

CHAPTER III

RESEARCH METHODOLOGY

This chapter presents about research methodology. It consists of time and place of study, method and design of study, population and sample of study, instrument of study, technique of collecting data, technique of data analysis and statistical hypothesis.

A. Research Design

The study conducted at SMP Islam Sabilal Muhtadin, for the 9 grade students which located Komplek Mesjid Raya Sabilal Muhtadin Banjarmasin Jl.Jend Sudirman No.1, Antasan Besar, Banjarmasin. It began on 14 September-19 September 2017.

B. Research Setting

The object is taught by using two methods on the students of the 9 grade in SMP Islam Sabilal Muhtadin. There are experimental group by using reading think aloud method and control group by using traditional method. The data was taken and analyzed by quantitatively to find the effectiveness on students' reading comprehension in narrative text by reading think aloud the experiment was designed as follows:

Sample	Pre-Test	Treatment	Post-Test
Experemental Group (CG)	O_1	X_E	O_2
Control Group (CG)	O_1	X_k	O_2

3.1 Table desaigned of Study

O_1 = Pre-Test

O_2 = Post-Test

X_E = The treatment of experiment group by using reading think aloud on students reading comprehension in narrative text.

X_k = The treatment of control group by using reading think aloud on students reading comprehension in narrative text.

C. Population and Sample

The population of the study was the 9 grade students in SMPIslam Sabilal Muhtadin. There are 4 classes which is less of 30 students in each class. Thus, total of population is about 128 students.

The sample of the study is only two classes of three grade students. The researcher used purposive sampling to determine sample that took in first class is 9C as the experimental group and second class is 9D as the control group. The researcher finally got both of classes 9C and 9D from the teacher's recommendation

because both of class had the same characters and both of class have got the material about narrative text. After the researcher gave a pre-test both of class and the researcher found 9D got the highest score from 9C. Finally the researcher decided to chose 9C as an experimental class and 9D as an control class because 9C need improving in reading comprehension of narrative text. On the other hand, the researcher only took 30 students both of class because some students absent and others reasons.

D. Research Instrument

The researcher collected the data by test as research instrument. There were two test; pre-test and post-test. The witer gave the same test for experimental and controll group.

The researcher gave items taste to 34 subjects to measure validity and realibility in pre-test and post-test. There were 25 items for multiple choices. The score in each item was 4 correct answer. Then, students will get 100 point if all the answer correctly. On the other hand, the researcher uses ANATES program to measure validity and reliability of the test. From calculation using ANATES program in pre-test the researcher found score 25 significance of items and post-test got score 28 significance of items.

1. Validity

Validity is the extent to which a test measure what it is intended to measure: ite relates the uses made of the test scores and the ways which test scores are interpreted, and is therefore always always relative to test purpose. In a reserach,

validity is very important to measure what they want to measure it using instrument. It means, it test is said to be valid if it measures accurately what it is intended to measure.

In this study, the researcher used ANATES program to know validity of the test which consist of 40 multiple choice. Therefore, 25 items of multiple choices has been valid in pre-test was 0,63 and post-test was 0,78 which using the items test of valid and apply both of the class.

2. Reliability

Reliability is the degree to which an assasment tool produces stable and consistent result. Similarly, Hughes adds that to be valid a test must provide consistently accurate measurement. It must therefore be reliable. It means reliability was necessary in the research to assess the good instrument or not. To achieve the reliability instrument, the researcher used ANATES program from 25 items has been valid the researcher got 0,77 (pre-test) and 0,88 (post-test) reliable of the instrument.

E. Data Colection

a. Pre-test

The pre-test conducted both of the groups, experimental and control group

in order to know students on reading comprehension in narrative text before treatment given.

b. Treatment

The researcher taught reading narrative text both of experimental group and control group. In experimental group the researcher delivered the material by using reading think aloud method except using reading think aloud in control class.

c. Post-test

The post-test was given after the teacher gave treatment to know whether or not the change on students reading comprehension ability in narrative text.

F. Data Analysis Procedures

After the researcher getting student score pre-test and post-test between experimental and control classes. The researcher analyzes the data by using requirement test before. It consist of normality test and homogeneity test.

1. Normality Test

Normality test was to determine whether the data from population normally or not. This test was purpose for ensuring the distribution of data which were accomplished from the population had normal distribution or not. Normality test used is the *liliefors* test. The researcher tested of normality of test by using SPSS22. The creteria of the testing follow;

If the value $(p) > \text{Significant } (\alpha = 0,05)$ it means the sample from the population, H_0 was accepted and H_1 was rejected (normal distribution)

If the value $(p) < \text{Significant } (\alpha = 0,05)$ it means the sample from the population, H_0 was accepted and H_1 was rejected (not normal distribution)

The steps were using SPSS22 to measure normality test as follow;

- Open file
- Click analyze → Descriptive statistics → Explore On menu toolbar
- Click and input score of reading → Dependent list and input the other variable in the factor list.
- Click statistics and choose 95% as descriptive confidence interval for mean
- Click continue until it come back in the menu
- Click plots (checklist plots with tests)
- Continue and Ok

2. Homogeneity Test

Homogeneity test was done to know the variance in population of research homogeneity or not. Homogeneity test was to measure the data of the population homogeneity or not. The researcher uses SPSS22 in this research. The criteria of the testing was follow;

If the value $(p) > \text{significant } (\alpha = 0,05)$, H_0 is accepted, it means that sample has homogenous varian which means, the students had the same character on reading comprehension in narrative text, moreover the data was valid.

If the value $(p) < \text{significant } (\alpha = 0,05)$, H_0 is accepted, it means that sample does not have homogenous varian which means, the students had the same character on reading comprehension in narrative text, moreover the data was valid.

The steps were using SPSS22 to measure homogeneity test was follow;

- Open file
- click analyze → Compare means → One-way ANOVA on menu
- click input score of reading → dependent list
- click the other variable → factor
- click options and choose homogeneity of variance test
- Continue and Ok

3. T-test Formulation

The researcher analyzed the scores between experimental and control classes. This test assumed that data normally distributed and fairly robust to departures from normality. The technique of data analysis in this study was statistical analysis with t-test to know the effectiveness.

4. Mean

Mean or average is sum of all score divide by number of scores. Moreover, Charles and Dianne adds the mean is score on a test is what is

commonly known as the average; that is the sum of all students scores divided by the number of students.

- a. Determining mean of gained score of experiment group, the formula;

$$M_x = \frac{X}{N}$$

- b. Determining mean of gained score of control group, the formula;

$$M_y = \frac{Y}{N}$$

5. Range

The symbol of range (R) and range is difference between lowest score and highest score.

The formula is follow;

$$\text{Range (R)} = R_{\text{Max}} - R_{\text{min}}$$

6. Variance

Variance is the amount of dispersion from standard deviation. The formula is:

$$S^2 = \frac{\sum f(x_i - x)^2}{\sum f}$$

7. Standart Deviation

Standart deviation is the square root of variance. Standart deviation was aimed to measure the degree of dispersion data had from mean.

The formula is;

$$S = \frac{\sqrt{\sum f (xi-x)^2}}{\sum f} = (s) \sqrt{S^2}$$

8. Effect Size

The effect size is used to know the strong or weak of the difference two groups or the relationship between two variables. Moreover, the effect size of *cohen's d* has formula as follow:

$$d = \frac{(\text{mean for a group A} - \text{mean for group B})}{\text{pooled standard deviation}}$$

Pooled standard deviation =

$$\frac{(\text{standard deviation of group 1} + \text{standard deviation group 2})}{2}$$

Beside that, there was a Statistical Calculators that called *The Effect Size (Cohen's D) Calculator for a Student t-Test* which automatically know the range of treatment's effect.

The directions using *The Effect Size (Cohen's D) Calculator for a Student t-Test* ;

- Search on Google *The Effect Size (Cohen's D) Calculator for a Student t-Test* or www.daniel.soper.com calculator web)
- Input mean score of group 1 and mean score of group 2 (post-test)
- Input standard deviation of group 1 and standard deviation of group 2 (post-test)
- Click calculate and the result will be show

The criteria of effect size range are small, medium, or large. The criteria are:

Table 3.2 Criteria of *Cohen's d* (effect size)

Effect size range	Criteria
0,2	Small
0,5	Medium
0,8	Large

G. Statistics Hypothesis of Study

The statistical hypothesis of study are:

- $H_0 = X_1 < X_2$; If $t_{value} \leq t_{table}$ (There is no significant difference using Reading Think Aloud on students reading comprehension in narrative text)

$H_a = X_1 < X_2$; If $t_{value} \leq t_{table}$ (There is significant difference using Reading Think Aloud on students reading comprehension in narrative text)