

## **CHAPTER III**

### **RESEARCH METHOD**

#### **A. Research Design**

This approach used in this study was the quantitative approach. True to its name, widely used with numbers. Start from data collection, interpretation of the data, as well as the appearance of the result (Suryabrata, 2003).

The design of this research is the research of Quasi experiment research conducted by doing manipulation aimed at know the result of manipulation treatment against individuals (Latipun, 2006).

Quasi-experimental research designs, like experimental designs, test causal hypothesis. In both experimental. Quasi-experimental designs identify a comparison group that is as similar as possible to the treatment group in terms of baseline (pre-intervention) characteristics. The comparison group captures what would have been the outcomes if the programme/policy had not been implemented. Hence, the programme or policy can be said to have caused any difference in outcomes between the treatment and comparison groups. (Howard White and Shagun Sabarwal, 2014)

In this study, the researchers compared the two classes research. One class of students was given special treatment of translation experiment

class. While one class of students who be a control class, where as a class in the process of teaching and learning do not use translation.

The research design used i.e. Posttest Only Control Group Design with pattern as follows:

	Experi ment	O1		2
	Contro l	O3		4

Table3.1. *Pretest-posttest Control Group Design*

Description:

(R): the Group is selected by random

(X): Treatment or treatment for experimental groups in using the media.

(O2: O4): influence of the existence of treatment (alphabets experiment and control)

In this design research, there are two classes that are chosen by random, than given a pretest to know the State is the difference between the experiment group and the control group. A good pretest results when the value

group of experiment did not differ significantly. The influence the treatment is (O2-O1) – (O4-O3)

## **B. Research Setting**

This research takes place at XI Science grade of SMAN 1 Marabahan of AES Nasution street RT 2 RW 1 Kelurahan Marabahan kota, Kabupaten Barito Kuala, South Borneo. Who have area around 15853 m<sup>2</sup>. SMAN 1 Marabahan has 60 teachers and 589 students. Then, SMAN 1 Marabahan has 21 classrooms which all MIA from X until XII has 9 classrooms (3 classroom each grade), all IIS until X until XII has 12 classrooms (4 classroom each grade). Also, they have 3 Science laboratory, 1 Library, 1 Computer laboratory, 1 Language laboratory, 1 Multimedia room, 1 Art room, and 1 Scouts room.

## **C. Population and Sample**

### **1. Population of the Research**

Population represents entire/all subject research. Nawawi (2003) in Iskandar (2009: 118) population is grand total of subject research which can be consisted of by the human being, object, animal, flora, symptom, assess the test or event as data source owning certain characteristic in a research. While according to Sudjana (2005: 74) population is totality of all value which possible, result of counting/calculating or measurement,

quantitative and also qualitative hit the certain characteristic from all clear and complete corps member is which wish learned by the nature.

The Population of this research is all students of XI Science 1 grade consist from 27 students (male = 8, and female = 19), XI Science 3 grade consist from 29 students (male = 9, and female = 20). And the total is 56 students.

## 2. Sample of research

The sample is a part of the population that has the same characteristics of the population. The sample can also is the population itself. According to sugiyono (2012:118) "sample is part of the number and characteristics of which are owned by the population". Suharsimi Arikunto (2012:174) states briefly that "the sample is just partly or totally from the whole population".

The consideration of taking the sample in this study using a purposive sampling technique. "purposive sampling is a technique of determining the sample with a certain consideration", (Sugiyono, 2012:183). This type of withdrawal sample by considering the type of research used in this study requires the control class and experiment class.

Then it can be concluded that both class XI Science 1 Grade and XI Science 3 grade will be the two samples were selected from all population classes.

#### **D. Research Instrument**

In any scientific research, instrument for collecting data was absolutely important. The accuracy of the result of research was mostly dependent on how accurate the use of instrument. Before research carried out, the instrument for the data collection should be well prepared.

The instrument that the researcher used in this research is Test. According Moreover, Heaton (1975: 89) states that the test used must be appropriate in term of our object, the dependable in the evidence provides, and applicable to our particular situation. In this case, the researcher gave the students reading test in using Think aloud strategy.

This study aimed at knowing the effectiveness of teaching technique translation in teaching English from identify the result of the test.

#### **E. Data Collection**

The data collected from all instruments, as follow:

1. Test

Will be given by a series exercises that use for measuring the student ability about the material (teaching technique translation). The data will be submitted from pre-test before do a treatment (for detecting how far the students English concept about “teaching technique translation” material, then it will be compared with test result of post-test after a treatment.

- a. Pre-test. The pre-test conducted both of the class, experimental and control class in order to know students' in teaching reading before treatment given.
- b. Treatment. In experiment class the researcher using free translation in teaching reading and control class without free translation.
- c. Post-test. The post-test given after the researcher give treatment to know whether or not the change on students' in teaching reading.

#### **F. Technique of Data Collection**

The steps collecting data there are several stages, namely:

1. Make the instrument test research, the test is performed to determine learning outcomes. Forms tests be about text.
2. Perform the validation and reliability of instruments
3. Conduct teaching and learning by doing in class experiments using free translation in teaching reading to translate the text, and teachingreading in control class without using free translation.
4. draw up post test
5. do a test on a sample of students who are
6. analyzing data and conclusion

#### **G. Data Analysis Procedure**

Before the instrument used for the research, it tried in XI Sciencegrade who have gotten a material. Instrument processed and analyzed after that. As following is analysis that use to know the suitable of research instrument:

### 1. Validity Test

According to Arikunto, a test will be called to be valid if there is sufficient evidence that test score correlated fairly highly with actual ability in the skills being tasted, and then we may feel reason ably safe in assuming that the test is valid for our purpose. The writer corrects all of the items to know whether each of them valid or not. It is counted using product moment formula:

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

Explanations:

$r_{xy}$ = Correlation coefficient between X variable with Y variable

N= Total of test participant

X= Score for each item

Y= Total Score

After getting the result, the writer categorizes it into the standard validity as follows:

Table II

<b>Value</b>	<b>Category</b>
0,80 - 1,00	Very Valid
0,60 - 0,79	Valid
0,40 - 0,50	Valid Enough
0,20 - 0,39	Less Valid
0,00 - 0,19	Not Valid

A test said valid when it measures what is intended to measure. Calculation result of  $r_{xy}$  is compared with  $r$  table of product moment by 5% degree of significance. If  $r_{xy}$  is higher than  $r$  table, the item of question is valid.

## 2. Reliability Test

According Sugiyono (2013: 121) "Reliability is the instrument when used several times to measure same object who will generate same data".



Reliability Instrument has level for understanding engineering and creativity is calculated by the formula KR 20 (Kuder Richardson), because instrument score is not a stretch, but correct or wrong. Formula KR 20 (Sugiyono, 2012: 359) are as follows:

$$r_i = \frac{k}{(k-1)} \left\{ \frac{s_t^2 - \sum p_i q_i}{s_t^2} \right\}$$

where:

$n$  = sample size for the test,

Var = variance for the test,

$p$  = proportion of people passing the item,

$q$  = proportion of people failing the item.

$\Sigma$  = sum up (add up). In other words, multiple Each question's  $p$  by  $q$ , and then add them all up. If you have 10 items, you'll multiply  $p \cdot q$  ten times, then you'll add those ten items up to get a total.

After get  $t_{count}$ , then compared with the criteria from Guilford to know about the interpretation of reliability has been calculated. Guilford Criteria split into 5 reliability criteria like very low, low, moderate, high and very high.

Tabel4. Classification reliability coefficient

The reliability coefficient (r)	Interpretation
$0.00 \leq r \leq 0.20$	Very Low

$0.20 \leq r \leq 0.40$	Low
$0.40 \leq r \leq 0.60$	Medium / Fair
$0.60 \leq r \leq 0.80$	High
$0.80 \leq r \leq 1,00$	Very High

### 3. Normality Test

It will test the normally data that will be tested in sthis study.

Researcher uses Chi-Square test of Sudjana (2005:273) as follow:

- a. The significance Level

The significance level used  $\alpha = 5\%$

- b. Statistic test  $\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$

Explanations:

O<sub>i</sub>: Frequency of hope

E<sub>i</sub>: the expected Frequency

K: the number of observations

This test used SPSS 23 program. Kolmogrov Smirnov Test of normality in the study carried out using the program SPSS 23. With the provisions if the significance is greater than 0.05 then it can be inferred.

### 4. Homogeny Test

Is used to know whether experimental group and control group, that are decided, come from population that has relatively same variant or not.

The formula is:

$$F = \frac{Vb}{Vk}$$

Notice:

Vb : bigger varian

Vk : smaller varian

## 5. Hypothesis Test

Hypothesis will be counted with:

$$H_0 : \mu_1 \leq \mu_0$$

$$H_a : \mu_1 > \mu_0$$

Hypothesis test will use formula as follow:

$$t_{hitung} = \frac{\bar{X} - \mu_0}{\frac{s}{\sqrt{n}}}$$

Where :

$\bar{X}$  = mean from *post-test*

$\mu_0$  = mean from *pre-test*

s = deviation standard *post-test*

n = total of sample

Test Criteria as follow:

If  $t_h \leq t_0$ ,  $H_0$  accepted.

If  $t_0 > t_h$ ,  $H_0$  ignored.

#### 6. Significant of Hypothesis test

Determine the significant standard  $\alpha = 0,05$ . Then, looking for t table with a pattern  $db = n-1$ .

Test Criteria as follow:

If  $t_h \leq t_0$ ,  $H_0$  significant.

If  $t_0 > t_h$ ,  $H_0$  not significant.

In this research, the data gained from post-test was organized and summarized by using descriptive statistics. After that, the data was statically computed by using inferential statistics.

#### 7. Descriptive Statistics

Descriptive statistics was tabulated the results of students' translation test score in the form of frequency table. After the frequency distribution was set up, it was summarized which was aimed at finding out mean, median, and modus.

a. Mean

The 'Mean' (Average). And the formula is

$$\bar{X} = \frac{X_1 + X_2 + X_3 \dots X_N}{N}$$

Where

$\bar{X}$  = the mean

$X_1$  = the first value

$X_2$  = the second value

$X_3$  = the third value

$X_N$  = the last value

N = the number of valuse

b. Median

The Median is the 'middle value' in your list. And the formula is

$$| \quad \text{Median} = B_m + I. \left( \frac{\frac{n}{2} - (\sum f_i)_0}{f_m} \right)$$

where:

$B_m$  = lower bondery of median class

$(\sum f_i)_0$  = the sum of frequencies from the classes before median class

$f_m$  = frequency of median class

$n$  = number of all observations

$I$  = interval of median class.

c. Mode

The mode in a list of numbers refers to the list of numbers that occur most frequently. And the formula is

$$\text{Mode} = l + \left( \frac{f_s}{f_p + f_s} \times c \right)$$

where

$l$  = Lower limit of the modal class.

$f_s$  = the frequency of the class succeeding the modal class .

$f_p$  = the frequency of the class preceding the modal class

$c$  = Width of the class interval.

