CHAPTER III

METHODOLOGY

This chapter presents the procedures used in conducting the research. It covers: research design, population and sample, research instrument, validity and reliability, content validity, data collection and data analysis.

3.1 Research Design

The research design of the study is quantitative research analysis. Technical analysis is one of quantitative analysis or statistical analysis, a technique that can be used to test hypothesis about the score of two variables after getting tests. The statistical analysis is important to answer the hypothesis, and to calculate the data the null hypothesis is needed. In this study the level of significant is on 5% level (0, 05), it used because this study is a social study.

The researcher classified this study as correlation study. According to Donald Ary (2006:351) correlation research method are used to assess the relationship and pattern of relationship among variable in single group of subject. In this research the researcher uses correlation method because to answer the relationship between vocabulary mastery and reading comprehension. The concept of correlation is which concerned with the study of systematic relationship between two or more variables and attempted to answer question (Brown, 2001:143). In this study the researcher does not give any treatment to the subject of research but the researcher just collect the data based on the knowledge of the subject.

3.2 Population and Sample

In doing a test the population is needed as a subject, it is important for the researcher to decide the population before doing the test. According to Singh (2007:88) population is all groups of subject which samples are taken from measurement. In this research the populations are the students of junior high school at 8^{th} grade in Mts Al-Ibrohimi who consist of five classes, they are VIII A, VIII, B, VIII C, VIII D, and VIII E. for each class has different number of the students, it is for about 25 until 30 students.

After getting the population, it is important to select the students as sample. According to Singh (2007:88) Sample is a target respondent selected from the population. In selecting sample, there are four techniques used in education research, they are random, stratified, cluster, and systematic sampling. In this research, the process of taking sample is cluster sampling. According to Donald Ary (2006:134) cluster sampling is the chosen unit and not an individual but a group of individuals who are naturally together.

The researcher uses cluster sampling because the researcher wants to take the sample based on the group of class, and the total classes in the eighth grade of Mts Al-Ibrohimi are five classes. The way to take cluster sampling is the researcher takes the class based on the score of the students in middle test to know the ability of the students. After getting the score, the researcher finds three classes who have the same mean, they are A, B, and D. The researcher takes VIII B and VIII D as the sample and for VIII A it will take to do the try out, so the total numbers of the sample are 52 students.

3.3 Research Instrument

Research instrument is the tool to collect the data. According to Arifin (2008:109-116), there are some research instruments, those are: test, questionnaire, observation, interview, and documentation. In this study the researcher use test as instrument to get the data about vocabulary mastery and comprehension. In vocabulary the researcher uses cloze test and for comprehensions it use multiple choice test.

3.3.1 Test Vocabulary

Vocabulary test is use to measure the vocabulary mastery of the students. To do the test the researcher chooses cloze test as the tool to measure the students' ability in vocabulary. Cloze test is often used by the teacher to improve reading ability of the students, although there are many kinds of tests that can be used but cloze test is the most accurately to measure the result. As we know that cloze test is the most efficient test to measure the student's ability, especially in reading. According Steinman (2002:293-294) there are two types in cloze test according to deletion rate, those are random cloze and rational cloze. In this research, the researcher uses rational cloze test. In rational cloze test, there are specific types of word is delete according to linguistic principle such as, nouns, adjectives, and verbs.

In vocabulary test the researcher chooses one topic to do the test, and it is about "descriptive text" which appropriate at the first semester. In this test the researcher gives a descriptive text, and then it will delete certain words according to the word classes in vocabulary such as verb, noun, and adjective. The students have

to fill the blanks with the appropriate words, they can choose the answer on the contextual clues provide in the passage.

3.3.2 Test Reading Comprehension

Test is the most important aspects of the teaching learning process. It used to measure the students' ability. In comprehension test, the researcher uses descriptive text which is based on the syllabus at the first semester. In comprehension test the researcher used multiple choice test because Multiple choices is kind of the test that often used in teaching learning, and it can be used to test all levels of learning from knowledge to evaluation. Multiple choice tests, the students can be easy to answer the question directly by choosing the option. Therefore, it can be very useful for helping the students to know their strength and weakness. To conduct comprehension tests, the researcher uses multiple choice tests in order that can be easily to analyze and accurately scored by person or machine.

The question in multiple choice tests based on the indicators in the syllabus at first semester**.** The researcher just takes two indicators to determine the question of comprehension test. For each item consist of four options, and the students have to choose both of them. To measure students' ability in comprehension, it is important to know the component in comprehension. The firs is main idea of the descriptive text, it usually call the implicit meaning. In implicit meaning the students cannot find the answer directly from the text but they have to comprehend the text first, then they can answer the question based on the information from the text. The second is textual meaning of descriptive text and it calls explicit meaning, the students can find the

answer directly from the text. The researcher uses multiple choices because it can measure students' comprehension skill by giving some question about the information that they get from the text, not only about implicit meaning but also about explicit meaning

3.4 Validity and Reliability

It is important to make sure that the question has been try out, in order that to certain their validity and reliability (Lucantoni, 2007:60). In this study the researcher does the try-out in Mts. Al-Ibrohimi, and the researcher takes VIII A to conduct the try out. The writer use content validity for all tests, it used because the content of the items are based on the syllabus at the first semester. According to Azwar (2008:46) content validity includes any validity strategies that focus on the content of the text. The content validity of the English test based on the syllabus of the first semester.

3.4.1 Content Validity of the Two Tests

In vocabulary test there are 20 items that will be try-out. The content of the test is about adjective, noun, and verb. Here some indicators in every items.

Items	Indicators
3, 9, 15, 18	Adjective
1, 2, 4, 5, 8, 10, 12, 13, 14, 17, 19, 20	Noun
6, 7, 11, 16	Verb

The researcher makes 30 items to do the try out in Comprehension test, and it is based on the syllabus of the school in the first semester.

Standard competence	Basic competence	Indicators	Items
5.Memahami makna teks tulis fungsional dan esei pendek sederhana berbentuk *descriptive* dan *recount* yang berkaitan dengan lingkungan sekitar	Merespon makna dan langkah retorika dalam esai pendek sederhana secara akurat, lancar dan berterima yang berkaitan dengan lingkungan sekitar dalam teks berbentuk descriptive	• Makna gagasan • Makna tekstual dalam teks descriptive	1,9, 6, 11, 21, 25 3, 4, 5, 7, 8, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 26, 27, 28, 29, 30

3.4.2 Scale of Validity and Reliability

3.4.2.1 Scale Validity and Reliability of Reading Comprehension

The first try out is reading comprehension, after doing the tryout the researcher calculates the result of tryout by using SPSS 15.00 to know the validity in every items. Based on the result of validity, the researcher has two ways to determine the validity items. The first, the researcher sees *Corrected Item-Total Correlation* column, the item which has the score under 0.3 is considered as bad item, it means that it must be discarded. If the score above 0.3 is considered good item, it means that the item is accepted. The second, the researcher sees the *Cronbach's Alpha if Item Deleted* column, if the score higher than the overall *Cronbach's Alpha*, it means that the item is discarded.

The result of the test there are 22 items that were valid or accepted and 8 items were rejected. The analysis of validity has shows in the appendix. The results

showed that the spread of aspect was balance. The writer did not need to do try out again because the condition was balance. The valid items were:

Items accepted	Items discarded
1,2,3,4,9,10,11,12,14,15,16,17,18,19 20,21,22,23,24,25,26,30	5,6,7,8,13,27,28,29

The researcher determines the reliability of the test by seeing *Cronbach's Alpha* column. There are some criterion of reliability, they are:

$0.0 \leq rkk < 0.20$ is the lowest reliability

$0.20 \leq rkk < 0.40$ is the low reliability

$0.40 \leq rkk < 0.60$ is the quite reliability

$0.60 \leq rkk < 0.80$ is the high reliability

$0.80 \leq rkk < 1.00$ is the highest reliability

The score of Cronbach's Alpha in comprehension try out is 0,824. It means that it is the highest reliability.

3.4.2.2 Scale Validity and Reliability of Vocabulary Mastery

The second try out is vocabulary mastery, there are 20 items was taken in the trout. The researcher calculates the result of tryout by using SPSS 15.00, to know the items were valid or not, the researcher sees the score in *Corrected Item-Total Correlation* column. The score is discarded if the score under 0.30 and the score is accepted if the score above 0.30. Besides that, the researcher also sees the *Cronbach's Alpha if Item Deleted* column to determine the validity of items. If the

score of *Cronbach's Alpha if Item Deleted* higher than score of *Alpha Cronbach's* it means that the item is discarded.

The results of the test shown that there are 16 items were valid or accepted and 4 items were rejected, after knowing the result of try out, the researcher will not do the try out again because it is enough to take the items. However the result shown that the condition was balance.

Items accepted	Items discarded
2,4,5,6,7,8,9,10,11,12,13,14,16,17,19,20	1, 3, 15, 18

The researcher determines the reliability of the test by seeing *Cronbach's Alpha* score. The score is 0.868 it means that it is highest reliability.

3.5 Data Collection

The procedures to collect the data:

1. Preparing the test based on the syllabus at first semester and curriculum on 8th grade
2. Making comprehension test that consist of 30 items
3. Making vocabulary test consist of 20 items
4. Do try out to know the validity and reliability of the test
5. Testing the test to the students
6. Calculating the data by using SPSS 15.00.
7. Analyzing the data.

3.6 Data Analysis

After getting the result of the test, the researcher calculates the data by using SPSS 15.00. To measure the data researcher uses correlation statistic because it use to calculate the ratio or interval data. Beside that the researcher wants to know the significant correlation between two variables.

The researcher uses the correlation method, with the analysis of Pearson correlation coefficient according to Karl Pearson. According to Best (1981), the degree of relationship between two or more variables can be represented quantitatively by the coefficients of the correlation, if the correlation coefficient between two or more variable is +1, 00 it showed that those variables have perfect positive correlation. Perfect positive correlation means that for every unit increase in one variable there is a proportional unit increase in the other. Then, -1, 00 of correlation coefficients indicates that there is perfect negative correlation between two or more variables.

In this study, a correlation procedure is established as the statistical technique to define the relationships between variables, while the degree of relationship is measured by the coefficient of correlation. According to (Sudjiono, 1997:95), there are some criteria to define the degree of relationship between two or more variables based on the value of coefficient of correlation.

To determine how strong the relationship between variables is by using the correlation meaning below:

0,200 – 0,400 : Low

0,400 – 0,600 : Medium

0,600 – 0,800 : High

0,800 – 1,000 : Very High

The formula for the Pearson correlation coefficient is as follows:

$$r = \frac{\Sigma XY - \frac{(\Sigma X)(\Sigma Y)}{n}}{\sqrt{\left(\Sigma X^2 - \frac{(\Sigma X)^2}{n}\right)\left(\Sigma Y^2 - \frac{(\Sigma Y)^2}{n}\right)}}$$

r = correlation coefficient

n = number of sample

Σ XY = the sum of the multiplication between variable X score and variable Y score

ΣX^2 = the sum of standard deviation from variable X

ΣY^2 = the sum of standard deviation from variable Y

The hypothesis testing of this research is as follow:

Ho : There is no correlation between variable X and variable Y

Ha : There is correlation between variable X and variable Y

The guideline that used to determine whether the hypothesis is accepted and rejected

Ho with α = 0.05 is Ho cannot be rejected if $p > (\alpha)$ and Ho can be rejected if $p < (\alpha)$.