

CHAPTER III

RESEARCH METHOD

A. Research Design

This study used quantitative method to find out the effectiveness of reading comprehension using reciprocal questioning (ReQuest) technique. It was done by taking experiment in the area of the study to see the effectiveness of the experiment.

The function of the experimental design according to Gribbons and Herman is “experimental designs are especially useful in addressing evaluation question about the effectiveness and impact of program.”¹

The researcher took two classes in this study. They were taken as control group and experimental group. The control group was taught by Herringbone technique as usual technique, According to Imelyati, Herringbone technique is a technique that used to find main idea and important information in the text by asking comprehension questions.² while the experimental was taught by reciprocal questioning technique in teaching reading descriptive text. The research design of pretest and post test control and experimental group could be illustrated as follows:

¹ Barry, Gribbons & Joan, Herman. *True and quasi-experimental designs. Practical Assessment, Research & Evaluation*, 1997 5(14). (accessed on November 2nd 2013) from <http://PAREonline.net/getvn.asp?v=5&n=14>

² Imelyati, *Teaching Reading by Using Herringbone Technique that Combined with Buzz Group Technique at Senior High school*, (Sumatra Barat: IKIP PGRI)

Table 3.1

Research Design

Group	Pretest	Treatment	Posttest
A	O ₁	X	P ₁
B	O ₂	-	P ₂

Explanation:

A : Experimental group

B : Control group

O₁ : pretest given in experimental group

O₂ : pretest given in control group

X : the treatment where the technique is implemented in experimental group.

P₁ : post test given treatments in experimental group

P₂ : post test given treatments in controlled group

Based on the diagram above, there were two classes (groups) which were divided into experimental group (A) and control group (B). Both of them did pre test (O₁ and O₂). The pretest was given in order to get to know students' prior knowledge before the treatment. Next, the treatment

(X) would be applied to the experimental group and posttest (P1 and P2) was given to both groups. Post test was applied in order to know students' achievement of the two groups. The score of both groups were compared to see the improvement.

B. Variable of the Research

According to Kerlingert, variable is a construct of characteristic which will be learned by the researcher.³ He further stated that, by definition for a variable to have only one value, it is then called a constant. We deal almost exclusively with variables that have two or more values.⁴ There were two variables in this research:

1. Independent variable is a program or cause that is manipulated by the researcher. It is the reciprocal questioning (ReQuest) technique.
2. Dependent variable is the effect that is affected by independent variable. It is the improvement of the students' skills in reading descriptive text.

C. Hypothesis

This research has two hypothesis, they are:

1. H_a : there is significant improvement of students' reading ability when ReQuest technique is applied in teaching reading descriptive text to the tenth grade students of SMA Islam Jepara.

³ As cited in Suharsimin Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, (Jakarta: PT Rineka Cipta 2006), 116

⁴ Suharsimin Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik...*, 120

2. H_0 :there is no significant improvement of students' reading ability when ReQuest technique is applied in teaching reading descriptive text to the tenth grade students of SMA Islam Jepara.

D. Population and Sample

Population and sample are important elements in a research. According to Arikunto "population is the total member of research respondents, while sample is a part or representation of population that is researched."⁵

In this case, the population was the students in SMA Islam Jepara academic year 2013/2014 and the sample was the students of tenth grade. The researcher took tenth grade students because the students learn about reading descriptive in the tenth grade and it is one of material in KTSP curriculum that used by the teacher in SMA Islam Jepara academic year 2013/2014. Besides, based on the result of preliminary study the researcher found that the tenth grade students have any problems in reading descriptive text, such as in reading comprehension and understanding of the text. Tenth grade consist of two classes and the number of the students was 60 students. Class X.1 consists of 30 students,

⁵ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, (Jakarta: PT Rineka Cipta,2006), 130-131

while class X.2 consists of 30 students. The classes were divided into two groups, experimental group and control group.

E. Research Procedure

The research consists of five procedures. Those were preliminary study, permission (Headmaster and English teacher), pre-test, treatments and post test. Below would be explained the steps of the research:

1. Preliminary study

Preliminary study was done before the researcher did the research in order to observe the school and to know the students' reading ability.

2. Permission

The researcher asked permission to the headmaster and English teacher in SMA Islam Jepara to prepare before research process. Permission from the headmaster was needed because the researcher wanted to get information about the teacher's class and the students as participants. To get further information, the researcher went to administration department of school.

The researcher also asked permission to the English teacher, because the researcher wanted to use her class for research and asked description the classroom condition. Then, the researcher explained implementation ReQuest technique, materials, and tests would be used in treatment to the English teacher.

3. Pre-test

Pre-test was done both of experimental group and control group. It was given before the researcher implemented ReQuest technique. It used to know the students' capability before getting treatments. The form of the test was multiple-choice item. The questions were based on the indicators in learning reading in term descriptive text such as: deciding main idea based on the text, finding factual information, the identification, the description and linguistic competence to develop students' vocabulary.

4. Treatments

The member of experimental group was the students of X.1. The treatments in experimental group were done in two meetings. The procedures of treatments are as follows:

a. First treatment

As a warm up, the researcher showed a picture of "Borobudur Temple". The researcher asked students try to predict what the picture would be about. Then, the researcher explained schematic structure descriptive text. After that, the researcher asked the students to make 9 groups.

As a practice, the researcher divided the chunk of each paragraph and students read it. Then, the students were asked to prepare in groups questions they thought would be answered in the

text. After that, the students were asked to read the text with the purpose of answering their questions that they made and then discussed it. As a reflection, the researcher gave the questions about the verb tenses and words used in the text.

b. The second treatment

The students were taught by ReQuest technique with the topic “Singapore”. The activities in second treatment were almost same with first treatment. The difference was on the topic in each treatment.

5. Post-test

Post-test was done to both experimental group and control group. The post-test was conducted to describe the result of the students’ ability in reading after they got treatment using ReQuest technique.

F. Data Collection Techniques

Based on the problem of the study, the techniques were conducted to collect data on using ReQuest technique as teaching reading descriptive text were:

1. Test

The researcher used tests as the instrument to measure the students’ achievement. Whether there was any improvement score of the students’ achievement after using reciprocal questioning technique.

Cohen believes that “the construction and administration of tests is an essential part of the experimental model of research, where pretest and posttest have to be devised for controlled group and experimental group.”⁶ The researcher used pretest and posttest to know the improvement of the students’ achievement.

Pretest was done both to the experimental and the control group. The control group’s test was the same with the experimental group’s test. It was needed to know the students’ reading ability before using reciprocal questioning technique.

Posttest was the last step of the research process to know the effect of reciprocal questioning for the students’ reading ability. The experimental group has been given the technique before doing the posttest. The control group also was given the posttest without being given the technique before.

2. Documentation

The researcher collected the data from the students’ documents. The documents were needed to find out information about the students’ reading score and students’ worksheet. It was used to support the data about students’ reading score improvement after using reciprocal questioning technique.

⁶ Louis Cohen, “*Research Method in Education*” (London and New York: Routledge, 2007), 432

G. Research Instruments

The researcher arranged and made the instruments for her research that were used to collect the data. The instruments were:

1. Instruments for test

Cohen states that “the construction and administration of tests is an essential part of the experimental model of research, where pretest and posttest have to be devised for controlled group and experimental group.”⁷

In addition Heaton explains:

In constructing the test the researcher considered some feature that the level difficulty must be the same in both tests. Also, the researcher considered the relationship between the test items and the course of objective. In administering the pretest and posttest, the researcher needed “question sheet” as the instrument. The questions were prepared in the form of multiple-choice since the multiple-choice is the most common type of objective common items used to test awareness of the features of the language.⁸

2. Document study

Documentation is used to collect the data, which is in the written form.⁹ The document study guidance was used to guide the researcher took the documents that needed in this research. Such as:

⁷ Louis Cohen, “*Research Method in Education*” (London and New York: Routledge, 2007), 432

⁸ Heaton, J.B, *writng English language tests* (New York: Longman, 1988), 34

⁹ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, (Jakarta: PT Rineka Cipta,2006), 158

the data of the students' reading score from the test and the students' worksheet.

H. Data Analysis Technique

There were two kinds of data that must be analyzed in this research. First, the data concerning the data from result of the test and the result of the documentation. Those were described as follows:

1. Data from the test

To find out the effectiveness of using reciprocal questioning to the students' reading score, the researcher used a way to calculate it was by way of reduced T_2-T_1 .

There were some steps used in this research in calculating the score of the students were analyzed statistically by using a procedure of t-test.

- a. The first step was the researcher put the scores of the pre test and post test of experimental and control groups.
- b. Then, the researcher calculated the mean from overall scores of pre test and post test of both groups. The calculation of the mean used the following formula:

$$MEAN: \sum \frac{fx}{N}$$

Where :

M = mean

$\sum fx$ = total of the test

N = total of the students

- c. Next, after collecting the data of pre test and post test overall score from both of groups, then the researcher calculated of the mean of difference score between the pre test and post test of each group through the formula below:

$$Md = \frac{\sum d}{N}$$

Where:

Md = mean of the different score pre test and post test each groups

$\sum d$ = the total of different score.

N = total of students taking the test.

- d. Before calculating the t-value, the researcher used the following formula to find the sum deviation square of each group

$$S^2 = \sum X^2 - \frac{(\sum X)^2}{N_x}$$

$$S^2 = \sum Y^2 - \frac{(\sum Y)^2}{N_y}$$

Where:

X = deviation of posttest and pretest score of each subject in experimental group

Y = deviation of posttest and pretest score of each subject in control group

- e. After collecting the data of pre test and post test from both groups, the researcher analyzed the data through t- test to find out whether the difference of the scores between them was significant or not. Through the following formula:

$$t = \frac{(\bar{X} - \bar{Y})}{\sqrt{\left(\frac{\sum X^2 + \sum Y^2}{(N_x - 1) + (N_y - 1)} \right) \times \left(\frac{1}{N_x} + \frac{1}{N_y} \right)}}$$

Where:

\bar{X} = mean score of experimental group

\bar{Y} = mean score of control group

$\sum X^2$ = the sum deviation square of experimental group

$\sum Y^2$ = the sum deviation square of control group

N_x = number of students experimental group

N_y = number of students control group

- f. After calculating all of the scores, the researcher calculated the number of degree of freedom by adding the individual of each group, then subtract of two. The formula as follows:

$$df = (N_1 + N_2) - 2$$

Where:

df = degree of freedom

N_1 = number of subject in experimental class

N_2 = number of subject in control class

Standard of significant = 0,05

2. Data from the documentation

The data from documentation collected from the students' score were shown on the table. The development of the students' reading ability was shown through their score that are improving after implementation of reciprocal questioning technique.

The researcher then concluded and took note the result from the test and documentation to answer the research questions that were mentioned in the chapter one.