

CHAPTER III

METHOD OF THE RESEARCH

A. Research Method

The research the writer used experimental research. She tries using pre-questioning for reading skill. Experiments are carried out in out order to explore the strength of relationship between variables¹. There were three kinds of experiment research, such as: the first, true experiments consist of control and experiment groups to which subject have randomly assigned, and in which all subject are tested before and after the invention or treatment under investigation has been administrated to the experiment group. The second, a pre-experimen may have pre and post treatment test, but lack of control group. The third, a quasi experiment has both pre and post test, and control and experiment groups, but no random assignment subject.²

From types of experiments above in this research, the writer takes the quasi experiment design that has class control as compare class experiment. In this research the writer takes two classes consist

¹ David Nunan, *Research Method In Language Learning*, (Camridge: Univercity Press,1992).p.24-25

² David Nunan, *Research Method In Language Learning*, (Camridge: Univercity Press,1992).p.40

of the experimental class who are given pre-questioning and the control class without it. Because the quasy experiment has control and experiment class and it is not random assignment.

The method used in this research is quasi-experimental method. This design has a control group, but it can not function fully to control the outside variables that affect the implementation of the experiment.³In this study using Quasi Experimental design is Nonequivalent Control Group Design. In this design, there are two groups selected, namely experimental group and control group. The experimental group was a class that received pre-questioning technique, the control group was a class that did not get pre-questioning technique

B. The objective of research

The object of the research is using test to improve students reading skill. The research will take in the second grade junior high school of SMPN 2 Bojonegara academic periode 2016-2017

C. Place and time of the research

The writer take this research in SMPN 2 Bojonegara. Its location on Kp. Wanakarta Desa Purwakarta Kecamatan Bojonegara kabupaten Serang because the writer knows in SMPN 2 Bojonegara

³ Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif R & D*, (Bandung: Alfabeta,2008), p. 114

some problems that happen with students in English skills especially in reading skill. The writer uses one technique is pre-questioning on students of SMPN 2 Bojonegara. This research will conduct on March 2017

D. Population and sample

a. Population

Population is the entire subject of the research “a population is a set of all elements possessing one or more attributes of interest”⁴. Population of this research is the students of SMPN 2 Bojonegara Kabupaten Serang-Banten especially the second grade of junior high school consist 175 students.

b. Sample

Sample is part of representative of population being research⁵. on taking sample, the writer takes 70 students as samples from population purposely. Sample that consists of class VIII A is experiment class 35 students and class VIII B is class as a control 35 students from second grade of SMPN 2 Bojonegara.

⁴ Suharsini Arikunto, *Procedure Penelitian Suatu Pendekatan Praktek*, (Jakarta: Rineka Cipta,2006),p..173

⁵ Suharsini Arikunto, *Procedure Penelitian Suatu Pendekatan Praktek*, (Jakarta: Rineka Cipta,2006),p..104

E. The Research Instrument

In this research, the writer gives the student two tests. These are pre test and post test. Pre test was given before the writer observed the class, and post test was given after the writer finished taking the observation in the class. So the writer know wether there are differences before and after observation or not.

F. The Technique Of Data Collecting

To collect the data for this research, the writer takes the data by using test as an instrument. She uses test for knowing result study of reading skill before and after using pre-questioning.

a. Pre-test

The writer uses pre-test before use pre-questioning to knows students' reading skill at SMPN 2 Bojonegara.

b. Post-test

The writer uses post test after use pre-questioning. The writer can knows the result how using pre-questioning to increase students' reading skill.

G. The Technique of Data Analyzing

Data processing is an important part in the research, because by doing data processing, the data can be given meaning and meaning useful in solving problems in research. After the data collected and student learning outcomes have been known, then from each data is made frequency distribution table then calculated. The steps taken in data processing are as follows.

1. Determining the average

as follow:⁶

$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$$

\bar{x} = Average sample

\sum = amount

f_i = Number of samples

x_i = The value of x to-i to-n

2. Define standard deviation

As follow:⁷

$$S^2 = \frac{n(\sum f_i x_i^2) - (\sum f_i x_i)^2}{n(n-1)}$$

⁶ Sudjana, *Metoda Statistik*, (Bandung : Tarsito, 2005) p. 70

⁷ Sudjana, *Metoda Statistik*, (Bandung : Tarsito, 2005) p 95

S^2 = Standard deviation

f_i = frequency

x_i = value

n = The number of students taking the test

3. Determining the Median (Me)⁸

$$Me = b + p \left(\frac{\frac{1}{2}n - F}{f} \right)$$

Me = Median

b = The lower limit of the interval class

p = Length of the interval class

n = The number of students taking the test

f = Cumulative frequency

F = Frequency of the median class

4. Define Mode (Mo)⁹

$$Mo = b + p \left(\frac{b_1}{b_1 + b_2} \right)$$

Mo = Mode

b = The lower limit of the mode class

⁸ Sudjana, *Metoda Statistik*, (Bandung : Tarsito, 2005) p 79

⁹ Sudjana, *Metoda Statistik*, (Bandung : Tarsito, 2005) p 77

p = Length of the interval class

n = The number of students taking the test

b_1 = Frequency class mode minus previous frequency

b_2 = Frequency of class mode minus frequency afterwards

Before doing hypothesis testing with t-test then must be tested requirement analysis. Test requirements analysis is a test of normality and homogeneity test, to determine whether the data obtained normal distribution or not.

1. test of normality

By using Chi-squares:

$$x^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

x^2 = Chi-squares count

\sum = amount

f_o = Frequency being observed

f_h = Expected frequency

2. Homogeneity Test

Homogeneity test aims to determine whether the group has the same or different variants. If the group has the same variance then the group is said to be homogeneous.

The formula used is:¹⁰

$$F = \frac{S_1^2}{S_2^2}$$

F = F Test Score

S_1^2 = Greatest variance

S_2^2 = Smallest variance

With:

$$S^2 = \frac{n \sum f_i x_i^2 - (\sum f_i x_i)^2}{n(n-1)}$$

S^2 = Sample variance

f_i = Frequency value

x_i = value

n = Many samples

3. Hypothesis Testing

Hypothesis testing is a procedure that will generate a decision to accept or reject the hypothesis proposed by previous researchers. To test the hypothesis proposed then tested the hypothesis as follows:

a. Normally distributed data and both homogeneous variance

¹⁰ Sudjana, *Metoda Statistik*, (Bandung : Tarsito, 2005) p 250

The formula used, if the data is normally distributed and both homogeneous variance is:¹¹

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

With:

$$s^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

\bar{x}_1 = Average score of test group experimental results

\bar{x}_2 = The average score of control group test results

n_1 = Number of sample experimental groups

n_2 = Number of control group samples

s_1^2 = Variance of the experimental group

s_2^2 = Variance control group

t = The result of the distribution t count

S = Combined standard deviation value

The testing criteria as follows:

- Accept H_0 , if $t_{hitung} < t_{tabel}$

- Decline H_0 , if $t_{hitung} > t_{tabel}$

¹¹ Sudjana, *Metoda Statistik*, (Bandung : Tarsito, 2005) p 239

b. Data is normally distributed and both variance is not homogeneous

If the two standard deviations are not equal but the two populations are normally distributed, up to now no precise statistics can be used. A satisfactory approach is to use t-test 'statistics as follows:¹²

$$t' = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\left(\frac{s_1^2}{n_1}\right) + \left(\frac{s_2^2}{n_2}\right)}}$$

t' = Average searched

x_1 = Average test group experimental results

x_2 = Average control group test results

s_1^2 = Variance of the experimental group

s_2^2 = Variance control group

n_1 = Number of sample experimental groups

n_2 = Number of control group samples

Test criteria are: accept hypothesis H_0 if

$$-\frac{w_1 t_1 + w_2 t_2}{w_1 + w_2} < t' < \frac{w_1 t_1 + w_2 t_2}{w_1 + w_2}$$

With : $w_1 = s_1^2/n_1$; $w_2 = s_2^2/n_2$

$t_1 = t_{(1-1/2\alpha), (n_1-1)}$ and

$t_2 = t_{(1-1/2\alpha), (n_2-1)}$

¹² Sudjana, *Metoda Statistik*, (Bandung : Tarsito, 2005) p 241

t' = The calculation results with the formula t

w_1 = Variance of group 1 divided by sample of group one

w_2 = The variance of group 2 is divided into two groups of samples

t_1 = Distribution tables t (0,95), ($n_1 - 1$)

t_2 = Distribution tables t (0,95), ($n_2 - 2$)

c. Statistical hypothesis

The statistical hypothesis to be tested in this research is:

For t-test

$H_o : \mu_1 = \mu_2$

$H_a : \mu_1 > \mu_2$

μ_1 = The average student of the experimental group

μ_2 = Average student control group