CHAPTER III

RESEARCH METHODOLOGY

A. Method of Research

In this study, the researcher will use quasi-experimental research because this method is relevant for this study and the researcher will use t-test to analyze data. Nunan states that "the characteristic of quasi-experimental has both pre-test and post-test as well as experimental and control groups, but no random assignment of subjects."[1]

There are three types of experiment research such as pre-experiment, quasi experiment and true experiment. The type of pre-experiment is may have pre and post treatment test, but lacks as a control group, next the type of quasi experiment is has both pre-test and post-test and experimental and control groups, but no random assignment of subject, and the type of true experiment is have both pre and post-test experimental and control groups, and random assignment of subjects.[2]

Furthermore, Frenkel and Wallen illustrates the design of experimental study as follows:

O_1X	O_2
O_3	O_4

Where:

[1] David Nunan, *Research Methods in Language Larning*(New York: Cambridge University Press, 1992), 41.

[2] James H. McMILL and Sally Schumachar, *Research in education evidencebased inquiry 6 edition.* (New York 2005), 135.

O_1 : Experiment group before giving treatment and use Sort Card media

O_3 : Control group did not receive treatment

X : Treatment (until 4 meetings) in experiment group

O_2: Experiment class after giving treatment and use Sort Card media

O_4: Control group without treatment and use Sort Card media

B. Population and Sample

1. Population

Population is formal statement about an expected relationship between two or more variables which can be tasted through an experiment. In this research, the writer took the population of all students at the population of this research is students of PONPES Al-Mubarok Kota Serang the total population is 90 students.

2. Sample

The sample of this research is seventh grade students which consists of 30 students from experiment class VII A and 30 students from control class VII B.

Furthermore, the writer used a simple random sampling because every member of population has an equal and independent opportunity of being selected. Many scholars believe that a simple random sampling method is the best way to obtain a sample representative of the population of interest. In addition, to find out the samples the writer used formula of Slovin as follow:

$$n = \frac{N}{1 + Ne^2}$$

C. Technique of Collecting Data

The researcher use technique of data collecting through only test to find out the effect of using sort card to enhance students' vocabulary. This

test was in this conducted in order to identify the effect of using sort card to Enhance students' vocabulary. There were two kinds of the test that were used in this researcher, they were pre-test and post-test. The form of test is 10 multiple choice 5 fill in the blank in the sentence and 4 describe the following pictures. One correct answer multiple choice was 1 score 5 fill in the blank was 50 score describe the following was 40 score. So, the total score in this test wear 100.

a. Test

Test is a assessment intended to measure the respondents knowledge or other abilities.

b. Pre-test

According to Creswell(2009), "pretest provide a measure on same characteristic that the researcher assesses for participant in an experiment before they receive treatment. Pretest is given before adjective words is taught.

c. Treatment

The treatment was given to the experiment class by using sort card to enhance student vocabulary and taught vocabulary without sort card media in control class.

d. Post test

Post-test is a measure on some attribute or characteristic that is assessed for participant in an experiment after a treatment. Moreover, post-test is conducted to assess the effectiveness of the independent variable.[3]

The post-test was given to know the change of students to enhance vocabulary after the treatment given in experimental class and explanation in

[3] Geoffrey Marczyk, Demateo and Festinger, *Essentials of Research Design and Methodology* (New Jersey: John & Willey, inc, 2005), 95.

control class. Post-test was given by using the same difficulties level with pre-test.

D. Technique of Data Analysis

To analysis data, the researcher uses T-test. "T-test is one of the statistical tests used to test the truth or the falsity of the null hypothesis which states that between 2 samples taken randomly from the same population, there is no significant difference".[4] "The T-test is one of the comparative analysis technique used to test the truth, whether there is a difference between two or more variables under investigation".[5] T-test is the most frequenly used measure in second language research when comparing mean scores for two groups. It supposed to know whether experimental versus control class when taking the same score or not.

The analyzed data is acquired from the test, interview, and observation. The researcher analyzes the data based on the collected score data of pre-test and post-test of experiment group is given name variable X1 and for control group is given variable X2. Then, the steps of analyzing data are as follows:

1. Calculating students' vocabulary mastery score both pre-test and post-test by using the following formula:

$$Student\ Score = \frac{Student's\ right\ answer}{Total\ Items} x\ 100$$

2. Determine mean of variable X1 with formula as follows:

$$M_1 = \frac{\sum X_1}{N_1}$$

3. Determine mean of variable X2 with formula as follows:

[4] Anas Sujiono, *PengertianStatistik Pendidikan*, (Jakarta: Raja GrafindoPersada, 2012), 278.

[5] FathorRachmanUtsman, *Pendidikan Statistika Pendidikan*, (Jogjakarta: Diva Press 2015), 153.

$$M_2 = \frac{\sum X_2}{N_2}$$

4. Counting standard deviation score variable X1 with formula as follow:

   :$X_1 = X_1 - M_1$

5. Counting standard of deviation score variable X2 with formula as follow:

   $X_2 = X_2 - M_2$

6. Testing normality of data by using Lilliefors method with formula as

   follows: $Z_= \frac{X-\bar{X}}{SD}$

7. Counting degree of freedom with formula as follows:

   df=N1 + N2-2

8. Analyze the result by using calculation of t-test as follow:

$$t = \frac{M1 - M2}{\sqrt{\frac{(\sum X1^2 + X2^2)(N_1 + N_2)}{(N1 + N2 - 2)N_1 - N_2}}}$$

Note:

M_1 = The average score of experiment class

M_2 = The verage of control class

X_1 = Sum of the squared deviation score of control class

X_2 = Sum of the squared deviation score of experiment class

N_1 = The number of experiment class

N_2 = The number of control class