

## **CHAPTER III**

### **RESEARCH DESIGN**

#### **3.1 Research Design**

The research can be implemented by having design to determine the rules for applying the study. Then, the design of this study is experimental study. It is because the purpose of this study is knowing the effect of paraphrasing strategy while the researcher applies Paraphrasing Strategy toward students' reading comprehension. Thus, it is such kind of a measurement to that strategy itself either paraphrasing strategy gives good impact for students' reading comprehension or it does not influence students' reading comprehension at all for 8<sup>th</sup> grade of Nurul Huda junior high school.

In fact, this study is experimental research. So, it belongs to quantitative research. Then, it needs T-test to check the result of the study (Arifin, 2010:14). It is also quasi experimental design because the researcher is not allowed to select the subjects to determine them into two groups. Therefore, this study of research will consist of two groups while implementing experimental research. They are control and experimental group. Therefore, there will be two classes to be the subjects of this study.

Thus, researcher will give treatment by teaching for both groups but the control group is not taught reading by using paraphrase strategy. So that, they will have teaching and learning process as they always did with their English teacher. Second is experimental group. They will have paraphrasing strategy in learning process. Even they are different for getting treatment. In addition,

we can say that this study will have two variables, they are: x (control group) and y (experimental group).

### **3.2 Population and Sample**

The population of this study is students of the 8<sup>th</sup> grade of Nurul Huda junior high school. The total number of population is 84 students who are separated into three classes (8A, 8B, and 8C). Thus, researcher uses biased sample because it only has three classes. This study is demanded to have two groups as control and experimental group. In addition, researcher must give pre test to another group which is beyond those two groups at first. Then, Researcher chooses 8<sup>th</sup> grade because there is not isolation for gender. Otherwise, eighth and ninth grade of Nurul Huda junior high school get isolation of gender. There will be male and female class. It means that there will be male and female students in a class for its grade. In this case, researcher needs two classes for being experimental and control group.

Therefore, for deciding those two groups of three classes, researcher has discussion with the English teacher to choose which classes will be experimental and control group. It must be based on students' ability. In other words, it must be approximately equal for the degree of them. They are 8A as control group and 8B as experimental group.

### **3.3 Research Instrument**

The instrument of this experimental study is test. Therefore, students are asked to paraphrase a sentence. Then, they must find the appropriate synonym which can replace some words. In order to they do not copy and paste from the words which are available from the text. In addition, researcher used SPSS (Statistical Product and Service Solution) version 15.0. to count the result of the tests though pre and post test in this experimental research.

#### **3.3.1 Validity of the Instrument**

According to Ary (2006; 2010), validity is a term which is usually used to be connected with the content of a test. Then, validity has two kinds according to Carter and Porter (2000). They are internal and external validity. First, internal validity means related to the appropriateness between research hypotheses and research questions. Second is external validity. It relates to the generalization of research finding beyond the immediate of sample and setting.

There is a material which will be used in this study. It is descriptive text. Descriptive text is one of topics which is available in standard and basic competence of seventh grade in even semester. So, the researcher uses descriptive text for both of kinds of test. It can be shown from the following table of basic and standard competence.

Standard Competence	Basic Competence
12. Writing Expressing the meaning in functional text and short simple essay (descriptive and procedure) for having interaction with others.	12.2. Expressing the meaning and rhetorical step in short simple essay by using appropriate words accurately, smoothly, and thankfully for having interaction with others by having descriptive and procedure text.

*Taken from MGMP English VII grade*

Then, the researcher needs a formula to determine validity of the test.

Even the researcher uses SPSS version 15.0 but she is going to write the

formula for

$$r_{xy} = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - (\sum X)^2\} (N\sum Y^2 - (\sum Y)^2)}}$$

Means:

$r_{xy}$  : the coefficient of correlation between x and y variable or validity of each item,

N : the number of subjects who are participating of the test,

X : the sum of X scores,

Y : the sum of Y scores,

$\sum Y$  : the sum of total score for each student,

$\sum X$  : the sum of score in each item,

$\sum XY$  : the sum of each student with the total score in each item,

$\sum X^2$  : the sum of the square score in each item,

$\sum Y^2$  : the sum of square total score from each student.

Then, for determining each item in the test, there will be a measurement as categorizations. They are:

$< 0,3$  : difficult

$0,3 - 0,7$  : medium

$0,7 - 1$  : easy

### 3.3.2 Reliability of the Instrument

According to Blerkom (2009), reliability is such kind of repetition while we have the same result. Correlating in this study means that we are going to test our pre test. Then we test/try it out more than once. Meanwhile, we get the same result for the test. So, it is called that our test is reliable. To define reliability manually uses the formula below:

$$r_{xx} = \frac{K \cdot Sx^2 - x(k-x)}{Sx^2 (k-1)}$$

Where

$$S = \sqrt{\frac{\sum Fx^2}{n-1}}$$

$$x = X - \bar{x} \quad \bar{x} = \frac{FX}{n}$$

Note:

K : total items which are accepted,

n : numbers of students who follow the test,

X : total of the correct answer,

F : total of students who got the particular score in X

FX :  $F \times X$

The criteria:

0,0 - <0,20 : lowest reliability

0,20 - <0,40 : low reliability

0,40 - <0,60 : quite reliability

0,60 - <0,80 : high reliability

0,80 - <1,00 : highest reliability

### 3.4 Data Collection

Researcher needs some steps to get the data. Researcher gets the data by having paraphrasing implementation. It is got while the researcher teaches two groups as the subjects in this study. In opposition, students who are control group will not be taught by paraphrasing strategy but experimental group will have paraphrasing strategy to improve their reading comprehension.

Then, researcher will give a test to the students. They must be able to paraphrase a sentence by looking for appropriate word to replace certain word.

It must be done because finding synonym is one of ways to paraphrase a sentence or paragraph. Finally, researcher will give post test for both groups.

### 3.5 Data Analysis

The next step after collecting the data is analyzing the data. Then, the researcher will use independent sample t-test to analyze the data. It is caused that the subjects are small and both of groups are independent because they do not influence each other.

Then, non-parametric data will be used for counting the data. It means that researcher needs a theory of test. She chooses Kolmogrov sample T-test theory because this study consists of two independent variables.

#### 3.5.1 Homogeneity Test

The purpose of the test is to find the effects of using paraphrasing strategy whether it gives positive or negative effects for experimental group which will get treatment. Otherwise, pre and post test are given to know the variance of experimental and control group are homogeneous.

For measuring homogeneity test itself, the researcher uses one Levene's test of homogeneity test in SPSS. The statistic test of Levene is described below:

$$W = \frac{(N-k) \sum_{i=1}^k N_i (Z_i - Z)^2}{(k-1) \sum_{i=1}^k \sum_{j=1}^{N_i} (Z_{ij} - Z_i)^2}$$

Where:

W : the result of the test

K : the number of different groups to which the samples belong

$N$  : the total number of samples

$N_i$  : the number of samples in the  $i^{\text{th}}$  group

$Y_{ij}$  : the value of the  $j^{\text{th}}$  sample from the  $i^{\text{th}}$  group

$$Z_{ij} = \left\{ \begin{array}{l} |Y_{ij} - \bar{Y}_i|, \bar{Y} \text{ is mean of } i - \text{th group} \\ |Y_{ij} - \hat{Y}_i|, \hat{Y} \text{ is a median of } i - \text{th group} \end{array} \right\}$$

### 3.5.2 Hypotheses Test

Hypotheses test is used to calculate the difference between two variables. They are experimental and control group by using t-test at 0,05 (5%) at the significance level. It means that if asymptotic significant (2.tailed) is  $> 0,05$ , so null hypothesis ( $H_0$ ) will be accepted. In opposition, asymptotic significant (2.tailed) is  $< 0,05$ , so null hypothesis ( $H_0$ ) will be rejected.

In hypotheses test, there will be three steps to analyze the data. They are: stating the hypothesis, setting the criterion of significance level, and interpreting the result. The hypothesis can be described follow:

Null hypothesis is  $\mu_1 - \mu_2 = 0$  ( $\mu_1 = \mu_2$ )

Alternative hypothesis is  $\mu_1 - \mu_2 \neq 0$  ( $\mu_1 \neq \mu_2$ )

$H_1$  : The students who are taught using paraphrasing strategy for knowing the effect to their reading comprehension of descriptive text.



H2 : The students who are not taught using paraphrasing strategy for knowing the effect to their reading comprehension of descriptive text.

Hypotheses test in this study is:

Ho : There is not significance effect using Paraphrasing strategy to students' reading comprehension of seventh grade in Nurul Huda junior high school.

The second step is setting the criterion of using independent t-test formula and stating the probability with the significance level for testing the hypotheses. Manually, the formula of t-test is:

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{s_{\bar{x}_1 - \bar{x}_2}}$$

where

$$s_{\bar{x}_1 - \bar{x}_2} = \sqrt{\frac{s^2_{pooled}}{n_1} + \frac{s^2_{pooled}}{n_2}}$$

Pooled variance is the average of the two sample variances, allowing the larger sample to weight more heavily. The formula is:

$$S^2_{pooled} = \frac{(df_1) s^2_1 + (df_2) s^2_2}{df_1 + df_2}$$

$$\text{or } S^2_{pooled} = \frac{SS_1 + SS_2}{df_1 + df_2}$$

$$df_1 = df \text{ for } 1^{\text{st}} \text{ sample; } n_1 - 1$$

$$df_2 = df \text{ for } 2^{\text{nd}} \text{ sample; } n_2 - 1$$

The estimation of standard error of difference is:

$$S\bar{x}_1 - \bar{x}_2 = \sqrt{\left(\frac{SS1+SS2}{n1+n2-2}\right) \left(\frac{1}{n1} + \frac{1}{n2}\right)}$$

The researcher uses SPSS version 15.0. so she is going to insert the data of post test for both of groups (experimental and control group) as the first step. Then, the second step is going to Analyze Menu, select Nonparametric Test as a submenu, after that, click 2 Independent Sample, fill Test Variable List, and then group the variable. Then, the last step is interpreting the result of the data which the null hypotheses is accepted or rejected.

