

## **CHAPTER III**

### **RESEARCH METHOD**

In this chapter the researcher presents some points related to this research include research design, population and sample, research instrument, validity and reliability, normality and homogeneity, data collecting method and data analysis.

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

Approach is a way of considering or doing something. Researcher needs it to guide her research, so research carried out appropriate with her planning. According to Balnaves and Caputi (2001: 29) research design is the guide to how the research was constructed and carried out. So that, in this section explains how the research constructed.

Research is defined as a study to find the new fact. Researcher tried to research how the mnemonic method effective for students. In this study, the researcher uses the experimental research. The experimental method is the only method of research that can be truly test hypothesis concerning cause-and effect relationship. Grounded the hypothesis, the researcher show the evidence how the technique is effective for student and it cannot be apart from previous studies. This research was to know the effectiveness of mnemonic method toward students' vocabulary mastery of second grade at MTsN 4 Tulungagung.

Variable is everything that to be learned the researcher so get the information from that, then the researcher get the conclusion. a variable is

a general class of objects, events, situations, characteristics and attributes that are of interest to the researcher (Balnaves and Caputi, 2001: 46). This research conducted an experimental teaching using mnemonic method. It had two variables, they are:

1. Independent variable in this research is the researcher use mnemonic method toward students' vocabulary mastery.
2. Dependent variable in this research is the students' achievement of second grade at MtsN 4 tulungagung indicate their understanding on vocabulary.

An experimental research design involve three classifications, there are pre-experimental, quasi-experimental and true-experimental. In this research chooses pre-experimental for one group which are pre-test and post-test. Time for gets the scores to compare the method is effective or not conduct in two times are pre-test and post-test. Pre-test carried out before giving treatment and post-test after giving treatment.

The procedures of experimental research that use one group pretest-posttest design: (1) Administrering a pre-test before applying technique with a purpose of measuring vocabulary mastery of second grade students at MTsN 4 Tulungagung; (2) Applying the experimental treatment X to the subjects; (3) Administering a post-test after applying technique with a purpose of measuring vocabulary mastery of second grade students at MTsN 4 Tulungagung.

That is based on the diagram bellow:

**Table 3.1 The Diagram One Group Pretest-Posttest Design**

Y1	X	Y1
Pre-test	Treatment (Independent variable)	Post-test (Dependent variable)

At the end of the research, the researcher concluded the effectiveness of Mnemonic method in teaching vocabulary by using pre-experimental design by comparing pretest and posttest results of D class. The effectiveness is known through differentiate score between pre-test and post-test, if the post-test score higher than pre-test score the technique is effective.

## **B. Population and Sample**

Population is all of subject in research that before founding from the interesting researcher in area that occupy the subject. The all of subject that stay in occupy of research that is population. The populations of this research are all of second grade at MTsN Bandung Tulungagung, there are nine classes, class A-I.

In research, all of subject is called population but some of the subject that needed the researcher it is called sample. Sample is a part or representative of population that will be research. Sampling is technique to select the sample which used purposive sampling technique. The research took VIII D to be a sample of second grade of MTsN Bandung. The researcher took this class because suggestion from the teacher after

interview. The teacher suggestion Mnemonic method is appropriate in second grade. She also said that this class was potential to be applied the treatment, it means that this class is homogen or it can called most of them have average ability. In class D there are 39 students consists of 25 girls and 14 boys.

### **C. Research Instrument**

Instrument has important function in research. The researcher need the instrument to collect the data. The instrument is used by the researcher is test. The kinds of the test is vocabulary test. According to Gay (1992: 154) test is a means of measuring the knowledge, skill, feeling, intelegence, or aptitude of sn individal or group. Therefore, test produces numerical score that get from the student and it will be as representative how much student understand the materials received from teacher.

The researcher used two kinds of instrument, they are pre-test and post-test. The aim to do test is to know Mnemonic method is effective or not for the students to learn vocabulary. The material of the test will be taken from English book and other resources to add more vocabularies which related to their subject and based on Junior High School curriculum. In this occasion the researcher uses curriculum K-13 as a reference of making those tests.

Pre-test was arranged before the students were taught by Mnemonic method or before giving treatment. Pre-test is given to know how far the students' ability in vocabulary test before accepts Mnemonic

method or treatment. The kinds of test are multiple choice-test and open ended test, test include 30 questions. Multiple Choice-test involves 20 questions and Open Ended test involves 10 questions.

Post-test was arranged after the students were taught by Mnemonic method after giving treatment. Post-test is given to know the achievement or competence the students' after given treatment. The kinds of test were same with pre-test. It is done to know the difference the score of pre-test and post-test. If the post-test score is high than pre-test, the technique or Mnemonic method is effective to teach vocabulary.

There were some instructions to help students in learning vocabulary by using mnemonic method .for the first The students are given material of new vocabularies that these vocabs is strange for the students. The researcher gives new vocabularies and its meaning, and then explains how to memorize a lot of vocabularies easily by using Mnemonic Method. In this study the researcher used two types of Mnemonic Method. The types were keyword system and rhyme. To apply this method, the researcher use two ways to teach the students. The first way is the students memorize some vocabularies individually and the second way is they memorize the vocabularies by grouping. the researcher asks the students read some vocabularies that have been given loudly. Then they memorize the vocabularies individually by using one of Mnemonic types, that is rhyme. For the second, the researcher gives a command to the students to make five groups consist of 7-8 students. Next they have to memorize

some vocabularies by using one type of mnemonic method that is keyword system

In order to make the test valid the researcher asked two of English experts, they are English lecturer and English teacher to give validation the test. (See Appendix 2 for detailed validation sheet). After the test was valid, the researcher conducted try-out the tests to the second grade students of MTsN 4 Tulungagung, and the score was calculated with SPSS 20 to know the reliability of the test. Then, after the test was reliable the researcher conducted pre-test and post-test for the students, exactly VIII D students as the sample.

#### **D. Validity and Reability Testing**

In quantitative research is always depends on measuring instrument that used in research, to measure the instrument through two concept that must understand when the researcher measuring test. They are validity and reability.

##### **1. Validity**

A test called valid when the test was appropriate with the items that used in learning process. Ary, Jacobes and Sorensen (2010: 224-225) states that validity is the most important consideration in developing and evaluating measuring instruments.

Validity is defined as extent to which scores on a test enable to make meaningful and appropriate interpretations. According to Gay (1992: 154) validity is totally indispensable; there is no quality or virtue of the test

that can compensate for inadequate validity. There are four different types of validity; there are content, construct, concurrent; and predictive. This research measure test to be a good validity by analyzed the test from content validity and construct validity.

a. Content validity is test that only representative or not all subject to be measure. Test content must be seen by the expert that can be covered of all subjects in content area. Gay (1992: 156-157) stated that content validity is the degree to which a test measures an intended content area. A test with good content validity adequately samples the appropriate content area. Content validity is determined by expert judgement. Usually experts in the area covered by test are asked to assess its content validity. So, content validity is appropriate with the instrument that used the researcher because it correspondence between curriculum objectives being accessed.

b. Construct validity is testing that done to measure the behavior of students. Gay (1992: 157) states that construct validity is the degree to which a test measures an intended hypothetical construct. You cannot see a construct, you can only observe its effect. In fact, constructs were “invented” to explain behavior. We cannot prove the exist; we cannot perform, however , do amazingly good job of achievement student scores, their intelligence, etc, but their ability or effect after we give the treatment. In this study the researcher use two kinds of formula in choice test is involves choose the correct answer from a, b, c, d vocabulary answer

choose the correct answer to complete the statement by the vocabularies in a box. Both of them are appropriate for testing vocabulary.

## 2. Reliability

To make the test consistent and dependable, the researcher needs a reliable test. Ary, Jacobes and Sorensen (2010: 224-225) states that reability indicates how consistently a test measures whatever it does measure. The reability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. This quality is essential in any in of measurement (Ary et al, 2010: 236). So, The researcher conducted try out to have the test reliable and to know the test is good or not in using the test to measure students master in vocabulary of this research.

**Table 3.2 The Score of Students Try Out of Pre-test and Post-test on Vocabulary Test**

No	Subject	Pre-test	Post-test
1	ABM	85	85
2	AMR	76	74
3	BP	88	85
4	DNM	85	85
5	DDS	64	64
6	DRA	88	89
7	EK	75	75
8	ESP	76	70
9	HKT	89	89
10	YMN	75	75

The researcher consider the reliability coeficient used test retest where the researcher examines the test twice with the same respondent in the different time. After that the researcher analyzed the correlation of two



score by using Pearson correlation of two scores which is called product moment Pearson. For analyzing the correlation the researcher uses SPSS 20.0 for windows.

**Table 3.3 Reliability Checking**

		<b>Correlations</b>	
		pretest	posttest
pretest	Pearson Correlation	1	<b>,970**</b>
	Sig. (2-tailed)		,000
	N	10	10
posttest	Pearson Correlation	<b>,970**</b>	1
	Sig. (2-tailed)	,000	
	N	10	10

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the correlation analyzing, the researcher got the correlation of two score. The value of correlation is 0,970 it means that correlation of score 1 and 2 very strong and from the explanation above, it was found that this test is reliable.

## **E. Normality and Homogeneity Testing**

### **1. Normality**

The purpose of normality testing is to know the data that used is normal distribution or not. The data was normal distribution used as the representative of population, so why it is important for researcher to get the data. Choyimah (2014:24) stated that the normality of data is important because the data can be considered to represent the population when it is in normal distribution. Thus, the researcher used One-Sample

Kolmogorov-Smirnov method to test normality of data in pretest and posttest by using SPSS 20.0 as follows:

**Table 3.4 Normality Test**

		Pre-test	Post-test
N		39	39
Normal Parameters <sup>a,b</sup>	Mean	70,77	86,05
	Std. Deviation	6,466	6,202
	Absolute	,110	,108
Most Extreme Differences	Positive	,095	,108
	Negative	-,110	-,085
Kolmogorov-Smirnov Z		<b>,688</b>	<b>,677</b>
Asymp. Sig. (2-tailed)		<b>,731</b>	<b>,750</b>

a. Test distribution is Normal.

b. Calculated from data.

Based on the output from SPSS 20.0 above is known that the significance value from pre-test 0,731 and from the post-test is 0,750. Both value from pre-test and post-test are bigger than 0,05. The sig/p value on pre-test is 0,731 and it is bigger than 0,05 ( $0,731 > 0,05$ ). It means that  $H_0$  is accepted and  $H_a$  is rejected and the data is normal distribution. Then, for post-test score, the value of sig/p is 0,750 and that is bigger than 0,05 ( $0,750 > 0,05$ ). It also means that  $H_0$  is accepted and  $H_a$  is rejected and the data is normal distribution. So it can be interpreted that both of data (pre-test and post-test score) are normal distribution.

## 2. Homogeneity Test

Homogeneity testing is intended to make sure that the collected manipulation data in analysis is truly taken from a population which is too different each other. Especially in a correlative study which is predictive, the model which is used must be appropriate with the compotition and its distribution (sujianto: 112). To know the normality, the researcher used one way annova with SPSS. The result can be seen in the table below.

**Table 3.5 Homogeneity Test**

### Test of Homogeneity of Variances

VAR00001

Levene Statistic	df1	df2	Sig.
,118	1	76	,733

Based on the output from table 3.5 above there were known that the significance value from the table was 0,733. That value was higher than 0.05 ( $\alpha = 5\%$ ). It means that  $H_0$  was accepted or the instrument was homogeneous.

## F. Data Collecting Method

Data collecting method is the method to obtain data. Data of this research is collected by administering test. To measure how far the ability of object, the researcher must use test (Arikunto. 2013: 266). The data in this research is students score of vocabulary test. Because this research is quantitative design, so the data are in the form of number. In order to get the good quality of data, the researcher must choose the good instrument

that used in research. the instruments of the test are Multiple Choice-test and Matching test. This test give twice and the technique of collecting data is clarified as follows:

### **1. Pretest**

Pre test is given before the students get the treatment by using Mnemonic Method. . It is done before treatment process by using Mnemonic Method. This test given by students is to know their basic competence before applying the treatment. Pretest was given to the students at the first meeting on April 17<sup>th</sup> 2018. This test followed by 39 students and conducting 40 minutes for allocated times. The Multiple Choice test includes 20 number and Open Ended Test includes 10 number.

### **2. Posttest**

Post-test is given after the students get the treatment by using Mnemonic Method. This test followed by 39 students and conducting 40 minutes for allocated times. The test includes multiple chooice test and Open Ended test. Multiple Choice test includes 20 number and Open Ended test includes 10 number. It was done after treatment process by using Mnemonic test. Posttest was given in the last meeting on April 28<sup>th</sup> 2018. The result of test to know the defferentiate score between pre-test and post-test is any significant or not. If there any differences score, it showed the treatment is successful but if there was no differences score it showed the treatment is unsuccessful.

## **G. Data Analysis**

In this research the researcher use pre-experimental in quantitative research. In this study, pre-experimental are processed by comparing the two test (pre-test and post-test). The first data is data of student score before taught using Mnemonic method (pre-test). The data result is after using Mnemonic method (post-test). If the post test of using Mnemonic method's score test is higher than pre-test, it means that the technique is effective.

To get the student's ability in vocabulary mastery, the researcher is going to give the students a test after get treatment in vocabulary by using Mnemonic method. The test is multiple choice-test and Open Ended test. After the data of pre-test and post-test were collected, the scores of the data were analyzed by using statistical instrument (SPSS) 20.0 especially Paired Sample Test to know the effectiveness of the variable.