# CHAPTER III METHODOLOGY OF RESEARCH

#### A. Methodology of Research

Experiment researchers are particularly concerned with the issue of external validity, and the formal experiment is specially designed to enable the researcher to extrapolate the outcomes of the researches from the sample to the broader population.

In conducting this research, the writer uses quasi experiment, it is compare the result of two groups between experimental and control class. In this chapter, the writer will explain the types of experimental and its characteristic briefly. First is pre-experiment that may have pre- and -post treatment, but lacks of control group. Second is quasi-experiment used by the writer in this research that has both pre- and post-test and experimental and control groups, but no random assignment of subjects. And the last is true experiment that also has pre- and post-test experiment with random assignment of subject.<sup>1</sup> In applying this research, the writer teaches prefixes and suffixes through index card games as experimental class, and teaches prefixes and suffixes without index card games as control class.

In conducting the research, the writer applies an experimental and control class and the classes will be taken by using cluster design as follow:

<sup>&</sup>lt;sup>1</sup> David Nunan, *Research Methods in Language Learning*, (New York: Cambridge University Press, 1992), p.41.

Control group, pre-test, post-test design

E	<b>O</b> <sub>1</sub>	Х	O <sub>2</sub>
Κ	O <sub>3</sub>		$O_4$

E : Experimental Class

K : Control Class

 $0_1 \& 0_3$  : Pre-test

X : Treatment

 $0_2 \& 0_4$  : Post-test.<sup>2</sup>

## **B.** Place and Time of Research

The data needed of this research will be taken from the students' scores from the second grades of MTs MATHLA'UL FALAH SIREMEN on Jl. Aslam No.1 Sontrol Siremen Serang-Banten in academic year of 2017/2018. The writer will conduct this research on February, 2018 until this research is finished.

The writer chooses this school because it good school and near from researcher home, so it has the strategic locations that enable the writer to conduct the research. Besides, the school is near to the residence of the writer that also enabling to reach the location.

### C. Population and sample

### **1.** Population

The populations of this study are students taken from second grade students MTs MATHLA'UL FALAH SIREMEN in

<sup>&</sup>lt;sup>2</sup>Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik (Edisi Revisi VI)*, (Jakarta: PT. Rineka Cipta, 2006), p. 87

academic years 2017/2018. The second grade consists of 3 classes and each class is generally consists of 35 students. So, the total numbers of populations are about 105 students.

## 2. Sample

The writer takes two classes as sample research by clustering from second grade (A class and B class). A class consists of 35 students as control class and B class consists of 35 students as experimental class and the total consist of 70 students. The writer chooses these classes because both of them are common classes that will make this research perfectly.

## **D.** The Technique Data Collecting

Collecting data is an important thing in this research that be determined. The technique data collecting used this research are:

1. Test

The writer takes the objective test as one of the instruments used. It was questions to measure the students' ability before and after learning. That is why, the writer takes two classes between experimental class and control class of vocabulary pre-test and posttest. The forms of vocabulary pre-test and post-test are divided into three sub materials in 30 questions. It consists of multiple choices,<sup>3</sup> matching, and completion.

a. Pre – test

The pre - test for students is carried out to get their score, the pre - test will conduct in the first meeting in order to know basic of student's vocabulary comprehension. The

<sup>&</sup>lt;sup>3</sup> Disk: Vocabulary Skills file : FE 1. B2. http://pioneer .chula.ac.th/pkanchan/pdf/vocal2.pdf

writer gives questions that consist of multiple choice, matching, and completion.

b. Post-test

Finally the student's paper sheets will submitted and the students result are treat as the data of the study. The test is similar to pre - test.

### E. The Research Instruments

Research instrument is for facilitation that used by researcher to collect the data. Researcher uses test to know the student vocabulary mastery. The instrument is a process of selecting or developing device and method appropriate to giving evaluation and getting the data.

To know that teaching prefixes and suffixes through index card games toward student's vocabulary mastery the writer gives the vocabulary test to students because with this test the writer would you like to give the score of vocabulary and comprehension on text.

A study using quantitative method usually processed by systematically manipulating its specific variable to test the prediction made by theory informing the study. In this research, the writer gives two kind of test, there are as follows:

Pre – test : The test is given both control class before giving treatment non index card as a technique and experiment class before given treatment with index card as a technique. Number of questions to be given 10 multiple choice, 10 completions, 10 matching. Post-test : The test that is given to both of control class after given the treatment non index card as technique and experiment class after given treatment with index card as a technique.

## F. The Technique of Data Analyzing

After collecting data, the writer qualifies it based on its kind. To analyze data, the writer uses two approaches. Those are logical approach for qualitative data and statistical approach for quantitative data. To compare the result of research between experimental class and control class, the writer uses step as follow:

1. Qualification of data

The data from the result of pre-test and post-test is qualified by the content specification as follow:

N 0	Form of the test	Number of each item	Difficulty level	Formul a	Explanation of formula
1.	Multiple Choice	10	2	R - W n-1	R = right answer W = wrong answer n = option answer 1 = steadiness value

Table: The specification of pre-test and post- test

2.	Completion	10	3	S = R	S = the last score R = right answer
3.	Matching	10	5	S = R	S = the last score R = right answer <sup>4</sup>
tota	l items	30 items			

- 1. Determine interval class
- 2. Make frequency of distribution for each variable.
- 3. Determine mean, median and modus by formula:

∑fx	Median = b + p . 0.5 . N	$Mo = b + p \cdot b_1$
Mean =	– F	$b_1 + b_2 + b_3 + b_4 + b_4 + b_5 $
Ν	f	b <sub>1</sub>

4. Determine deviation standard

$$SD = I \sqrt{\frac{\sum f \cdot x^2}{N} - \frac{\sum f \cdot x}{N}} 2$$

<sup>&</sup>lt;sup>4</sup> M. Ngalim Purwanto, *Prinsip-prinsip dan teknik evaluasi pengajaran*, (Bandung: PT. Remaja Rosdakarya,2000), pp. 64-67.

5. Determine error standard

$$SE_{x2} = \underbrace{SD_{x2}}_{\sqrt{N-1}}$$

- 6. Make the polygon graphic
- 7. Determine average score

$$M = M_2 - M_1$$

8. Determine how big the percentage of the score

$$\% = \frac{M}{M_2 + M_1} - x \ 100\%$$

9. Determine difference of error standard

$$SE_{Mx} - SE_{My} = \sqrt{SE_x^2 + SE_y^2}$$

10. The last is determine t<sub>o</sub> (t observation)<sup>5</sup>

$$\mathbf{t_o} = \frac{\mathbf{M}_{\mathrm{X}} - \mathbf{M}_{\mathrm{Y}}}{\mathbf{S}\mathbf{E}_{\mathrm{Mx}} - \mathbf{S}\mathbf{E}_{\mathrm{My}}}$$

<sup>&</sup>lt;sup>5</sup>Anas Sudijono, *Pengantar Statistic Pendidikan*, (Jakarta: PT. Raja Grafindo Persada, Ed.1. 2008), p.346-348.