

CHAPTER III

RESEARCH METHOD

To get the accurate data, the setting of the research is outlined and directed to answer the formulation of the problem. This chapter will discuss the method that is used by the researcher in conducting this study. The discussion includes the research design, variable of research, population and sample, location of the research, treatment, research instruments, and data analysis.

A. Research Design

This study investigated the effectiveness of teaching vocabularies using *scramble method*. This study uses quantitative design. This study uses experimental research because the researcher will do some experiment by giving some treatment to the subject study to know that there is any effectiveness of teaching vocabularies using *scramble method* by comparing two groups of study (experimental and control group). The experimental group will be taught by using *scramble method* and control group will be taught without using *scramble method*.

The result of the test was analyzed statistically by using T-TEST to know the effectiveness of *scramble method* in teaching vocabularies. In experimental study, the researcher manipulates at least one independent variable and observes the effect on one or more dependent variables. For example the researcher wants to determine the effect of a new teaching

approach on vocabulary achievement by applying scramble method. The researcher could perform the treatment with one group of participants called experimental group and the other group will not get treatment called control group.

The experimental group will be taught using *scramble method* and control group will be taught without *scramble method*. Before and after doing treatment the researcher will give two kind of tests to the students in both groups, namely pre-test and post-test. Pre-test in this study is to know the students ability before treatment using *scramble method*. Post-test is to know the progress of students ability after treatment using *scramble method*.

Experimental Group : Pretest → Treatment → Post Test

Control Group : Pretest → conventional → Post Test

B. Variable of Research

The variable is the condition of characteristic that the experimenter manipulates controls and observes. In this research there are two kind of variables. In the experimental research, the writer only manipulates one independent variable and one dependent variable. Dependent variable is observed to determine what effect, if any the other types of variable I have on it.¹

There are two variable in this study they are :

Independent variable : Scramble method

¹James dean brown, understanding research in secound language learning a teachers guide to statistic and research design (cambridge university press: New york, 1998)

Dependent variable : Teaching vocabulary

Extraneous variable are those uncontrolled variable (variable not manipulate by the experimenter) that I have a significant influence upon the dependent variable². The extraneous variable are : student's basic ability, English book, student's attention, family support. And in experimental I do the scramble methode.

C. Population and Subject

Population is the largest class to which we can generalise the results of an investigation based on a subclass.³ It is important for the researcher to know the area that will be studied in order to make the researcher collect the data easier. The researcher chooses the fifth grade students of SDN Babadan III . The academic year 2011/2012 that consists of 24 students. The 24 students were divided into two classes (class A, B consist of 12 students).

Both of the classes are used as a sub group of the total number in population which will be taken as the treatment or experiment group. Because the researcher uses quasi experiment, the researcher does not take the sample randomly; the class is VA and VB. The class VA as experimental group that will be taught by using scramble methode, and class VB as control group that will be taught without using scramble method.

²John.W Bosh, *Research in Education*,(USA: prentice_Hall INC,1980)

³Anthony Woods, Paul Fletcher, Arthur Hughes, *Statistics in Language Studies* (New York: Cambridge University Press. 1986), 49

D. Treatment

The treatment is the procedures of activities that were used by the writer to the students to know the effectiveness of the new method that will be applied. There are two groups observed, namely experimental group and controlled groups. The experimental group is a class that receives *scramble method*. Another group that is called as control group does not receive *scramble method*.

The activities of the treatment in this research are:

1. Observation

Observation here is done for knowing the object of the study. It is also done for choosing students that are included in experimental group and control group.

2. Giving pre-test

Before the researcher applies the strategy of the study, pre-test will be given to all groups (experimental class and control class). It is to know the ability of the students before they get treatment.

3. Giving treatment for the experimental group but not the control group

This treatment is done for knowing the differences result of the experimental given new method that the researcher would like to apply and control group that is not given new method. Here the researcher starts to apply the new method called *scramble method* especially to the experimental group. The researcher tries to replay the vocabulay in the last

meeting and then the researcher give new vocabulary in scrambled word.

in every meeting for about one month.

4. Giving post-test

The post test is used for knowing the effectiveness of new method that the researcher has applied, whether it is effective or not.

TABLE.1
TABLE OF TEACHING PROCEDURE

NO	EXPERIMENTAL GROUP	CONTROL GROUP
1	Greeting	Greeting
2	The teacher asks the student about the last lesson	The teacher ask the student about the last lesson
3	Giving the new material, the new material about daily activity, the teacher asks to the student to tell their daily activity	Giving new material about daily activity without giving the method
4	The teacher gives short text about daily activity	The teacher teach the student by using LKS do exercise about daily activity
5	After giving the text, the teacher ask the student's to read the text clearly and also asks to translate in indonesian about the text	The teacher ask to the student to do excercise in the LKS
6	After they read and translate the teacher gives a new vocabulary (in scrambled words) about daily activity, and asks to the the student arrange the letter to be a word that have a meaning	The teacher asks to the student to do excercise in the LKS
	Giving the excercise using the text and asks to the students to arrange the word and arrange the letter aand also find the meaning	The teacher ask to the student to do excercise in the LKS
	Closing and greeting	Closing and greeting

E. Instrument

In this research the instrument which is used by the researcher is test only. Test is a set of stimuli presented to an individual in order to elicit

responses based on numerical score that can be assigned this score. ⁴The test is given to all of sample after the experimental group get some treatment and control group does not. The material of the test is same for both experimental and control group. The purpose of the test is to know the progression of both control and experimental group. The test consists of pre-test and post-test.

1. The format of the test

The tests are in the form of arrange the word and match a math which consist of 20 items. The test is divided into two groups. The first group is ten items in which every item has arrange and match. The second group is 5 items in the form of arrange the words.

2. The scoring system

The researcher scored the sample of research or students' result by accounting the correct answer number item of row score. Then the row score are easy by 4 and the results of easy become the converted score. It means that if the result of the test has 20 correct answer items, the score is $20 \times 5 = 100$. The 100 is the converted score which will be used by the writer.

⁴ As. Hornby. *Oxford Advanced Learner's Dictionary of Current English* (New York: Oxford Pers University, 95)153

This table was used to classify the students' final score:⁵

Table: 3.1

Score	Classification
80-100	Very good
66-79	Good
56-65	Fair
46-55	Bad
0-45	Very bad

3. Pre-test

The researcher gave pre-test to both groups, experimental and control group. The researcher had aims to know the students' ability in vocabulary. The pre-test was done before the experimental group got treatment from the researcher. The researcher gave a pre-test before the treatment. The post test was conducted on 16 June 2012.

4. Post-test

The researcher gave post-test to both of groups, experimental and control group. The researcher aimed to know the students' ability in experimental group who got the treatment of teaching vocabulary using *scramble method* and the control group who did not get the treatment of teaching vocabulary using *scramble method*. The post-test was done after

⁵Anas Sudijono, *Pengantar Evaluasi Pendidikan*, (Jakarta: PT. Raja Grafindo Persada, 1998), 35

the experimental group got treatment from the researcher. The post test was conducted on 7 July 2012.

5. Try Out

Before the instruments were used in the real situation, the researcher gave the try-out. The researcher gave try-out to the fifth grade students of SDN Babadan III. It was conducted in another class of the fifth grade students of SDN Babadan III Class A. The aim of conducting the try-out was to check the time allocations, to know the validity of the items and the reliability of the test scores and also to determine the effectiveness of the test items.

After the try-out is administered, the item analysis, reliability, and the effectiveness of the test can be determined.

6. The criteria of good test

One of the ways to know that a test is good enough, it should use the reliability and validity. They consist of index of difficulty and index of discrimination.

a. Reliability

Reliability can be defined as the extent to which a test produce consistent result when administrated under similar condition.⁶ Reliability of the test means the stability of test scores. There are some formulas to measure the reliability of the test. The researcher uses KR-21 to measure the reliability of the test:

⁶Evelyn Hatch & Hossein Farhady, *Research Design and Statistics for Applied Linguistics* (London: Rowley Massachusetts, 1982), 244

$$KR - 21 = \frac{k}{k-1} \left(1 - \frac{\overline{X} |k - \overline{X}|}{kS^2} \right)$$

Note: k : the total of number items in the test

\overline{X} : mean

S : standard deviation

TABLE: 3. 2

THE RESULT OF TRY OUT

Number	Score
1	0,66
2	60,0
3	46,6
4	33,3
5	53,3
6	60,0
7	73,3
8	53,3
9	60,0
10	53,3
11	46,6
12	60,0
13	60,0
14	60,0
15	50,0
Total	839,6

$$K : 15$$

$$\bar{X} : 1769$$

$$S : 40,7$$

$$KR - 21 = \frac{k}{k-1} \left(1 - \frac{\bar{X} |k - \bar{X}|}{kS^2} \right)$$

$$KR - 21 = \frac{15}{15-1} \left(1 - \frac{1769 |15 - 1769|}{15 \cdot (40,7)^2} \right)$$

$$KR - 21 = 1.0714 \left(1 - \frac{1769 |15 - 1769|}{610,5} \right)$$

$$KR - 21 = 1.0714 \left(1 - \frac{-15}{610,5} \right)$$

$$= 1.0714(1 - (0,024))$$

$$= 1.0714(0,976)$$

$$= 0.96$$

A complete of lack reliability is indicated by the test of coefficient of 0.00 and perfect positive reliability is indicated by coefficient of 1.00. Based on this criterion, the reliability estimate for thirty items is 0.96. It means the test of try out is reliable.

b. Validity

Validity is the extent to which a test measures what it claims to measure. It is vital for a test to be valid in order for the results to

be accurately applied and interpreted.⁷ A test must appropriate with the objectives. Content validity is concerned with what goes into the text, thus the degree of content validity in classroom test relates to how well the test measure the subject matter content studied.

c. The level of difficulty

The level of difficulty or facility value of items simply shows how easy or difficult the particular items proved in the test. The index of difficulty (P) is generally expressing the fraction or the percentage of the students who answer the items correctly. It is calculated by using the following formula:

$$P = \frac{n}{N} \quad \text{Note: } n: \text{ the number of the correct answer}$$

N: the number of the students taking the test

The classification:

0 _ 0,30 = was difficult

0,31 _ 0,70 = was fair

0,71 _ 1,0 = was easy

For example let's take items no.1

$$n = 10$$

$$N = 22$$

$$P = \frac{10}{22} = 0,66$$

⁷Psychology.about.com/od/researchmethods/f/whatIsValidity.htm.retrieved at March03rd, 2012

Table 3.3
The Result of the Item Difficulty

Item	ID	Level	Item	ID	Level
1	0,66	Was fair	11	0,46	Was fair
2	0,60	Was fair	12	0,60	Was fair
3	0,46	Was fair	13	0,60	Was fair
4	0,33	Was fair	14	0,60	Was fair
5	0,53	Was fair	15	0,53	Was fair
6	0,60	Was fair			
7	0,73	Was easy			
8	0,53	Was fair			
9	0,60	Was fair			
10	0,53	Was fair			

After getting the P value, we could say that item number 7, is easy. It because the P value = 1 belong the interval 0.11- 1 which is included in the easy level. The whole computation result of difficulty index for each item are number 1,2, 3, 4, 5, 6, 8, 9,10, 11,12, 13, 14,and 15, as medium items.

d. Discrimination power

The index of discrimination power of the test item is the difference between the correct and incorrect number of high and low students. To estimate item discrimination power, the researcher compared the number of students in upper and lower group answering the item correctly. The formula used to know the discrimination power is as follows:

$$D = \frac{U - L}{N}$$

Note: D: index discrimination

U: the number of correct answer for upper class

L: the number of correct answer for lower class

N: the number of the students taking the test

The classification:

D	0	-0,21	= poor
D	0,21	-0,41	= satisfactory
D	0,41	-0,71	= good
D	0,71	-1,0	= excellent

For example let's take item number 1.

$$U = 4$$

$$L = 3$$

$$N = 5$$

$$D = \frac{4-3}{5} = 0,2$$

Table.3.4

The Result of the Discrimination Power

Item	DP	Level	Item	DP	Level
1.	0,6	Good	11.	0,4	satisfactory
2.	0,6	good	12.	0,6	good
3.	0,8	excellent	13.	0,6	good
4.	0,3	satisfactory	14.	0,6	good
5.	0,4	satisfactory	15.	0,6	good
6.	0,6	good	16.	0,4	satisfactory
7.	0,2	poor			
8.	0,4	satisfactory			
9.	0,6	good			
10.	0,4	satisfactory			

From the table above we can see that items number 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13,14, 15, are include into discrimination power, and those items can be used as a test. There are many items which discriminate the students' ability ineffectively; those are item number 7 these numbers do not have power to discriminate the students.

E. Procedure of Experiment

This study uses the truth-experimental that uses "control group pre-test – post-test design". Dealing with this experiment, the teaching activities are

divided into three parts. There are pre-teaching activity, main-teaching activity, and post-teaching activity. The pre-teaching activity is giving pre-test. The main teaching activity is doing treatment which is given to experimental group. After getting treatment for the experimental group and conventional teaching for control group, the last activity is giving post test to all of the groups to know whether teaching vocabulary with using *scramble method* is effective or not.

In this part, the researcher will explain how the procedure in teaching vocabulary using *scramble method*. The procedures of teaching are pre-teaching activity, main teaching activity, and post-teaching activity. All procedures of teaching use lesson plan.

Table. 3.5

The Schedule of Activities during the Research

Meeting	Stages	Topic	Control Group	Experimental Group
First	Pre-test	DAILY ACTIVITY (HOLIDAY)	Apr 30, 2012	Apr 30, 2012
Second	Treatment I		May 07, 2012	May 07, 2012
Third	Treatment II		May 14, 2012	May 14, 2012
Fourth	Treatment III		May 21, 2012	May 21, 2012
Fifth	Post Test		jun16, 2012	jun16, 2012

The treatment began on 30 April 2012 and ended on 28 June 2012. In conducting the treatment, the researcher gave the English lesson once a week.

She conducted five meetings. The allocated time for each meeting was 2 x 45 minutes. Before giving treatment, the teacher prepared the material of lesson about "daily activity". These are the composition of class activities:

1. The teacher writes a single word in the centre of the board, and she asked the students for brainstorming all of the words related to those words.
2. Then the teacher asked the students to translate or tries to find out the meaning of the words in dictionary.
3. The teacher brings the class together to hear the results (result of the meaning). Then asks the students to pronounce or to read aloud the entire list words for several times along with the meaning in front of the class one by one.
4. Finally, the teacher asked the students to memorize the words one by one in front of the class.

F. Data Analysis

The data of this study is obtained from the test , the data obtained from the score of the test is quantitative data, where the researcher has analyses by applying statistical methode to get the generalization or conclusion. To find the answer of the efectiveness of arrange the scrambled word in teaching vocabualry and in to investigate about the correct hypothesis, the researcher analysize data by using t-test formula for independent sample:

$$t\text{-test} = \frac{X_1 - X_2}{\sqrt{\frac{SD_1^2 + SD_2^2}{N_1 + N_2}}}$$

Where :

X1 : The mean of experimental group

X2 : the mean of control group

SD1 : standart deviasion of experimental group

SD2 : standart deviasion of control group

N1 : the total number of experimental group

N2 : the total number of control group