teacher taught a conventional technique (three phase technique) for control class. However, the material of the teaching was the same writing material. In short, the researcher was proposed this procedure.

- a. Determined the research time.
- b. Prepared the lessons plan arranged by curriculum.
- c. Explained to the students about the planning in learning process.
- d. Prepared the final test

### **2. Learning Process**

**Table 3.7**

**The Procedure in Teaching Writing in the Classroom**

<b>Teaching Activity</b>	<b>Experiment Class</b>	<b>Control Class</b>
<b>Pre-teaching activity</b>	1. the teacher greets the students by saying good morning, and good day and so on 2. the students check the students attendance list 3. teacher explain about the purpose of the lesson and	1. Greeting 2. Check attendance 3. Giving apperception 4. Giving motivation

	the activities.	
<b>Main-teaching activity</b>	<p><b>Exploration</b></p> <ol style="list-style-type: none"> <li>The teacher gives topic to students: on treatment 1-3             <ol style="list-style-type: none"> <li><i>the benefit of vegetables for our body</i></li> <li><i>the unhealthy fast food</i></li> <li><i>why you should eat breakfast</i></li> </ol> </li> <li>Teacher guide students to express what's their opinion, ideas, argumentations to the issue in WHAT column. Example: <i>what do you think about benefits of vegetables?</i></li> <li>The teacher asks the students to explain their reasons why they said that in WHY column. Example: <i>why do you think it vegetables is good for body?</i></li> <li>Teacher asks students write their explanation or prediction together with evidences or proof in HOW column. Example: <i>how do you know it? Please complete your reason in examples.</i></li> </ol> <p><b>Elaboration</b></p> <ol style="list-style-type: none"> <li>After the students fill the chart, students start to two part</li> <li>Teacher asks students to make hortatory exposition paragraph.</li> </ol>	<p><b>Exploration</b></p> <ol style="list-style-type: none"> <li>Teacher give question based on the topic to build the students background knowledge</li> <li>Students focus on definition, generic structure, language feature and grammar of Hortatory Exposition text</li> </ol> <p><b>Elaboration</b></p> <ol style="list-style-type: none"> <li>The teacher gives a model of Hortatory Exposition text.</li> <li>The teacher give one topic and guide the students in generating ideas.</li> <li>Teacher asks students make a text based on sample</li> </ol> <p><b>Confirmation</b></p> <ol style="list-style-type: none"> <li>Teacher ask for students to develop</li> <li>Students report their work</li> <li>Teacher emphasizes how to write a hortatory exposition text</li> </ol>

	<p>3. The students make a paragraph based on their chart</p> <p>4. The students write based on generics structure and feature language that has been taught.</p> <p><b>Confirmation</b></p> <p>1. After the students write their paragraph, the teacher introduce to the students about the concept an benefit of peer review</p> <p>2. Teacher ask the students to change their text with their friend</p> <p>3. Teacher asks the students to read and revise their friend text correcting the grammar and so on and the teacher guides them</p> <p>4. Teacher monitors the students and asks the students write all of their comment on a piece of paper and indicate whether they will revise based on each comment and why</p> <p>5. Teacher give her comment on the students revise draft</p> <p>6. Students ask to write their final draft based on comment from their peers and the feedback from the teacher</p>	
<b>Post-teaching activity</b>	<p>1. Review and conclude the lesson</p> <p>2. Giving reflection</p> <p>3. Closing the class</p>	<p>1. Review and conclude the lesson</p> <p>2. Giving reflection</p> <p>3. Closing the class</p>

### 3. Evaluation

After doing the learning process so the next step was the final test. The test gave to group as a sample. The test used a writing test. The students gave explanation about the components of writing that is measured. Such as: content, grammar, style, mechanic and form.

In finishing:

- a. Giving test to experimental and control class in the last meeting
- a. Processing data towards experimental and control class
- b. Taking conclusion from technique of data collection

### G. Technique of Data Collection

The data of this research was the student's score in post-test. The test gave to the experiment and control group. The students who were in experiment group and control group got the same test. They asked to write the Hortatory Exposition text based on some topics gave. After finishing the test, the students asked to give their writing to the researcher. Finally the Hortatory Exposition texts analyzed.

The data of this research was writing test score, which have achieved after post-test given. The post-test gave to sample classes after six meetings. The students who were in experiment group assigned to wrote an hortatory exposition text by used W-W-H strategy. For control group, the students asked to wrote hortatory exposition text based on the topics gave without W-W-H strategy.

## H. Technique of Data Analysis

This research involved many activities, therefore, various data needed to be analyzed and described to find the accurate result of the experiment. There was kind of main data, generally, that the writer tried to analyze through this research students' writing products (Writing Test).

It analyzed by using ESL Composition Profile which consists of five components such as: Content, Organization, Vocabulary, Language Use, and Mechanics.

The technique of data analysis used the statistical procedures. The formula that used is t-test. The purpose saw deference of writing ability achievement between control group and experimental group. The experimental group taught by using W-W-H strategy, and the control group without using the strategy.

Technique of data analysis in this research is statistical procedure. It gave a way to analyze the differences between the groups. To analyze the students' score in post-test, the researcher used T-test formula taken from (Sudjana: 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 was be done before analyzing the different mean by using T-test formula as follows:

- I. This formula applied to decide mean of students' test score in experiment and control group:

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

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

II. This formula used to decide standard deviation of experiment group

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

III. This formula used to decide standard deviation of control group

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

The formula of T-test were as follows ( Sudjana, 1996: 239)

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

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

Where:

- T = the value of t calculated
- $\bar{X}_1$  = mean score of experiment class
- $\bar{X}_2$  = mean score of control class
- $n_1$  = the number of subject of experiment class
- $n_2$  = the number of subject of control class
- $S_1^2$  = standard deviation of experiment group
- $S_2^2$  = standard deviation of control group

The  $T_{\text{table}}$  employed to see whether there was any significant difference between the mean score of post-test experiment and control class. The value of  $T_{\text{calculated}}$  consulted with the value of  $T_{\text{table}}$ . If the value of  $T_{\text{calculated}}$  is bigger than the value of  $T_{\text{table}}$ , the hypothesis was accepted. On the contrary, if the value of the  $T_{\text{calculated}}$  is equal, bigger or smaller



than the value  $T_{\text{table}}$ , the alternative one was not accepted ( $T_{\text{table}}$ )  $T_{\text{calculated}}$ .

The specifically of the data which get from final result analyzed by following steps:

### 1. Test of normality.

Test of normality intended to see whether data distribute normal or not. Test of normality used Liliefors test that stated by Sudjana (1992: 466) as following as below:

- a. Arrange student's score from low score to high score
- b. Based on score sample tested hypothesis null that the sample distributes normal. To test hypothesis null was done some steps below:

- 1) Score become standard number  $z_1, z_2, z_3, \dots, z_n$  with formula

$$z_i = \frac{x_i - \bar{x}}{s}$$

$x_i$  = Score to i

$\bar{x}$  = Mean

$s$  = Standard deviation

- 2) For each standard number and by using standard normal distribution list counts opportunity  $F(z_i) = P(z \leq z_i)$ .

- 3) Counting proportion  $z_1, z_2, z_3, \dots, z_n$  is smaller or equal with  $z_i$ .

This proportion is stated with  $S(z_i)$  formula:

$$S(z_i) = \frac{z_1, z_2, \dots, z_n \leq z_i}{n}$$

- 4) Counting difference  $F(z_i)$  and  $S(z_i)$ , then counting absolute value.

The biggest absolute value is stated by  $L_o$

To accept or reject hypothesis null compare between  $L_o$  with critical value  $L$  to test of Liliefors.

Test criterion:

If  $L_o < L_{table}$  means that sample data distribute normal

If  $L_o > L_{table}$  means that sample data do not distribute normal.

## 2. Test of variant homogeneity

This test was intended to see whether both groups have variant homogeneity or not. This test was done by using test  $F$ . The steps that was done for test variant homogeneity is according to Sudjana (1992: 139) that is:

- a. Counting each data group variant, then counting value  $F$  with formula:

$$F = \frac{S_1^2}{S_2^2}$$

Explanation:

$F$  = Test  $F$

$S_1^2$  = data variant result study of experimental class

$S_2^2$  = data variant control class

Compare value  $F$  is got through counting with value  $F$  that is got from distribution table data  $F$  with free degree  $(n_1 - 1, n_2 - 1)$ . If

$F_{calculate} > F_{table}$  means that sample class have variant homogeny, otherwise if  $F_{calculate} > F_{table}$  means sample class do not have variant homogeny.

### 3. Hypothesis Testing

Hypothesis testing intends to prove whether hypothesis was corrected or not, it means whether result study of experimental class was better than that control class. Based on hypothesis, so it was done one side test with formula hypothesis:

$$H_0 : \sim_1 = \sim_2$$

$$H_1 : \sim_1 > \sim_2$$

By  $\sim_1$  and  $\sim_2$  each are result study students' writing English to both experimental and control class. Thus hypothesis null ( $H_0$ ) from this research was mean of result study students to experimental class were same with mean result study students of control class and one hypothesis ( $H_1$ ) is mean of result study students to experimental class are better than that control class. Then it was done mean difference test with formula of T- test is as follow Sudjana (1992: 239)

$$\text{T-test: } t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

With

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

Where:

$\bar{x}_1$  = Mean score of experimental group

$\bar{x}_2$  = Mean score of control group

$s_1^s$  = Standard deviation of experimental group

$s_2^2$  = Standard deviation of control group

$n_1$  = Number of subject in experimental group

$n_2$  = Number of subject in control group

The T table employed to see whether there was significant difference between the mean score of both experimental and control group. The value of obtained consulted with the value of t table at the degree of freedom  $(n_1-1) + (n_2-n_2)$  and the level of confidence of  $95\% = 0,05$

If the value of obtained was less than the value of t table, the null hypotheses was accepted. On the contrary, if the value of t-obtained was equal or bigger than the value of t table, the alternative one was accepted.