CHAPTER III

RESEARCH METHODOLOGY

The chapter discussed the research method used in this study. It covered the presentation of the research design, population and sample, variable, research instruments, validity and reliability testing, normality testing, data collection method, data analysis and hypothesis testing.

A. Research Design

This study conducted pre experimental design. The researcher chose this design to determine the validity of conclusion can be drawn from the study. There are three kinds of experimental research it can be classified as pre-experimental design, true experimental and quasi experimental (Ary et al, 2002:302).

This study used pre-experimental design in the form of one group pre test post test design with quantitative approach. This study is classified as pre experimental design because it has no control variable. In other words, in this study the researcher just puts one group pre test-post test to see the result of the treatment.

In one group pre test-post test design usually involves three steps: (1) administering a pretest measuring the dependent variable, (2) applying the experimental treatment X to the subjects, and (3) administering a posttest, again measuring the dependent variable (Ary et al, 2002:304).

In this study, the procedures of experimental research that use one group pretest-posttest design are:

1) Administering a pretest measuring vocabulary achievement of second grade of MTs Wahid Hasyim Setinggil.
2) Applying the experimental treatment teaching vocabulary by using Anagram technique to the second grade of MTs Wahid Hasyim Setiggil.
3) Administering a posttest measuring vocabulary achievement of second grade of MTs Wahid Hasyim Setinggil.

In the application of experimental treatment is evaluated by comparing the pretest and posttest scores. By comparing scores from the first and second administrations of the test in order to determine what difference the exposure to the technique has did. In this research the significant differences between vocabulary achievements before the students are taught by using anagram technique and after the students are taught by using anagram technique.

B. Population and Sample

Population is a whole research subject that used by researcher. A population is defined as all members of any well-defined class of people, events, or object (Ary et al, 2002:163). The population of this research was all eight grade students of MTs Wahid Hasyim Setinggil in academic year 2015/2016, in which the total of class VIII are two classes.

Sample is part of representative of population that is observed (Arikunto 2006: 130). It means that sample is part of object research which is observed. Ary et al (2006:167) also give the explanation that sample is the small group that is observed. So, sample was part of population which was researched. Sample of this research was the students of the class VIII-B MTs Wahid Hasyim Wonodadi, the total number of the student are 23, it consist of 10 and 13 male.

The term sampling as used in research is purposive sampling. Purposive sampling is considered the certain purpose. The researcher decided to choose VIII B recommended from the teacher because the subjects were homogeny in their skill and many students face some problems in teaching and learning English, especially in their vocabulary. And based on the result of try out testing the score of VIII A is better than VIII B. So, the researcher takes VIII B for this research.

C. Variable

Variable in this research object or something that becomes view point of research. There are two variable in this research, they are:

1) Independent Variable

   Independent variable is variable selected by the researcher to their effect on or influence with dependent variable. Independent variable in this research was Anagram technique.

2) Dependent Variable

Dependent variable is presumed to be influence by independent treatment conditions and any other independent variable. In this study the dependent variable was student's vocabulary mastery.

D. Research Instrument

The researcher used one kind of instrument to do this research, it is vocabulary test. The aim of using test is to know whether students are successful or not in teaching English vocabulary by using anagram. The researcher applies pretest and posttest. Pretest is taken before doing an experimental study or before teaching English vocabulary by using anagram technique. The kinds of test are 10 transpose the letter, then 10 rearrange and gap filling (missing word), and 5 mention word by anagram. After doing pre test and get the result, the researcher doing the treatment, teaching English vocabulary by anagram technique. After doing treatment the researcher conduct posttest, so posttest is taken after doing an experimental study or after teaching English vocabulary by using anagram technique. After the treatment is done, the researcher gave post test to all students. The kinds of test are 10 transpose the letter, then 5 rearrange and gap filling (missing words), and 10 mention other word by anagram. From the result of post test, the researcher wanted to know the students' understanding and remember about the vocabulary that is given after the treatment is done. The result of the test showed that the students' vocabulary mastery increase significantly.

E. Validity and Reliability

1. Validity

The most important principle of language testing is validity. The test should valid test if the researcher wants to test. Heaton (1988:159) in Johnson's book (2001:301) stated validity as the extent to which a test measures what it is supposed to measure and nothing else. According to Muijs (2004: 66) Validity is probably the single most important aspect of the design of any measurement instrument in educational research. So, validity is important consideration in developing and evaluating measuring instrument.

The focus of recent views of validity is not on the instrument itself but on the interpretation and meaning of the scores derived from the instrument (Ary et al, 2010: 225). The researcher used content validity in this research content validity is about actually goes into the test.

a) Content validity

To have content validity test content must be seen as representative of the subject area being covered. The test is made by the researcher based on the course objective in the lesson plan which make by the researcher. Sampling validity which was used to know how well the test samples the total content area or relevant with the purpose of the test based on main competence and basic competence in syllabus Curriculum of 2013 since the school implements the Curriculum of 2013 in the time the researcher

conducted this research. The researcher made vocabulary test which consist transpose letter and mention other word by anagram that were taken from source for the first grade students (B classes) in MTs Wahid Hasyim Wonodadi.

b) Construct Validity

Construct validity is related to our theoretical knowledge of the concept we are want to measure (Muijs, 2004:68). If, a test has construct validity, it is capable of measuring specific characteristic in accordance with a theory of language behavior and learning. The researcher creates the test based on the material which is suitable to the students at the second grade. Then the researcher constructs questions of the test from the simple one to complex one.

2. Reliability

Reliability is the consistency of instrument in producing the same score for an individual repeated testing with different raters. According Muijs (2004: 71) Reliability refers to the extent to which test scores are free of measurement error.

To find out the reliability of the score obtained either from the pre-test or post-test, the researcher calculated two sets of score to get the correlation between them. The formula to find the correlation was Pearson product-Moment in IBM

SPSS statistic 16. Table 3.1 shows the result of the try-out of pre-test and post-test, and followed by table 3.2 showing the statistical calculation of Pearson Product Moment from IBM SPSS statistic 16.

Table 3.1 the try-out's result of pre-test

No	Name	Pre-test 1	Pre-test 2
1	Am	80	86
2	Ba	72	78
3	Ar	70	70
4	Iy	78	76
5	Kh	75	70
6	Ri	66	69
7	Re	62	60
8	Da	70	65
9	Dwi	64	70
10	Ds	80	80

Table 3.2 Statistical correlation of Pearson Product Moment from IBM SPSS statistic 16

Correlations

		Pre-test1	Pre-test2
Pre-test1	Pearson Correlation	1	.822**
	Sig. (2-tailed)		.003
	N	10	10
Pre-test2	Pearson Correlation	.822**	1
	Sig. (2-tailed)	.003	
	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 0.822 it means that correlation of pretest1 and pretest2 is strong and from the explanation above, it was found that this test is reliable. So, it concluded that be instrument in pre test and post test were reliable.

F. Normality Testing

Normality test are used to determine whether a data set is well modeled by a normal distribution or not, or to compute how Normality testing is used to know whether the instrument has normality or not. Normality intended to show that the sample data come from a normally distributed population. To find the normality of the instrument, the researcher used one sample Kolmogrov Smirnov with SPSS.16.

The instrument can be called as has normality if Asymp sig > 0.05 so that Ho (null hypothesis) is accepted and Ha (alternative hypothesis) is rejected. It was also can be concluded as follow:

Ho : The data is in normal distribution

Ha : The data is not in normal distribution

Here, the result of normality instrument computed by using SPSS 16,0 version. It can be seen as follow:

Table 3.3: Table Normality Using One Sample Kolmogrov Smirnov

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		23
Normal Parameters[a]	Mean	.0000000
	Std. Deviation	5.92678729
Most Extreme Differences	Absolute	.105
	Positive	.075
	Negative	-.105
Kolmogorov-Smirnov Z		.503
Asymp. Sig. (2-tailed)		.962

a. Test distribution is Normal.

Based on the output of the above, it was known that the significant value is 0.962. While, to fulfill the provision of normal distribution is if the significance value or probability > 0.05 (Widiyana, 2012) . In fact, the result of normality testing is gather than 0.05 (0.962 > 0.05). So, it can be concluded that the data that has been tested has normal distribution.

G. Data collecting method

Data collection method is the way used by researcher to collect the data. There are some methods in collecting the data to complete the researcher design. Muijs (2004: 41) state that "data collecting is the next phase and another one where

problems can occur in survey studies". The aim of the data collecting in conducting a scientific research was to get the materials needed. The materials must relate to each other and to solve the problem. There was method of data collection used in this research. It was administering test. The test which is given is vocabulary testing in the form of pre test and post test. The pre test is given to the students before the researcher do a treatment. While post test is given to the students after the researcher do a post test and get the treatment. Then, the result of test would be compared between pretest and posttest score weather differences or not. If there any differences score, it showed that treatment was successful and if there was no differences score, it showed that treatment was unsuccessful.

1. **Pre-Test**

Pretest was given before doing an experimental research or before teaching by using Anagram technique or before the treatment. Pretest was used to know the basic competence of the student. The researcher will give the test that contains twenty five items and consists of three kinds. The first kind is transposes the letter that contains 10 items. Second is re-arrange and gap filling that contains of 10 items. Third is mention word by anagram the word that contains of five items. The numbers of students who took the post-test there were 17 students. Then, the result of the test is students' score. The score obtained were analyzed to determine between pre-test and post-test.

2. **Post Test**

After the treatment, post-test will give to the students. The test items in the post-test are almost same between pre-test. The post test is done to see final score and to know the different of the students' score before get the treatment and after they get the treatment. The goal of this test is to measure students' vocabulary after being taught using Anagram technique. The researcher gave the test that contains twenty five items and consists of 3 kinds. The first kind is transpose letter that contains 10 items. Second rearrange and gap filling that contains of five items. And the last is mention word by anagram that contains of 10 items. The numbers of students who took the post-test there were 17 students.

H. Data Analysis

In managing and analysis quantitative data collected from the research, the researcher used quantitative data analysis by using statistical program. The quantitative data analysis was used to know the student's achievement in vocabulary after using anagram technique in teaching vocabulary. The researcher conducted test to the student before and after they were taught by using anagram technique. Here the researcher use t-test formula to analyze the data to know the students test result which are conducted before and after using anagram technique. Consequently, in this case the researcher calculates the t-test using SPSS 16.0 program.

I. Hypothesis Testing

The hypothesis of this research was as follows:

1) If T-Test score is bigger than T-table, null hypothesis (Ho) is rejected. It means that there is any difference score to second grade before using mind mapping technique and after using mind mapping technique. The difference is significant.

2) If T-Test score is smaller than T-table, the null hypothesis (Ho) is accepted. It means that there is no different score to second grade before using mind mapping technique and after using mind mapping technique. The difference is not significant.