

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter discuss about research design, population and sample, research instrument, variable of the research, trying out instrument, technique of collecting data and technique of data analysis.

#### **3.1 Research Design**

Research method may be understood all those methods/techniques that used for conducted research. Research methodology is a way to systematically solve the research problem. In this study, the writer used the experimental research. In this experiment, the writer intended to investigate the use of Reciprocal Teaching Technique (RTT) as a method to improve the students' reading comprehension of narrative text. Experimental research is a research method that used to find a specific treatment against the other in uncontrolled conditions (Mubarok, 2015:88).

There were four kinds of experimental design such as pre-experimental, true-experimental, factorial design and quasi-experimental (Sugiyono, 2016). In this study, the writer used quasi-experimental design that used nonequivalent control group design. In this study, there were two classes those are experimental group and control group which is chosen not randomly.

Sugiyono (2016:116), the design of the quasi experimental research can be presented below:

**Table 3.1**

Design of quasi experimental research

$O_1$	$X$	$O_2$
$O_3$		$O_4$

Where:

$X$  : Treatment

$O_1$  : Pre-test (experimental class)

$O_2$  : Post-test (experimental class)

$O_3$  : Pre-test (control class)

$O_4$  : Post-test (control class)

### 3.2 Population and Sample of the Research

#### a. Population

Arikunto (2006:30) states that, population is a set (or collection) of all elements processing one or more attributes of interest. In other hand, (Mubarok, 2015:38) states that, population is a unit of object or subject that has certain qualities and characteristics which are studied by the researchers then be deduced.

In this research the target of population is the tenth grades students of MA Wahid Hasyim Bangsri in the academic year of 2018/2019. The

classes were from X Social 1 to X social 3 classes. The total of the population were 82 students.

**b. Sample**

Many definitions of sampling, Arikunto (2006:131) states that sample is part of population that has same characteristics with the population itself. In other hand, Mubarok (2015:32) states that sample is part of the quality and characteristics of the population. Sample taken must be truly representative because the conclusions drawn from these samples generalized to the population.

In this research the researcher used simple random sampling technique which the sample was selected randomly. The samples came from the population. They were 54 students coming from two classes consisting of 26 students of X social 2 class as the experimental group and 28 students of X social 1 class as the control group. There are some steps that the researcher done in choosing the sampling, the step as follows:

1. The researcher observed the tenth grade. The purpose was to know the characteristics of the students each class.
2. After observing, the researcher made a lottery. It made from a piece of paper. Each paper contained the name of classes. There were X social 1 class to X social 2 class.

3. Then, the lottery was put into the bottle, and researcher shook the bottle twice, in order to determine the experimental group and control group.
4. After getting the number of lotteries, the researcher conducted the research.

### **3.3 Research Instrument**

One of the most important activities in the research is how to process the data. An instrument used to measure the variable of the study. In this research, the writer used test as instrument. Test is one of the method used for measurement that is to collect the characteristics' information of an object (Widoyoko, 2016:117). Mubarok (2015:68) states that test is a method of measuring a person's ability, knowledge, or performance in a given domain. Test in language education can be divided into two categories, namely written test and spoken test.

The research instruments that used by the writer to collect the data in this research was written test. The form of the test was multiple choice test which consist of 50 questions items. The test divided into two parts; pre-test and post-test, in order to see how far the students understand well about reading comprehension of narrative text through reciprocal technique. The test would be given in the beginning and in the end of the treatments. The instruments of the test were available on the appendix.

### 3.4 Variable of the Research

Variable is a quality which can take a number of different values or states. There were two kinds of variables, they were independent variable and dependent variable. Independent variable is a variable that are easily obtained and can be diversified into free variable, while dependent variable is the effect of independent variable (Sugiyono, 2016:61).

In this research, there were two variables. They were independent variable and dependent variable. Independent variable in this research was reciprocal teaching technique in teaching reading comprehension while the second variable called dependent variable was the students' reading comprehension of narrative text.

### 3.5 Trying Out Instrument

The instrument used in this research was a test (pre-test and post test). The try out instrument was applied to know the validity and reliability of the test items. To measure the validity and reliability, the researcher gave a test to the students by multiple choice items and the total researcher would be given a test to the students by multiple choice items and the total question is 50 questions.

#### a. Validity

Arikunto (2006:110), states that test validity is test can measured. It meant that the researcher have to conduct the validity of test before she gave the test to the samples or the students. An instrument is valid when

it has high validity while an instrument is invalid when it has low validity.

The instrument calculated by using the formula as follows:

$$r_{xy} = \frac{(N \cdot \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \cdot \sum Y^2 - (\sum Y)^2\}}}$$

In which:

$r_{xy}$  : the item of test reliability

N : the number of respondent

X : total score or each item

Y : individual total score

$X^2$  : total for the square for each item

$Y^2$  : total of the square of individual total score

$(X)^2$  : the square of the total score for each item

$(Y)^2$  : the square of the individual total score

The validity computation is consulted to the *r-table of product moment* by determining the significances level 5% and n which is according to the data. The instrument is valid if the  $r_{xy} > r$ -table for a 5% and N=22.

#### b. Reliability

Reliability is a component in making an instrument that can be trusted as a tool for collecting the data (Arikunto, 2010:221). The formula to calculate the reliability of the instrument as follows:

$$r_{11} = \frac{2 \cdot r_{1/21/2}}{1 + r_{1/21/2}}$$

In which:

$r_{1/21/2}$  = correlation between two half instruments

$r_{11}$  = reliability instrument

### 3.6 Technique of Collecting the Data

The researcher only used test as the instrument to gain the data from the subjects of the research through multiple choice question. There were two kinds of test that used; pre-test and post-test.

#### a. Pre-test

Pre-test was given to the students before giving the treatment by the researcher in order to know students' ability or skill. In this test, the students in both groups were given same test. The purpose of pre-test is to find out the ability of the students on the beginning of the lesson. In the pre-test, the researcher used t-test.

#### 1. T-test

T test is used as a hypothesis testing tool, which allows testing of an assumption applicable to a population. A t-test looks at the t-statistic, the t-distribution values and the degrees of freedom to determine the probability of difference between two sets of data.(Arikunto, 2006:45)

#### b. Treatment

After conducting pre-test for experimental and control group, some treatments was given to know significances and effectiveness of students' competence in reading comprehension. In this case, the experimental group was given treatment by using reciprocal teaching technique in order

to prove that reciprocal teaching technique is effective for teaching reading comprehension of narrative text at the tenth grades of MA Wahid Hasyim Bangsri. Meanwhile, the control group taught by the other method namely discussion method. In practically, the researcher explained about the topic and reciprocal teaching technique in teaching reading comprehension of narrative text in the first meeting. After that, the researcher gave treatment by narrative text with certain topic in the second treatment and then the writer gave treatment by narrative text with the different title and topic in the last meeting of treatment. The treatment designs for two meetings to the experimental group and control group.

**Table 3.2**

The Schedule of Implementing the Research

No.	Date	Time	Activity
1.	January, 16 <sup>th</sup> 2019	07.45 – 09.15 A.M	First meeting in control group.
2.	January, 24 <sup>th</sup> 2019	07.00 – 08.30 A.M	First meeting in experimental group.
3.	January, 29 <sup>th</sup> 2019	07.00 – 08.30 A.M	Second meeting in control group
4.	January, 26 <sup>th</sup> 2019	09.30 – 11.00 A.M	Second meeting in experimental group

**Table 3.3**

The activity of experimental group and control group

Meeting	Experimental Group	Control Group
<p><b>Meeting 1</b></p>	<ul style="list-style-type: none"> <li>- The researcher engaged students relate to the material of narrative text</li> <li>- The researcher gave the text (narrative text) about legend.</li> </ul> <p style="text-align: center;"><b>In Reciprocal Teaching Technique there are some steps:</b></p> <ul style="list-style-type: none"> <li>- The researcher divided the students into some group.</li> </ul> <p style="text-align: center;"><b><i>(Predicting Section)</i></b></p> <ul style="list-style-type: none"> <li>- The researcher asked the students about the aspects such as the title of the text, introduction and headings.</li> </ul> <p style="text-align: center;"><b><i>(Questioning Section)</i></b></p> <ul style="list-style-type: none"> <li>- The researcher asked the student to read silently the text in order to know the</li> </ul>	<ul style="list-style-type: none"> <li>- The researcher engaged students relate to the material of narrative text</li> <li>- The researcher explained the material (narrative text)</li> <li>- The researcher gave task about the material to the students</li> <li>- The students did the task.</li> </ul>

	<p>main idea of the paragraph and then the students formulate unclear section.</p> <ul style="list-style-type: none"> <li>- The researcher gave a task and asked the students to do the task.</li> <li>- The researcher reviewed the material.</li> <li>- The writer asked the students to collect their task.</li> </ul>	
<p><b>Meeting 2</b></p>	<p><i>(Clarifying Section)</i></p> <ul style="list-style-type: none"> <li>- The researcher asked the students to explain their answer of the task.</li> <li>- If any section that the students did not understand, the researcher and the other students explained more clearly until they understand about it.</li> </ul>	<ul style="list-style-type: none"> <li>- The researcher reviewed the material (narrative text)</li> <li>- The researcher asked their task.</li> <li>- The researcher choosed students to answer the question.</li> <li>- The researcher and</li> </ul>

	<p><i>(Summarizing Section)</i></p> <ul style="list-style-type: none"> <li>- The researcher asked the students to find out the important information, such as main idea in the text that they read and also asked the students to make summarize about the text.</li> <li>- The researcher did correction with the students.</li> </ul>	<p>other students gave feedback about their statement.</p> <ul style="list-style-type: none"> <li>- The researcher asked some question to know their understanding about the material.</li> </ul>
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### c. Post-test

Post-test was given after conducting pre-test and treatment for control class and experimental class. The purpose of post-test was to know the abilities achieved after the end of the lesson. The results of the post-test compared with the results of the post-test that carried out so it would be known how far the effect or influence of the learning. . In the post-test, the researcher used t-test.

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the t-distribution values and the degrees of freedom to determine the probability of difference between two sets of data.(Arikunto, 2006:45)

### 3.7 Technique of Data Analysis

Data analysis is an activity in reflecting the data of the research. Analyzing the data is a long process of experimental research. The researcher used score analysis of pre-test and post-test in analyzing data of the research. For analyzing the data, the researcher uses SPSS 20 for calculate the result of students' pre-test and post-test. The researcher used t-test. There are the formula of t-test:

The formula of t-test as follow:

$$t_0 = \frac{\bar{x}_1 - \bar{x}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

(Sa'idah, 2017: 172)

Where :

$\bar{x}_1$  = mean of variable X (Experimental Class)

$\bar{x}_2$  = mean of variable Y (Control Class)

S = Standard Deviation

n 1 = total of variable X (Experimental Class)

n 2 = total of variable Y (control class)