

## **CHAPTER III**

### **RESEARCH METHOD**

The description of the methodology of the research will be presented in this chapter. Research methodology is an important part in conducting a study. It is needed to be described because it contains the way of general logic and theoretical perspective for a research project. This chapter presents the research design, subject of the study, data collection, data analysis used in the research.

#### **3.1 Research Design**

In this study, the researcher wants to investigate whether there is significant correlation or not between the two quantitative variables by comparing the proven of testing scores, so correlation approach is applied for this study.

Correlation is area of statistic concerned with the study of systematic relationships between two (or more) variables (Butler, 1985: 137). There will be two variables in this study, students' grammar mastery and reading comprehension. The variables are students' grammar mastery (X) and students' reading comprehension (Y).

#### **3.2 Population and Sample**

##### **3.2.1 Population**

A population is a set (or collection) of all elements possessing one or more attributes of interest (Arikunto, 2012: 173). Creswell (2012: 142) states that population is a group of individuals who have the same characteristics. From the

definition above, it could be concluded that population are all aspects that everything has been subject or object of research. In this research, the ninth grade students of SMP Muhammadiyah 1 Gresik are being the population of this research. The number of the population members involved in this research is 82 students which are divided into three classes, they are IX A, IX B, and IX C.

### **3.2.2 Sample**

According to Arikunto (1998) sample is a part of population. There are four techniques which are used in selecting sample. They are random, stratified, cluster and systematic sampling. In this study, the researcher uses cluster sampling for getting the sample from population, because the subject is chosen in cluster. That is in a group of individuals, but it is not an individual. According to Ary (1990) cluster sampling is the chosen unit in and not an individual, but it is a group of individuals who are naturally together. Cluster means a group of individuals which are close together. In this case, the researcher uses the cluster sampling technique by taking a group of ninth grade from three classes, such as; IX A, IX B, and IX C class which are taking IX C class as the sample or an individual group.

The researcher chooses IX C class as the subject of this study because there is a consideration from the English teacher which is given the students' record from the previous semester which is shown that IX C class is the less reading comprehension score rather than another class in Ninth grade. They have a good grammatical competence in roles, but it was not same in reading comprehension provided by analyzing reading text, they had difficulties to translate and answer the question of text. It was the biggest questionable thing that

the researcher should break down and the researcher wants to investigate and finally prove the study in that class.

### **3.3 Data Collection**

Data collection is collecting specific information about students' academic performance in the mastery of grammar. Collecting data is assistance to the researcher to find the data in the field of study which examined. In this study the researcher uses some instruments to collect the data. Furthermore, researcher will explain the procedure of collecting data in this study. The instruments and procedure of data collection used in this research are set as follows:

#### **3.3.1 Grammar Test**

Past tenses test will be given to measure students' grammar mastery for foreign language subject. In this study, researcher uses paper-based past tenses test to get score of students' grammar mastery. Researcher will use 20 the questions about analyzing the tenses.

#### **3.3.2 Reading Comprehension Test**

Narrative text test will be intended to test students' reading comprehension., the questions are about analyzing text which consists of finding main idea, factual information, identifying the orientation, conclusion and to restate the idea in reading narrative text. In this test, the students should read the text and also answer the questions. The researcher gives 20 questions for the students to answer.

### 3.4 Procedure

There are some procedures for collecting data in this study. The first steps, researcher prepares the instruments of the research. The instruments are past tenses test and narrative text test. Before instruments are going to be tested to the subject of the research, researcher will check the validity and reliability of the instruments by consulting with English teacher who teaches the sample class. The second, the researcher will make try out to measure the validity by using Pearson product moment such the idea of Widiyanto (2010:34-37) who stated bivariate correlation is one of formulas to check instruments' validity. Then for the reliability, the researcher is going to use SPSS 16.0 to analyze the reliability.

After the preparation finished, researcher will do second steps, testing the instrument to another class which has the same characteristic with the sample. The researcher will choose IX B class based on the suggestion from English teacher who teaches IX C and IX B classes. In this point, Grammar test will be administered in one session within one meeting of the class. Another session of reading comprehension test will be given to the same students who have done grammar test. The researcher will be presented in each session and administered both test under standard condition.

The next steps, researcher will collect all data both Grammar test where each question has 1 point presented in (true answer :  $20 \times 5 = \text{score}$ ) and reading comprehension test also has 1 point each question presented in (true answer :  $20 \times 5 = \text{score}$ ). The last, scores will be imported to SPSS for statistical analysis and conduct a correlation between two variables of grammar mastery proven past

tenses test and reading comprehension in narrative text test, then correlation between variables will be estimated.

### **3.5 Data Analysis**

For analyzing data, researcher has to be considered first to the variables exist in this research. In this case, the variables are grammar mastery and reading comprehension of IX (C) SMP Muhammadiyah 1 Gresik students. The variable of grammar mastery will get from grammar test.

While two kinds of variable will be measure from the grammar and reading comprehension test. After that, for analyzing the data researcher will use SPSS 16.0 software. For the steps of data analysis researcher defines steps which described as follows.

#### **3.5.1 Coefficient of Correlation**

After getting the result of the normality test, researcher is going to analyze whether there is correlation between two variables or not by determining the coefficient of correlation. The variable of grammar mastery refers to independent variable (X) and reading comprehension refers to independent variable (Y). For the correlation analysis those variables, researcher uses Pearson Product Moment Coefficient.

Pearson Product Moment Coefficient can be used to measure correlation between grammar mastery and reading comprehension. Pearson correlation coefficient is appropriate to variables of the ratio or interval type and it is also assumes that each set of scores is normally distribute. The coefficient of correlation expressed by the notation “r” which indicates the strength or weakness

the relationship of those variables. The interpretation for calculating correlation coefficients are the value of +1 is obtained for perfect positive correlation, a value of -1 for perfect negative correlation, and a value of zero for no correlation at all (Butler, 1985: 141).

$$r = \frac{n(\Sigma XY) - (\Sigma X)(\Sigma Y)}{\sqrt{[n\Sigma X^2 - (\Sigma X)^2][n\Sigma Y^2 - (\Sigma Y)^2]}}$$

r = person r correlation different

n = number

$\Sigma xy$  = sum of the product paired source

$\Sigma x$  = sum of x scores

$\Sigma y$  = sum of y scores

$\Sigma X^2$  = sum of squared x scores

$\Sigma Y^2$  = sum of squared y scores

*The formula of Pearson Product Moment Coefficient.3.5.2*

### 3.5.2. Hypothesis Testing

After consider the coefficient of correlation, the next researcher is going to analyze whether there is significant correlation of the variables or not by using hypothesis testing. Hypothesis testing is needed to determine statistical correlation of the current study. So, null hypothesis need to be drawn in this step. The hypothesis of this study can be formulated as follows:

H<sub>0</sub> : there is no significant relationship between students' grammar mastery and reading comprehension.

H<sub>1</sub> : there is significant relationship between students' grammar mastery and reading comprehension.

After formulating the hypothesis, the next step is comparing the “r” value of Pearson’s Product Moment calculation from the output of the SPSS to the level of

significance for testing the hypothesis. The significant level of this study or  $\alpha$  (alpha) is at 5% level (0,05). After the scores are computed in SPSS, while see the Pearson's r.

<b>r value</b>	<b>Interpretation</b>
<b>&lt; 0,+/-1</b>	<b>Weak</b>
<b>&lt; 0,+/-3</b>	<b>Modest</b>
<b>&lt; 0,+/-5</b>	<b>Moderate</b>
<b>&lt; 0,+/-8</b>	<b>Strong</b>
<b>≥ +/-0,8</b>	<b>Very strong</b>

*Table 3.6 The interpretation r value*