

CHAPTER III

RESEARCH METHOD

A. Design of Research

There are many kinds of researches design in conducting a research. In this research writer used quantitative approach because the data is obtained from the field of the research. The writer then analyzed statistically.

In this research, writer used experimental research design. Experimental research is a research that gives special treatment to the experimental class to observe the effect of the treatment.

B. Setting of Research

The research has been conducted in SMP Negeri 23 Semarang. The research was carried out about two weeks from 17th October 2016 up to 29th October 2016.

C. Subject of Research

1. Population

Based on Arikunto, population is a group of individual persons, objects, or items from which samples are taken for measurement.¹ Population is all of subject or individual of the research, or set of all element units. The population in this research is all of eighth grade of SMP Negeri 23 Semarang in

¹ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek*, (Jakarta: PT Rineka Cipta, 1998), p.115

Year Academic 2016/2017. Eight grade of SMP Negeri 23 Semarang has 8 classes and 256 students.

2. Technique of Sampling and Sample

Technique of sampling is way to take sample from population. To determine the samples used in research, there are various techniques that are used.

In general, technique of sampling is divided into two, probability sampling and non-probability sampling.² This research, the technique of sampling the writer used was probability sampling, where all the population has the same opportunity to be chosen as sample.

There are different types of probability sampling, simple random sampling, proportionate stratified sampling, disproportionate stratified random sampling cluster sampling, systematic sampling and other types of sampling techniques. In this research, writer used cluster random sampling. This technique treats the population as homogeneity and took the sample random without being considered the strata in the population.

It is better to take all the population if the number of population is less than 100, with other word do population research, but if the population more than 100, researcher can

² Sugiyono, *Statistika Untuk Penelitian*, (Bandung: CV Alfabeta, 2003), p.56-57

take 10% - 15%, or 20% - 25%³ or more. It depends on the time and budget of researcher.

A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster, 1985). Sample is part of the population or part of element units taken from population. In this research, writer took 8-D class as experiment class and 8-E class as control class. Each class has 32 students, so the sample of the research was 64 students.

D. Variable and Indicator

There are two variable in this research, variable X and variable Y.

1. Independent variable (variable X)

Independent variable is the variable that the researcher expects to influence the other.⁴ The independent variable of this research is using picture series as visual media.

2. Dependent variable (variable Y)

Dependent variable is variable that measures the influence of the independent variable.⁵ The dependent variable of this research is students' writing ability of descriptive text. Indicators for dependent variable are identifying variation of sentence structure in descriptive text, identifying the rhetorical

120 ³ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek*, ...

⁴David Nunan, *Research Method in Language Learning*, (Cambride: Cambride University Press, 1992), p.25

⁵David Nunan, *Research Method in Language Learning*, ...p. 25.

step of descriptive text, identifying the communicative purposes of descriptive text and making a correct descriptive text.

E. Techniques of Collecting Data

1. Test

Based on Cambridge dictionary, test is a way of discovering, by questions or practical activities, what someone knows, or what someone or something can do or is like. Test is some questions that are used to measure the knowledge, intelligence, skill or ability from individual or group.⁶

Test was done to measure students' writing ability of descriptive text. Test will be conducted two times, to find the score of students' writing of descriptive without using picture series and score of students' writing of descriptive using picture series. There are five elements of writing assessment writer used as a guidance of writing assessment. There are content of text or writing, language use, organization, vocabulary and mechanics.

⁶Suharsimi Arikunto, *Manajemen ...* p.150

2. Documentation

Documentation is including official information including students' name list, students score list and documentation of process of research on SMP Negeri 23 Semarang.

F. Procedure of Research

This research was done after several steps and was conducted after getting permission from the headmaster of SMP Negeri 23 Semarang. The writer made brief observation in the classroom and consulted with the responsible teacher about students' condition and made a schedule of research after the permission was given.

Firstly, writer gave an explanation about descriptive test and how to make a descriptive text to both of the experimental and control classes. The students of SMP Negeri 23 Semarang already studied how to write a descriptive text before this research conducted. So, what writer explains to the students was reinforcement from they learn before.

Secondly, writer conducts the writing test to the control class in the first week and experimental class on the second week. Control class was teaching without treatment or without using picture series, while experimental class was teaching using picture as special treatment.

G. Technique of Data Analysis of Research

1. Scoring the Written Test

a. Scoring the Students' Writing Skill

Excellent – Very Good = 81 – 100

Good = 68 – 80

Fair – Poor = 51 – 67

Very Poor = 34 – 50

2. Experimental Research

An experimental research involved two groups; experimental group and control group. The experimental group received a new treatment while control group received a usual treatment. According to Nunan, experiment is designed to collect data in such a way that threats to the reliability and validity of the research are ministered.⁷ This study used pre-test and post-test.

The design of the experiment could be describe as follows:

<u>E</u>	01	X	02
C	03		04

Adopted from Arikunto⁸

⁷David Nunan, *Research Method in Language Learning*, ... p.47

⁸Suharsimi Arikunto, *Prosedure Penelitian Suatu Pendekatan Praktik*, ...

Where:

- E = Experimental class
- C = Control class
- 01 = Pre-test for Experimental class
- 02 = Post-test for Control class
- 03 = Pre-test for Experimental class
- 04 = Post-test for Control class
- X = Treatment by using picture series

From the design above, subject of research were grouped into an experimental group (top line) and a control group (bottom line). The quality of subject was first checked by giving pre-test (01 and 03). Then, the treatment using picture series was applied to the experimental group, while the control group was write the descriptive text without using picture series. The result of post-test (02 and 04) were computed statistically.

a. Test of Data Normality

The first step that had to be done before doing the research was to test the data normality. It was aimed to know whether the data come from the normal distribution or not. The writer used Chi-Square formula, as follow:

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where:

χ^2 = Chi-Square

- O_i = Frequency that was obtained from data
 E_i = Frequency that was hoped
 k = Sum of interval class

If the obtained score was lower than t-table score by using 5% alpha of significance, H₀ was accepted and H_a was rejected.

b. Test of Homogeneity

It was meant to get the assumption that sample of research came from same condition or homogenous. The writer used the formula as follow:

$$F = \frac{\text{BiggestVariance}}{\text{SmallestVariance}}$$

c. Hypothesis Test

Firstly, the test was done in both group, experimental and control group. Then the test was scored by using analytic scale. The mean score of the two groups were determined. The two means were compared by applying t-test formula. T-test was used to differentiate if the result of students of writing descriptive text by using picture series and without using picture series has positive influence or not.

The formula as follow:

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

Where:

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

Where:

\bar{x}_1 = Mean score of the experimental class

\bar{x}_2 = Mean score of the control class

n_1 = The number of the experimental class

n_2 = The number of the control class

s = Standard deviation

s^2 = Variance

If the obtained score was higher than t-table score by using 5% alpha of significance, H_0 was rejected and H_a was accepted: '*There was an effectiveness of using a picture series on students' writing ability of descriptive text*'.