

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

In this chapter, the researcher describes the research method. It consists of research method, research design, population and sample, variable, research instrument, validity and reliability testing, normality testing, data collection method, and data analysis.

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

“Research designs are plans and procedures for research that span the decisions from broad assumption to detailed method of data collection and analysis.” (Creswell: 2009)

This study was conducted in pre-experimental design, by using quantitative approach with one group pretest – posttest design. This study used pre-experimental because to know the effectiveness of teaching using picture on students skill in writing descriptive text at SMPN 3 Kedungwaru. The researcher just took one group or class and used pretest and posttest to see the result of the treatment.

This study was classified as pre-experimental design because it was little or no control of extraneous variables. In the one group pretest-posttest design, the dependent variable was measured or observed not only after treatment of some sort, but also before the treatment.

Pre-experimental design involves administering a pretest measuring the dependent variable, applying the experimental treatment X to the subjects, and administering a posttest. Again to measure the dependent variable. The effect of experimental treatment was found by comparing the pretest and posttest scores.

**Table 3.1. One group Pretest-Posttest Design**

<b>Pretest</b>	<b>Independent</b>	<b>Posttest</b>
<b>Y1</b>	<b>X</b>	<b>Y2</b>

Y1 was pretest and it was given before the teaching or treatment was applied. The purpose of the pretest was to measure the students' writing ability before they got treatment X. X was considered as the treatment, namely the teaching by using media of picture about public figures. Y2 was known as Posttest. Which the researcher conducted after the treatment to know the achievement of the students or the subjects.

Using this form of research, the influence of experimental treatment could be seen by analyzing or comparing the results of the pretest and posttest.

In this study, the researcher measures the effectiveness of using picture in teaching writing by experimental research. The impact was assessed by providing a specific treatment. The effectiveness would be identified after knowing the significant difference between the students who were taught before using picture and after using picture.

## **B. Population, Sample, and Sampling**

### **1. Population**

Population is the whole objects of the research which may consist of human beings, things, phenomenon, animals, and plants, test scores, or even whose characteristic are the data source in the research. A population is defined as all members of any well-defined class of people, events, or objects (Ary, Jacobs, & Sorensen, 2010, 2006).

The population on this research is the Eighth Grade of SMPN 3 Kedungwaru in the academic year 2016 – 2017. It consist of 315 students and devided into nine classes.

### **2. Sample**

Sample is a portion of the population selected for the data source. Sukardi (2003:54). Sampling is a way the reseacher select the number of individuals as a sample which represents the population. The sample in this study is 35 of the students of VII A at SMPN 3 Kedungwaru, which is purposivety selected.

### **3. Sampling Technique**

Sampling is the process of selecting a number of individual for a study in such as a way that the individuals represent the large group from which they were selected. In this research, the researcher used purposive sampling technique to obtain the samples of the study because obtaining the subjects of the study by randomizing the

students of the school was quite impossible. This is due to the school policy that the students were not allowed to be regrouped.

### **C. Research Variable**

According to Ary Donald (2010:37) variables are constructs or characteristics that can take on different values or scores. They are classified as independent variables or dependent variables.

#### **1. Independent variable (X)**

Independent variable is variable which is manipulated by researcher deliberately. In this research independent variable was teaching writing descriptive text by using public figure photo. The independent variable is the variable that the cause of the emergence of dependent variable.

#### **2. Dependent Variable (Y)**

Dependent variable is a variable that is influenced by the independent variable. In this research, dependent variable was students' scores in writing descriptive text.

### **D. Description of Treatment**

Using public figure photo in teaching writing on descriptive text was conducted in several stages which are mainly discussed as follow: In the first stage, the researcher explained about descriptive text, so the students would know and understand about what descriptive text is. The researcher provided a list of examples of objective words usually used in

descriptive text, like *handsome, beautiful, old, young* and soon. Then, he gave a piece of public figure picture and asked the student to write down the words related to the picture and then the researcher reviewed them later. The researcher believe that this activity can improve the vocabulary of students and help them to write descriptive text because from this way they would find new vocabulary related to the picture.

In the second stage, the reseacher provided an example of making grammatically correct sentence related in the picture. For example, constructing a sentence like 'He is very handsome', 'she is beautiful' and the like. And also he explained how to use *is/am/are, have/has* in a sentence. The researcher gave instructions to the students to produces some sentences related to the picture after his explanation. The reseacher believe that this activity could improve students grammar, and would help them in writing a descriptive text in later stage. Here the student would have enough practice practice to write a grammatically correct sentence in relation to the picture being described.

After students were able to construct correct sentences, the reseacher would give an example of descriptive text about public figure along with the explanation about generic structure in descriptive text, namely :

#### 1) Indentification

In the last stage, the reseacher asked to the students to write identification sentences and description sentences in one paragraph

related to the picture. In identification sentences the researcher asked the students to identify the figure in the picture and write their sentences down. For example : *He is Steven William, He is an Indonesian artist.* After that he asked the students to write description sentences.

## 2) Description

In description, the researcher guided the students to write the appearance of public figure, and followed the activity by analyzing which sentence could be a topic sentence, and which ones could be supporting sentences, then ask them to arrange the sentences into a coherent paragraph. The activity is then closed by asking, the students to write one paragraph of descriptive text with a public figure picture and the researcher would correct the students works. The treatment were conducted in 3 meetings, dated on April 5<sup>th</sup> 2017 until April 12<sup>th</sup> 2017. After the researcher felt that the entire process of treatment is sufficient, he then administered a posttest.

## E. Research Instrument

Research instrument refers to any equipment used to collect the data (Arikunto, 2010:262). As an experimental research, the instrument used in this research was tests, especially writing test. According to Ary et al (2006:201) test is a set of stimuli presented to individual in order to elicit responses on the basis of which a numerical score can be assigned.

There were two kinds of tests in this study, those were pre-test and post-test. Pre-test was intended to measure students' writing achievement in descriptive text before the treatment given. While, post-test was to measure students' writing achievement in descriptive text after the treatment given. The tests were in the form of subjective test on writing descriptive text to measure students' writing achievement.

Furthermore, the writer gave score to the students' writing by using scoring guide of writing adapted from Heaton (1975), as presented below:

**Table 3.2 : Scoring Guide of Writing**

Element		Score
Grammar		$x = \frac{\text{total correct sentence}}{\text{total sentence}} \times 100$
Vocabulary	Spelling	$x = \frac{\text{total correct spelling}}{\text{total words}} \times 100$
	Meaning	$x = \frac{\text{total correct meaning}}{\text{total words}} \times 100$
Word number		$x = \frac{\text{Number of words written}}{\text{Number of words requested}} \times 100$
Paragraph Development	<b>Content</b>	<b>Score</b>
	TS(topic sentence)+SS(supporting sentence)+sequentially	A (100-89)
	TS+SS+not in sequence	B (89-70)

	Without TS+SS+not in sequence	C (69-50)
	Without TS+WithoutSS+not in sequence	D (50-<)

## 1. Validity and Reliability testing

Researcher is always dependent upon measurement. There are two important characteristics that every measuring instrument should go through a process of validity and reliability check.

### a. Validity

Fraenkel and Wallen (2005:113) states that a valid instrument is measures what it is supposed to measure. Validity is the most important idea to consider when preparing or selecting an instrument for use.

These are four types of validity; 1) Content validity, 2) Criterion related validity, 3). Construct validity, 4). Face validity. In this research, to measure whether the test has a good validity, the researcher analyzed the test from face validity and content validity.



### **1). Face validity**

Face validity refers to the degree to which a test looks right, and appears to measure the knowledge or abilities it claims to measure, based on subjective judgment or the examinees who take it, the administrative personnel who decide on its use, and other psychometrically unsophisticated observers (Brown, 2004). The test in this research was designed to measure students' writing skill, thus, to achieve face validity, the researcher provided the instructions to ask students to write. In this study, the face validity was done through validated by the expert.

### **2). Content Validity**

Content validity means there is correspondence between curriculum objectives and the objectives being tested. It means that test is said to have content validity if its objectives are same with the curriculum objectives. It is sometimes called curriculum validity. The test will be valid if the objectives of the test do not outside from the curriculum objectives that have been set by educational policy. The relevancy of the objective of the test and the content of the test items shows the content validity of the test .

In this case, the researcher also checked the curriculum set to know what students must be able to do in certain level,

especially in junior grade. The researcher found that students in eight grade of junior high school should be able to write around three genres: descriptive, narrative and recount. In this case, the researcher used descriptive text as the topic.

**Table 3.3 Content Validity**

Basic competence	Material/Skill Test	Indicator	Form Test
Expresses the meaning and steps of rhetoric in a simple short essay using accurate written language, fluent and acceptable to interact with the surrounding environment in <i>descriptive text</i>	Descriptive text/ Writing Descriptive text	Students be able to write one paragraph of descriptive text(8-10 sentences)	Writing Test

## **b. Reliability**

Reliability is a measure of accuracy, consistency, dependability or fairness of scores resulting from administration or particular examination. According to Heaton (1989:162) reliability is necessary characteristic of any good test: for it to be valid at all, a test must first be reliable as a measuring instrument. Ary (2002:250) states that reliability is concerned with the effect of such random errors of measurement on the consistency of scores.

Actually, the ideal test should be both reliable and valid. In this research, the researcher used SPSS 16.0 for window to know the reliability of test instruments. According to Ridwan (2004:118), the criteria of reliability instrument can be divided into 5 classes as follows:

1. If the *alpha cronbach* score 0.00-0.20: less reliable
2. If the *alpha cronbach* score 0.21-0.40: rather reliable
3. If the *alpha cronbach* score 0.41-0.60: enough reliable
4. If the *alpha cronbach* score 0.61-0.8: reliable
5. If the *alpha cronbach* score 0.81-1.00: very reliable

The result of reliability testing by using SPSS 16.0 can be seen from the table:

**Table 3.4 Result of reliability****Reliability Statistics**

Cronbach's Alpha	N of Items
<b>.624</b>	2

To know the items is reliable or not it can be seen from Alpha Cronbach's column. The Alpha Cronbach's score = 0.624 means that it is reliable. The list of students try out scores is presented in the appendix.

**F. Data Collection Method**

Data of this study is collected by administering test. Test is simple terms, a method of measuring a persons' ability knowledge, or performance in a given domain. (Ary, Jacobs, & Sorensen, 2010, 2006) the researcher uses two kinds of test those are pretest and Posttest.

In this research, the researcher used writing test by using picture to measure the student writing skill in descriptive text. The instrument used in writing test. It was to know the students' ability in writing before and after being taught by using picture. Furthermore, there are two writing tests administered here, namely pretest and posttest:

## 1. Pretest

Pretest is a test that is given to all of eighth grade students at SMPN 3 Kedungwaru. To measure their ability before treatment process, this test is given to know the basic competence for 35 students and to know the earlier knowledge before they got treatment. Before treatment, pretest is a test which had done to measure the student achievement in the first time. Pretest was done before treatment process. It was done on Wednesday, March 29<sup>th</sup> 2017 Pretest is given to experimental group; it is to know the writing skill of the students. The scores are the analyzing results to determine the students' score between pretest and posttest.

## 2. Posttest

Posttest is test that is given to all of eighth grade students at SMPN 3 Kedungwaru. To measure their ability after treatment process, this test was given to know the basic competence for 35 students and to know the knowledge after they got treatment. It was done on Wednesday, April 19<sup>th</sup> 2017 It is to know final score and to know the students competence difference before and after they get treatment. Treatment here means that the researcher use picture in teaching writing descriptive text. This test gave after teaching process has done.

## G. Data Analysis

The technique of the data analysis used in the research is quantitative data analysis. This is a technique used to analyze and count the data, to know the students' skill on writing descriptive text by using picture. The analysis of data and hypothesis testing in this research used paired sample T test stated by SPSS v.16.0. The researcher's assumptions in hypothesis testing bu significance level are as follow :

1. If  $t_{\text{count}} > t_{\text{table}}$ , the Null Hypothesis ( $H_0$ ) is rejected and alternative hypothesis ( $H_a$ ) is accepted. It means there is a significant difference of students' writing achievement on descriptive text before and after being taught by using picture.
2. If  $t_{\text{count}} < t_{\text{table}}$ , the Null hypothesis ( $H_0$ ) is accepted and alternative hypothesis ( $H_a$ ) is rejected. It means there is no a significant difference of students' writing achievement on descriptive text before and after being taught by using picture.

The formula above has a function to find out the significant difference of students' writing ability on descriptive text before and after being taught by using picture. The technique of data analysis which used by the researcher belonged to quantitative data analysis and the data were analyzed statistically by using T-test.

The test criterion is :  $H_a$  is accepted if calculated  $t_{\text{count}} > t_{\text{table}}$ , by degrees of freedom of  $df = (N - 1)$  and by the chance of 0.05 level of significance.