

## CHAPTER III

### RESEARCH METHOD

#### A. The Research Design

This research used a quantitative research. The type of the research was an experimental research. According to Gay and Airasian, experimental research is “the only type of the research that can test hypothesis to establish cause-and-effects relationship”.<sup>1</sup> Thus, Creswell states that, an experimental research is used when the writer wants to establish possible cause and effect between the independent and dependent variable.<sup>2</sup> Independent variables are variables selected by the writer to determine their effect on or relationship with the dependent variable. In this research, the writer used a quasi experimental design with non-equivalent control group. It is an appropriate one to this research in order to know the significant effect of using Opinion-Proof strategy toward students’ ability in writing hortatory exposition paragraph at state senior high school 10 Pekanbaru.

The design of this research was a quasi-experimental design which used two groups pretest-posttest. Cohen states that quasi-experiment is in the natural setting rather than the laboratory, but where variables are isolated, controlled and manipulated.<sup>3</sup> The experimental groups is separated from the non-equivalent control group indicates that the experimental and control

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<sup>1</sup> L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application. Sixth Edition*, (New Jersey: Prentice-hall, Inc, 2000), p.367

<sup>2</sup> Jhon W. Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantative and Qualitative Research*, (New Jersey: Pearson Education, 2008), p. 299

<sup>3</sup> Louis Cohen, Lawrence Manion, & Keith Morrison, *Research Methods in Education Sixth Edition*, (New York: Routletge, 2007), p. 274

groups have not been equated by randomization<sup>4</sup>. In conducting this research, the writer took two classes. The first class was as an experimental class taught by opinion-proof strategy and another one was as a control class taught by conventional strategy. In the experimental class, the writer gave pre-test at the beginning of the teaching learning in order to know students' writing ability. Then the writer gave treatment in the middle at experimental class by using Opinion-Proof strategy. During treatment, the writer corporated by the observer, and post-test at the end of learning process in order to know the effect of using Opinion-Proof strategy toward students' ability in writing hortatory exposition paragraph. So, the design of this research could be illustrated as follows:

**Tabel III. 1**  
**The Research Design**

Class	Pre-test	Treatment	Post-test
Experimental	T1	X	T2
Control	T1		T2

Note:

T1 : Pre-test for both experimental and control class

T2 : Post-test for both experimental and control class

X : Receiving treatment, that is using Opinion-Proof strategy

: No treatment

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<sup>4</sup> *Ibid.*, p. 283

**B. The Location and the Time of the Research**

This research was conducted at state senior high school 10 Pekanbaru that is located on Bukit Barisan street, Tenayan Raya from February, 13<sup>th</sup> 2014 to March, 8<sup>th</sup> 2014.

**C. The Subject and the Object of the Research**

The subject of the research was the second year students at state senior high school 10 Pekanbaru. The object of this research was the effect of using Opinion-Proof strategy on writing hortatory exposition paragraph.

**D. The Population and the Sample of the Research**

The population of this research was the second year students at state senior high school 10 pekanbaru in 2013-2014 academic years. It has 9 classes which consists of 5 classes for natural science and 4 classes for social science. The total population of this research was 304 students.

Based on the limitation of the research. The writer took 2 classes after doing cluster sampling technique while XI natural science 4 is as an experimental class, and XI natural science 3 as is a control class.

**Table III. 2**  
**The Total Population of the Second Year Students at State Senior High School 10 Pekanbaru**

No	Classes	Population		Total
		Female	Male	
1	XI IPA 1	21	14	35
2	XI IPA 2	25	11	36
3	XI IPA 3	19	11	30
4	XI IPA 4	22	8	30
5	XI IPA 5	23	13	36
6	XI IPS 1	15	18	33
7	XI IPS 2	16	17	33
8	XI IPS 3	15	20	35
9	XI IPS 4	20	16	36
Total Population				304

**Table III.3**  
**The Sample of the Research at SMAN 10 Pekanbaru**

No	Classes	Population		Total
		Female	Male	
1	XI IPA 3	19	11	30
2	XI IPA 4	22	8	30
Total				60

### **E. The Technique of Collecting Data**

To obtain data from the samples of this research, the writer used writing test. The test had been distributed to measure the students' writing ability in writing hortatory exposition paragraph. The aspects that should be measured in writing hortatory exposition paragraph were content, organization, vocabulary, language features, and spelling and punctuation. The test was divided in two tests; pre-test and post-test. Pre-test was given before the treatment, while post-test was given after treatment.

**Table III. 4**  
**The Assessment for Hortatory Exposition Text**

No	Aspect Assessed	Score			
		1	2	3	4
1	Content				
2	Organization a. Thesis b. Argument c. Recommendation				
3	Vocabulary				
4	Grammatical features a. Action Verb b. Temporal Connectives c. Present Tense and Modals				
5	Spelling & Punctuation				
	<b>Total</b>				
	<b>Maximum Score</b>	20			

Explanation of score:

1 = incompetent

2 = competent enough

3 = competent

4 = very competent

$$\text{Final Score} = \frac{\text{Total Score}}{\text{Maximum Score}} \times 80$$

#### **F. The Validity and Reliability of the Test**

The quality of the instrument is very important. Every test, whether, it is a short, informal test, or a public examination should be as valid as the test constructor that can make it. So, the writer used a number

of procedures to measure the data that had been collected, was valid and reliable.

#### **a. The Validity**

Validity is the most important characteristic a test or measuring instrument can possess. Gay said that validity is concerned with the appropriateness of the interpretations made from test scores.<sup>5</sup> Clearly validity is a crucial feature of any test. If a test does not have high validity, if it does not allow users to make the interpretation desired, it should not be used. Furthermore, Gay states that there are three kinds of validity.<sup>6</sup> They are content validity, criterion-related validity, and construct validity. In order to know the validity of writing ability test, the writer used content validity. Thus, the test was given based on the material studied by the students. The material of the test was taken from the textbook used by the second year students at state senior high school 10 Pekanbaru.

#### **b. The Reliability**

Reliability in assessment is related to the consistency of the comparison to the preestablished standard.<sup>7</sup> The testing of students' writing ability had to have reliability in order to get the same scores obtained when the tests done were more than once. There are five types

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<sup>5</sup> L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application. Sixth Edition*, (New Jersey: Prentice-hall, Inc, 2000), p.161

<sup>6</sup> *Ibid.*, p. 162-168

<sup>7</sup> James D. Williams, *Preparing to Teach Writing: Research, Theory, and Practice*, Third Edition, (New Jersey: Lawrence Erlbaum Associates, Inc, 2003), pp.304

of reliability: stability, equivalence, equivalence and stability, internal consistency, and rater agreement. In this research, the writer used the rater agreement type of reliability concerned with inter-rater reliability as the scores were given by two raters. Then the intercorrelation of the raters is used in finding the reliability of the test. The following table is the category of reliability test used in determining the level of reliability of the tests.

**Table III. 5**  
**The level of Reliability**

No	Reliability	Level of Reliability
1	0.0 – 0.20	Low
2	0.21 – 0.40	Sufficient
3	0.41 – 0.70	High
4	0.71 – 1.0	Very High

**Table III. 6**  
**The Correlations's Score Between Rater 1 and Rater 2**

		rater1	rater2
rater1	Pearson Correlation	1	.490
	Sig.(2-tailed)		.006
	N	30	30
rater2	Pearson Correlation	.490	1
	Sig.(2-tailed)	.006	
	N	30	30

\*\*. Correlation is significant at the 0.01 level (2-tailed).

From the output above, it can be seen that  $r_o$  ( $r_{\text{obtained}}$ ) was 0.490 correlated to  $r_t$  ( $r_{\text{table}}$ ). It is necessary to find the df (degree of freedom).

$$df = N - nr$$

df : degree of freedom

N : Number of cases

nr : number of correlated variable

$$df = 30 - 2 = 28$$

The writer took  $df = 28$  to be correlated either at level 5% or 1%. At level 5%,  $r_{table}$  is 0.361; while at level 1%  $r_{table}$  is 0.463. Thus, the  $r_{obtained}$  is obtained higher than  $r_{table}$ , either at level 5% or 1%. So the writer concluded that there is a significant correlation between score given by rater 1 and score given by rater 2. In other words, the writing test is reliable.

Then, to know the level of the correlation, the  $r_o$  is process through *Spearman-Brown Prophecy formula* as follows:<sup>8</sup>

$$r_{tt} = \frac{nr_{A,B}}{1+(n-1)r_{A,B}}$$

Where,

$r_{tt}$  = inter-rater reliability

n = the number of raters whose combined estimates the final mark for the examines

$r_{A,B}$  = the correlation between raters, or the average correlation among all raters if there are more than two

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<sup>8</sup>Grant Henning, *A Guide to Language Testing; Development, Evaluation, and Research*, (Boston: Heinle&Heinle, 1987), p.85

### Hortatory Exposition Paragraph Reliability

The Reliability of Writing Test	
$r_{tt} =$	$\frac{nr_{A,B}}{1 + n - 1 r_{A,B}}$
$r_{tt} =$	$\frac{2 (0.490)}{1 + 2 - 1 0.490}$
$r_{tt} =$	$\frac{0.98}{1 + 0.490}$
$r_{tt} =$	$\frac{0.98}{1.490}$
$r_{tt} =$	<b>0.657</b>
$r_{tt} =$	<b>0.66 (high)</b>

Based on the data obtained above, the writer concluded that the inter rater reliability in this research was 0.66 categorized into high level.

### G. The Technique of Data Analysis

The data were analyzed by using statistical analysis. In analyzing the data, the writer used scores of pre-test and post-test of experimental and control groups. This score was analyzed statistically. In order to answer these research questions, writer analyzed the data by using 't' test formula through SPSS 17 version.

$$H_a : t_o > t_{table}$$

$$H_o : t_o < t_{table}$$

$H_a$  is accepted if  $t_o > t_{table}$  or there is a significant difference on students' ability in writing between students' taught by using Opinion-Proof strategy and without using Opinion-Proof strategy of the second year at state senior high school 10 Pekanbaru.

$H_o$  is accepted if  $t_o < t_{table}$  or there is no significant difference on students' ability in writing between students' taught by using Opinion-Proof strategy and without using Opinion-Proof strategy of the second year at state senior high school 10 Pekanbaru.

Besides, to analyze the students' score in writing ability, it can be classified into the following table:

**Table III. 7**  
**The Classification of Students' Score**

The Score Level	Category
80-100	Very Good
66-79	Good
56-65	Enough
46-55	Less
0-45	Fail

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<sup>9</sup> Anas Sudijono, *Pengantar Evaluasi Pendidikan*, (Jakarta: PT RajaGrafindo Persada, 2012), p. 35