

CHAPTER III

METHOD OF THE RESEARCH

In this chapter, the writer would present the method of the research, which was important as a guideline to attain the objectivity of the research. It provided with research design, population and sample, instrument of the research, method of data collection, method of data analysis and statistical hypothesis.

1.1 Research Design

Research is the way to solve the problem scientifically, systematically, and logically. This research is an experimental research with a control group. The writer uses two different groups where one group as an experimental group while another one as the control group. The purpose of experimental research is to examine the cause and the result after the treatment will be done towards the experimental group and the control group, compare the result between those two groups (Ali, 1984:132).

Due to the problem statement in the first chapter, this research will consist of two variables, they are :

1. Independent variable (X) is the conditions influencing the appearance of an indication or called treatment variable (Ali, 1984: 131). In this research the independent variables will use of Cooperative Integrated Reading and Composition (CIRC) and Three Phase Technique.
2. Dependent variable (Y) is an indication appearing because of the implementation of an experiment and also called effect variable (Ali, 1984: 131). In this research, the dependent variable is the reading comprehension on

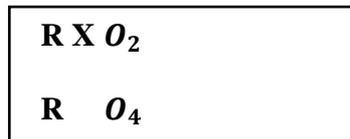
Hortatory Exposition text of the eleventh grade students of MA Darul Hikmah Menganti Kedung Jeparo academic year 2017/2018.

In this research, the writer uses experimental group and control group without using pre-test. It is only uses post test of experimental group and control group to find out the difference between those groups. There are several steps that will use in experimental research without pre-test by using control group. They are :

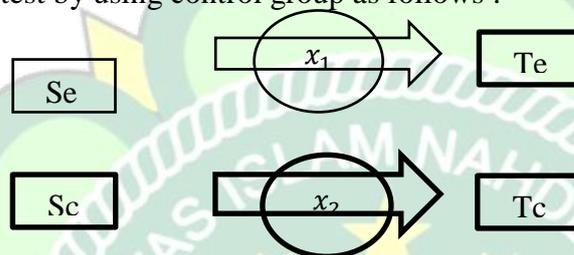
1. The writer choose the sample from the subject, as experiment and control group.
2. The writer applies treatment to the experimental group and control group.
3. The writer conducts the post-test in both.

The writer has a reason. It is to compare between Three Phase Technique and CIRC Technique. Because both of them has similar advantages or purposes. The advantages of Three Phase Technique is making students active, comfortable to learn materials and more interesting in learning process. While Cooperative Integrated Reading and Composition (CIRC) technique also has a advantages to make the students active, cooperate and participate to give respons, it could be arguments or opinions on their-selves about the materials. So, the writer interest to compare Three Phase Technique and Cooperative Integrated Reading and Composition (CIRC) technique. In the end of research, the writer wants to know whether there is any significant difference between both of the techniques or not.

According to Mubarok (2015: 100) True Experimental Design without pre-test by using control group as follows :



According to Ali (1984: 141-142) the experimental design without pre-test by using control group as follows :



Note :

Se : Sample of Experimental Group / Experimental Class

Sc : Sample of Control Group / Control Class

Te : Post- test for Experimental Group

Tc : Post- test for Control Group

X₁ : Treatment for Experimental Group (CIRC Technique)

X₂ : Treatment for Control Group (Three Phase Technique)

1.2 Population and Sample

According to Mubarak (2015: 38) Population is a unit of the subject that has certain qualities and characteristics which are studied by the researchers then be deduced.

The population of the research was the whole students of eleventh class of MA Darul Hikmah which consists four classes. They were class XI-science has 34 students, XI-social 1 has 34 students, XI-social 2 has 32 students and XI-social 3 has 26 students

Based on encyclopedia of educational evaluation which is quoted by Arikunto (2002: 108), Population is set (or collection) of all elements possessing one or more attributes of interest. However, if they want to deal with part of elements, it is called sample research (Arikunto, 1998: 130).

In this research, the writer should determine the population and then selected a sample. A good sample is the one that becomes the representatives of the population. Therefore, representative of sample determines the validity of the generalization (Arikunto, 1998:132).

The writer took the class XI-science and XI-social 1 as a sample. The students of XI-science as the experimental group and XI-social 1 as the control group, so the total of the sample was 68 students.

In this research, the writer used cluster random sampling that every subject have the same chance to become her sampling. The writer selected the sample randomly through lottery because the sample would not take individual's but class.

The steps to do cluster random sampling are :

1. Writing all names of the classes on a small piece of paper.
2. Rolling the small paper and put it in a tin.
3. Shaking the tin well.
4. Taking the roll and then the writer gets class XI-science (experimental group) and X1-social 1 (control group) as the sample of the research.

1.3 Instrument of the Research

The accurateness of the data in the research measure with an instrument. In this research, the writer use a test to get the data. The kind of test that is used is objective test which in form a multiple choice test. The students will give 35 questions of multiple choices and the time allotment is 90 minutes. Multiple choice question mean the type of question which gives the most accurate information and it saves time as the respondents don't have to give complete answer. However, before the test items is tested to the students. The writer have to measure their validity and reliability to get the accurate data. A good test ia a test which appropriate with the validity and reliability.

Validity is the extent to which it measures what it supposed to measure (Suprihadi,2001: 22). Validity is the accuracy stage of an instrument to test the things in a certain group (Ali, 1984:101). Validity is a bit more complex because it is more difficult to asses than reliability. There are various ways to asses and demonstrate that an assessment is valid, but in simple terms, validity refers to how well a test measures what it is supposed to measure.

Reliability of the test shows the stability of scores regardless of what the test measure. Reliability is the stability of test scores (Suprihadi, 2001: 19). While Ali (1984: 10) states that the test reliability is the level of consistency of the test to measure something toward certain group. It means that the test reliability or the certain sector group can be used anytime and anywhere to the same group. To measure the reliability of the test, the researcher have to do the try out.

According to Sudijono (2009:206) To know the reliability of the test is calculated by using formula as follows :

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

Explanation :

r_{xy} = the correlation of X variable and Y variable

X = the score of odd number

Y = the score of even number

N = the number of respondents

$\sum X$ = the sum of X scores

$\sum Y$ = the sum of Y scores

$\sum XY$ = the sum of the result of X and Y score for each students

$\sum X^2$ = the sum of X squared

$\sum Y^2$ = the sum of Y squared

After obtaining the whole result, this may be conclude by the application of the “Spearman Brown” (Guilford, 1956:145) formula :

$$r_{11} = \frac{2r_{xy}}{1+r_{xy}}$$

Explanation :

r_{11} = the obtained reliability of entire test

r_{xy} = the obtained reliability of half test

Then, the criteria of reliability value are as follow :

$r = 0,00 - 0,20$ not reliable

$r = 0,21 - 0,40$ low reliability

$r = 0,41 - 0,60$ sufficient reliability

$r = 0,61 - 0,80$ high reliability

$r = 0,81 - 1,00$ perfect reliability

1.4 Method of Data Collection

In collecting data, the writer use test. Test is a set of question that have the attribute right or wrong. Test is an instrument or procedure designed to elicit performance from learners with the purpose of measuring their attainment of specified criteria. The writer make a question sheet to collect the data by using a test. The type of test is multiple choices which consist of 35 items test. An item test consist of five options such as: a,b,c,d or e.

The type of test is written test. The contents of the test based on the material that the researcher conducted. The material is about Hortatory Exposition text. The students have time allotment 90 minutes doing the test. Test for reading

comprehension of eleventh-grade students of MA Darul Hikmah Menganti Kedung Jepara.

1.5 Method of Data Analysis

Based on the statements of the problem, the data was needed in this research is the reading comprehension on Hortatory Exposition text of the eleventh grade students of MA Darul Hikmah Menganti Kedung Jepara academic year 2017/2018 taught by using Cooperative Integrated Reading and Composition (CIRC) Technique and those who are taught by using Three Phase Technique. In order to describe the reading comprehension of Hortatory Exposition text, it was needed the counting. The writer had been analyzed the data by using statistical calculation through t-test formula in manual calculation, Microsoft Excel, and SPSS (Statistical Product and Statistic Solution). The gathered the data were used to examine and find out the significant difference of student's achievement in experimental class and control class. The formula t-test as follow (Sudijono, 2006:314):

$$t_0 = \frac{M_1 - M_2}{SE_{M_1 - M_2}}$$

Note :

M_1 = Mean of Variable X (experimental group)

M_2 = Mean of Variable Y (control group)

SE = Standard Error

There are several stages taken to get the calculation of t-test, it can be seen as follow :

a. Determining Mean of Variable X, with formula :

$$M_x = \frac{\sum X}{N_1}$$

b. Determining Mean of variable Y, with formula :

$$M_y = \frac{\sum Y}{N_2}$$

c. Determining of Standard Deviation score of variable X, with formula:

$$SD_1 = \sqrt{\frac{\sum X^2}{N_1}}$$

d. Determining Standard of Deviation score of variable Y, with formula:

$$SD_2 = \sqrt{\frac{\sum Y^2}{N_2}}$$

e. Determining Standard Error Mean of variable X, with formula:

$$SE_{M_1} = \frac{SD_1}{\sqrt{N_1 - 1}}$$

f. Determining Standard Error Mean of variable Y, with formula:

$$SE_{M_2} = \frac{SD_2}{\sqrt{N_2 - 1}}$$

g. Determining Standard Error of different Mean of variable X and Mean of variable Y, with formula:

$$SE_{M_1 - M_2} = \sqrt{SE_{M_1}^2 + SE_{M_2}^2}$$

h. Determining t_0 , with formula:

$$t_0 = \frac{M_1 - M_2}{SE_{M_1 - M_2}}$$

i. Determining Degrees of Freedom (df), with formula:

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

1.6 Statistical Hypothesis

Before getting the result of hypothesis, there are statistical research hypothesis as follows:

$$H_0 = \{\varphi_1 = \varphi_2\}$$

$$H_a = \{\varphi_1 \neq \varphi_2\}$$

Notes :

H_0 = Null hypothesis

H_a = Alternative hypothesis

φ_1 = student's reading comprehension on hortatory exposition text achievement by using CIRC technique.

φ_2 = student's reading comprehension on hortatory exposition text achievement by using Three Phase technique.

The writer assumption of those hypothesis are as follow :

- a. If $t_0 > t_{table}$, the Null Hypothesis (H_0) was rejected and alternative hypothesis was accepted. It means that CIRC technique was effective in teaching reading comprehension.

If $t_0 < t_{table}$, the Null Hypothesis (H_0) was accepted and Alternative Hypothesis was rejected. It means that CIRC was not effective in teaching reading comprehension.