

## CHAPTER III

### METHODOLOGY OF THE RESEARCH

#### A. The Method of Research

The method of research in this study is experimental research. Experimental research is a procedure for testing a hypothesis by setting up the situation in which the strength of the relationship between variables can be tested. There are three kinds of experimental method namely pre experiment, true experiment, and quasi experiment. Pre experiment is may have pre and post treatment test, but lack a control group. True experiment has both pre and post-test and experimental and control group, and random the assignment of subjects. and quasi experimental has both pre and post-test and experimental and control group, out no random assignment of subjects.<sup>1</sup>

In this research, the writer used experimental. Daniel Mujis explain that experimental designs are sometimes known as ‘the scientific method’ due to their popularity in scientific research where they originated.<sup>2</sup>

Finally, the writer gives certain treatment to the students to find assessment of how is the effect of using Reciprocal

---

<sup>1</sup> David Nunan, *Research Method in Language Learning*, (Cambridge University Press: 1992), p. 41.

<sup>2</sup> Daniel Mujis, *Doing quantitative research in education with SPSS*, (Sage: 2010), p. 13.

Technique in teaching reading comprehension on report text with quasi experimental design. In quasi experiment will divide into two classes, there are experimental class and control class. The samples is conducted do not have randomly and the result is decided from the pre-test and post-test of experimental and control class.

#### **B. Place and Time of the research**

This research was conducted at the eleventh grade students of MAN 1 Kota Cilegon. It is located at Jl. Ir. Sutami, km. 2,5 Lebak Denok, Kec. Citangkil, Kab. Cilegon-Banten. This selected as the research setting because of two major reasons: firstly, its location is near for researcher to conduct the research, secondly, the researcher had practiced teaching there, so she feels unfamiliar with MAN 1 Kota Cilegon. And the researcher knows at the eleventh grade students of MAN 1 Cilegon have some problems that happen with students in English skills especially in reading comprehension. For the time, the writer did research on 25<sup>th</sup> April 2018 until 09<sup>th</sup> May 2018.

### **C. Population and Sample**

#### 1. Population

A population is defined as all members of any well-defined class of people, events or objects.<sup>3</sup> The writer took respondents from students of the eleventh grade students of MAN 1 Kota Cilegon in 2017/2018 as a population which consist of 246 students.

#### 2. Sample

A sample is a portion of a population.<sup>4</sup> The writer took the samples is 60 students. The sample from XI IPS 2 as experiment class that consist of 30 students and XI IPA 2 as control class that consist of 30 students.

### **D. The Research Instrument**

Research instrument is facilitating that use by the researcher for collecting data. The researcher used test questions items, this test is designed for students' pre-test and post-test activities. Pre-test was given before the treatment applied. So, the researcher knows whether there are differences before and after treatment or not.

---

<sup>3</sup> Donald Ary, et. al, *Introduction to Research in Education*, (Wadsworth, 2010), p. 148.

<sup>4</sup> Donald Ary, et. al, *Introduction to Research in Education*, (Wadsworth, 2010, p.148.

## **E. The Technique of Data Collection**

The writer uses several techniques of collecting data. In this research, the writer does:

### **a. Test**

In collecting the data, the researcher used reading comprehension test in the form of multiple choice and essay. The researcher used report text for reading comprehension test. The purpose of this test is to know the result in teaching by using Reciprocal Teaching Technique.

In this research, the researcher was given twice of test. They are pre-test and post-test. The researcher gave the same test for students because the researcher is known the progress of students' reading comprehension score before and after treatment.

#### **1. Pre-test**

The pre-test conducted one only to experiment and control class, it conduct in the first meeting in order to know basic of students reading comprehension before the treatment. The test consists of 25 questions, 20 items in multiple choice and 5 items in essay.

#### **2. Post-test**

After the treatment completed, both experiment and control class was given a post-test. Post-test was concluded to see effectiveness of the treatment based on

the score. The post-test consists of 25 questions, 20 items in multiple choice and 5 items in essay.

- b. Qualification of data: multiple choice and essay.
1. Pre-test consists of multiple choice and essay. Multiple choice consists of 25 questions. The correct answer for multiple choice is given score 1 (one), and incorrect answer is given 0 (zero). The correct answer for essay is given score 2 (two) and incorrect answer is given 1 (one). So, the total items are 25 questions.
  2. Post-test consists of multiple choice and essay. Multiple choice consists of 25 questions. The correct answer for multiple choice is given score 1 (one), and incorrect answer is given 0 (zero). The correct answer for essay is given score 2 (two) and incorrect answer is given 1 (one). So, the total items are 25 questions.

**Table 3.1**

**Form of Pre-Test and Post-Test**

Series number of items	Form of Test	Total of Items	Score of correct answer
1-20	Multiple choice	20	20
21-25	Essay	5	10
Jumlah			30

Students' final score =  $\frac{\text{students raw score}}{\text{Ideal maximum (30)}} \times 100$

Ideal maximum (30)

#### F. The Technique of Data Analyzing

In this research, the writer used formula to find out how the students can improve their reading comprehension of report text. To analyze data, the writer used statistical approach quantitative data. The steps are:

- a. Determining mean of variable X1 with formula:

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

- b. Determining mean of variable X2 with formula:

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

- c. Determining derivation score variable X1 with formula:

$$X_1 = X_1 - M_1$$

- d. Determining derivation score variable X2 with formula:

$$X_2 = X_2 - M_2$$

After getting the data from pre-test and post-test, the writer analyse it by using statistic calculation of t-test formula with the degree of significance 5 % and 1 % the formula as follow:

$$t_o = \frac{M_1 - M_2}{\sqrt{\frac{\{\sum x_1^2 + \sum x_2^2\} \{N_1 + N_2\}}{\{N_1 + N_2 - 2\} \{N_1 \cdot N_2\}}}}$$

Note :

$M_1$  = The average score of experiment class (Mean  $X_1$ )

$M_2$  = The average score of control class (Mean  $X_2$ )

$\sum X_1^2$  = Sum of square deviation of experimental class

$\sum X_2^2$  = Sum of square deviation of control class

$N_1$  = Number of students of experimental class

$N_2$  = Number of students of control class

2 = Constant number

df = Degree of freedom

df =  $N_1 + N_2 - 2$

- e. Doing interpretation and calculation by comparing the result of calculation t-test and t-table.