CHAPTER III

RESEARCH METHOD

This chapter presents seven topics dealing with the research method. Those are research design, population, sample and sampling, research instrument, validity and reliability testing, normality testing, data collection method, and data analysis.

A. Research Design

Research design is the plan to do something and research design contains the formula about the systematic steps of research. For this research, the researcher used quantitative research design to observe and measure the hypothesis. Harwell explain that:

> "Quantitative research methods attempt to maximize objectivity, replicability, and generalizibility of findings, and are typically interested in prediction. Integral to this approach is the expectation that a researcher will set aside his or her experiences, perceptions, and biases to ensure objectivity in the conduct of the study and the conclusions that are drawn. Key features of many quantitative studies are the use of instruments such as tests or surveys to collect data, and reliance on probability theory to test statistical hypotheses that correspond to research questions of interest".

Researcher used pre-experimental research because it provides little or no control of extraneous variables. The researcher used the one-group pretest–posttest design, because the researcher used one group and used pre-test and post-test (see table 3.1). Ary et al (2006: 327) states that "The one-group pretest-posttest design usually involves three steps: (1) administering a pretest measuring

the dependent variable; (2) applying the experimental treatment X to the subjects; and (3) administering a posttest, again measuring the dependent variable."

Table 3.1
Diagram of One-Group Pretest-Posttest Design

Pretest	**Independent**	**Posttest**
Y_1	X	Y_2

In this study, the procedures of pre-experimental research used One-Group Pretest-Posttest design are:

1. Administering a pretest measuring reading comprehension of X IIK at MAN 2 Tulungagung
2. Applying the experimental treatment teaching reading by using reciprocal teaching to the subjects (X IIK class at MAN 2 Tulungagung)
3. Administering a posttest measuring reading comprehension of X IIK at MAN 2 Tulungagung

The score of pretest and posttest will be different. The conclusion of research would be determined by comparing these score. In this study, the researcher wants to know the effectiveness of using reciprocal teaching in students' reading comprehension. The effectiveness will be known by the researcher after knowing

significant differences achievement between students before and after being taught by using reciprocal teaching

B. Population, Sample and Sampling

1. Population

Sukmadinata (2013:250) states that "Population is a big group and region which become a range of research". In this study the population was the tenth grade students of MAN 2 Tulungagung in the academic year 2015/2016. The total numbers of the tenth grade student of MAN 2 Tulungagung in the academic year 2015/2016 are 465 students.

2. Sample

Sample is a part of population which studied to gain information about the whole. In this study the sample was the tenth grade students of IIK class at MAN 2 Tulungagung. This class has 39 students and researcher just conducted in this class. (See appendix 2)

3. Sampling

Sampling technique is a process of selecting number of individuals use for conducting the research. In this study, the researcher used purposive sampling to select the target of observation because the teacher considered that in tenth grade of religion class has average ability in English than other class, so researcher curious to applied reciprocal teaching in class with average ability in English.

C. Research Instrument

Instrument is a tool to take information or data of subject who selected by researcher. In this study the instrument was test (pre-test and post-test). The test

was multiple choices consist of 30 items. Pre test and post-test consist of 30 items about narrative text. Pre-test and post-test have different title of text but have same quality of questions which have reliability and validity tested from tryout of the instrument in 15 students except of sample research. The test was conducted by two sections, they are; pre-test and post-test. Pre-test was given before doing some treatments and post-test was given after doing some treatments.

D. Validity and Reliability Testing

1. Validity

The instrument will be valid if instrument used by researcher can be used to measure what will be measured, according to Gay in Sukardi (2003) The validity of the test has four types, there are: Content validity, Criterion-related validity, Construct validity and Face validity.

In this study, researcher uses content validity and constructs validity:

a. Content validity

Content validity is containing of contents and format of instrument. What is being tested is related with curriculum and the material which used by researcher when do the treatment. In this test, researcher used narrative text. So, before doing the treatment, researcher made this test based on the syllabus of tenth grade of MAN 2 Tulungagung on 2nd semester. (See appendix 3, 4 and 5)

b. Construct validity

Reading is a multiple complex activity to get much knowledge to improve prior knowledge of someone. The construct validity is measurement of the test or any instrument that will be used to conduct the research. In this study, researcher

used multiple choices to measure the students' reading comprehension. From doing the multiple choices, researcher can measure the students' reading comprehension. According to Hughes and Heaton in Allison (1999:126) designing multiple choices is not easy, and the authenticity the task is questionable. But the employing multiple choice in class setting to help teacher and learner to understood the certain features of texts.

2. Reliability

Tavakol & Dennick (2011:53) states that "Reliability is concerned with the ability of an instrument to measure consistently". Researcher conducted the tryout of the instrument on 15 students which not the target of sample but they are tenth grade. The result of tryout was calculated by researcher used Kuder and Richardson formula. The value shows the reliability of the instrument are 0.9 in pre-test and 0.8 in post-test. (See appendix 6)

The researcher use Alpha Cronbach formulation to decide the reliability of the instrument. According to Riduwan in Defiana (2012), The criteria of reliability instrument can be divided into 5 classes as follows:

1. If the *alpha cronbach* score 0.00-0.20: less reliable
2. If the *alpha cronbach* score 0.211-0.40: rather rliable
3. If the *alpha cronbach* score 0.41-0.60: enough reliable
4. If the *alpha cronbach* score 0.61-0.80: reliable
5. If the *alpha cronbach* score 0.81-1.00: very reliable

Because the value of the instrument is near from 1,00. So, the pre-test and post-test is very reliable.

E. Normality Testing

Normality testing is testing to measure the result of the instrument which have the normal distribution in order to uses for parametric statistics. Normality testing was done by researcher after getting the result of pre-test and post-test. To know the normality, researcher used the Kolmogorov-Smirnov formula by using SPSS 16.0 version (see table 3.2). The determination of testing is if the probability or *Asymph. Sig. (2-tailed)* higher than *level of significant or 0.05* so the test distribution is normal.

Table 3.2
Normality Testing of Pre-test and Post-test

One-Sample Kolmogorov-Smirnov Test

		Pretest	Posttest
N		15	15
Normal Parameters[a]	Mean	68.27	69.60
	Std. Deviation	15.327	18.153
Most Extreme Differences	Absolute	.122	.129
	Positive	.122	.102
	Negative	-.078	-.129
Kolmogorov-Smirnov Z		.471	.500
Asymp. Sig. (2-tailed)		.979	.964

a. Test distribution is Normal.

Based on table 3.2 the output of *One-Sample Kolmogorov-Smirnov Test*, it can be seen that asymp. Sig. (2-tailed) of pre-test is (0.979) and the post-test is (0.964) it means that the score of Asymp. Sig. (2-tailed) of pre-test and post-test is

higher than 0.05, it concluded that the instrument (pre-test and post-test) is normal and T-test can be used to calculate the data of research because t test include of parametric testing used for quantitative research.

F. Data Collecting Method

1. Testing

Ary et al in Sukardi (2003) states that "A test is a set of stimuli presented to individual in order to elicit responses the basis of which a numerical score can be assigned". In this research, the researcher used the test of instrument in research. The test is multiple choices consist of 30 items about narrative text. The data were collected in two stages; pre-test and post-test.

a. Pre-test

The purpose of giving pre-test is to know how far the students can understand about reading texts before being taught by using the reciprocal teaching. So that, administering pre-test before student was given treatment by researcher. The pre-test is multiple choices containing of 30 items about narrative text. The researcher conducted pre-test on February, 3rd 2016 that was joined by 39 students. (See appendix 7)

b. Post-test

The purpose of giving post-test is to know the result of student's reading comprehension after giving the treatment. The result decided the effectiveness of the reciprocal teaching on students' reading comprehension. The post-test was given by researcher after students done the treatment. The post-test was multiple

choices consist of 30 items about narrative text. Post-test was given by researcher on March, 2nd 2016 that was joined by 39 students. (See appendix 9)

G. Data Analysis

(Tavakoli,2012:145) states that "Data analysis is the process of reducing accumulated data collected in research to a manageable size, developing summaries, looking for patterns, and performing statistical analysis". The data which have been analyzed were quantitative data. Quantitative was done by researcher using statistic to process the data. This activity used by researcher to find difference on the students' reading comprehension after and before being taught by using reciprocal teaching. The researcher used Paired Sample T-test by using SPSS 16.0 version.