CHAPTER III

THE RESEARCH METHODOLOGY

A. The Research Design

The design of this research was a correlational research. According to Anderson and Arsenault (2005:118), correlational research is "one way of describing in quantitative terms the degree to which the variables are related." The purpose of correlative study is to determine the relationship between variables or to use these relationships to make predictions, Gay (2003:189).

There were two variables in this research. Firstly, the students' knowledge of derivational words as the independent variable (symbolized by X) and the students' vocabulary mastery as the dependent variable (symbolized by Y). The design of this research can be drawn as follows:

Figure III. 1 The Designs of The Research

B. The Location and Time of the Research

This research was conducted from July to september 2016 in 2016/ 2017 of academic year at MA Darel Hikmah Pekanbaru. It was located at Manyar Sakti Street Km. 12, Panam, Pekanbaru.

C. The Subject and the Object of The Research

1. The Subject

The subject of this research was the second grade students of MA Darel Hikmah Pekanbaru.

2. The object

The object of this research was the correlation between students' knowledge of derivational words and their knowledge of vocabulary.

D. The Population and the Sample of the Research

The population of this research was the second grade students of MA Darel Hikmah Pekanbaru that consisted 157 students which were divided into five classes. the population was large enough to be all taken as sample of the research. Arikunto (2006:134) states that if the population is under 100, the researcher could take all them, and if the population was more than 100, the researcher could take 10%-15% or 20%-25% as a sample.

The technique used in this research was random sampling technique. the student in this population was homogenous, the researcher took the sample for each class. As Arikunto (2006:132) says that "research sample can be conducted if the subject is true homogenous population." There were 40 students as sample in this research, in which the researcher took 25% from each class or 8 students from each class. it is the following table of the population and sample.

Table III. 1
Population And Sample

No	Class	Total	
		Population	Sample
1	XI IPA 1	32	8
2	XI IPA 2	31	8
3	XI IPS 1	31	8
4	XI IPS 2	31	8
5	XI AGAMA	32	8
TOTAL		157	40

E. The Technique of Data Collection

In collecting the data the researcher used a test as an instrument. There were two kinds of the test, namely derivational word's knowledge test for variable X and vocabulary test for variable Y.

1. Derivational word's Knowledge Test

The researcher designed a test to know the students' knowledge of derivational, namely derivational word's knowledge test. The kind of this test was multiple-choice questions. There were 15 items that had to be answered by the students. In this test, the researcher asked the students to match a suitable Derivational Word in a sentence.

Table III. 2
The Blue Print of Derivational Words' Knowledge Test

No.	Indicators	Number of items
1	The students' ability to use noun derived from nouns or member of other word classes	1,2,3,4,5
2	The students' ability to use Adjective derived from adjectives or member of other word classes.	6,7,8,9,10
3	The students' ability to use Verb derived from verbs or member of other word classes	11,12,13,14,15
	Total	15

After doing the tests, the researcher then analyzed the total score from the result of the test. According to Arikunto (2007:245) score of the students can be analyzed through a table of classified score. So, the score of students was classified as follows:

Table III. 3
The Classification Score

No.	Scores	Categories
1.	80-100	Very good
2.	66-79	Good
3.	56-65	Enough
4.	40-55	Less
5.	0-39	Fail

2. Vocabulary Test

The researcher used this test to get the data of the students' knowledge vocabulary at MA Darel Hikmah.there was multiple choice questions. The researcher asked them to read each text which had some words added by derivation word on it. Then, they had to choose a,b,c or d, for the appropriate answers suitable for each questions. There were 20 items in multiple choice question.

Table III. 4
The Blue Print of Vocabulary

No.	Indicator	Number of Items
1.	The students' ability to establish the meaning of word.	1,8,9,10,13
2.	The students' ability to choose the meaning relationship (antonym and synonym)	7,11,12,14,15
3.	The students' ability to classify and enrich the meaning or word.	2,3,4,5,6
4.	The students' ability to determine the appropriate of expressive vocabulary.	16,17,18,19,20
	Total	20

After doing the tests, the researcher then analyzed the total score from the result of the test. According to Arikunto (2007:245) score of the students can be analyzed through a table of classified score. So, the score of students was classified as follows:

Table III.5
The Classified of Score

No.	Scores	Categories
1.	80-100	Very good
2.	66-79	Good
3.	56-65	Enough
4.	40-55	Less
5.	0-39	Fail

3. Validity of The Test

Before the test was given to the sample of this research, the researcher tried out the test item. The test given to the students was considered not to difficult or not to easy. The purpose of the try out was to obtain validity and reliability of the test. According to Hughes (1989:22) the test is said to be valid if it measures accurately what is intended to measure. In this research the researcher used content validity. Furthermore, Hughes (1989:22) said that a test is said to have content validity if its content constitutes a representative sample of the language skill, structure, etc, with which it is meant to be concerned. It means that the test given to the students was based on the material that they had learned. It was determined by finding the difficulty level of each item.

a. Validity of Derivational Words test

Arikunto (2009:208) said that the easy or difficulty level of each item can be determined by following formula

$$P = \frac{B}{JS}$$

Where:

P : Index of difficulty

B : The number of correct answer

JS : The number of students taking test

Furthermore, Arikunto (2007:210) stated that the standard level of difficulty used is > 0.30 and < 0.70. It means that the items are accepted if the level of difficulty is between 0.30 - 0.70, and it is rejected if the level of difficulty is below 0.30 (difficult) and over 0.70 (easy). Then, the proportion is represented by "P", whereas the proportion incorrect is represented by "q".It can be seen from the following tables:

Table III.6
The Analysis of Derivational words Test Validity

No	r count	Status
1	0.67	Valid
2	0.67	Valid
3	0.67	Valid
4	0.38	Valid
5	0.67	Valid
6	0.62	Valid
7	0.67	Valid
8	0.48	Valid
9	0.57	Valid
10	0.67	Valid
11	0.67	Valid
12	0.67	Valid
13	0.57	Valid
14	0.43	Valid
15	0.43	Valid

b. Validity of vocabulary test

The test used to the students' vocabulary should be valid and realible. The test can be valid if it measures accurately whether the test is appropriate, meaningful, and useful (Hughes, 2003). In this research, the researcher used content validity to know the validity of vocabulary

test. According to brown (2003) content validity is partly a matter of determining if the content that the instruments contains is an adequate sample of the domainof content it is supposed to represent. Thus, the test was given based on material studied by the students.

Table III.7
The Analysis of vocabulary Test Validity

No	r count	Status
1	0.67	Valid
2	0.67	Valid
3	0.67	Valid
4	0.38	Valid
5	0.67	Valid
6	0.62	Valid
7	0.67	Valid
8	0.48	Valid
9	0.57	Valid
10	0.67	Valid
11	0.67	Valid
12	0.67	Valid
13	0.57	Valid
14	0.43	Valid
15	0.43	Valid
16	0.57	Valid
17	0.52	Valid
18	0.67	Valid
19	0.33	Valid
20	0.67	Valid

4. Reliability of the Test

Reliability has to do with accuracy of measurement. Reliability in test refers to consistency if the instrument used repeatedly for different occasion or with different instruments or by different person. According to Creswell (2008, p.159), internal consistency reliability is the instrument administered once, using one version of the instrument and each

participant in the study completes the instrument. The instrument is reliable if:

1) *Alpha Cronbach* > r_{table} at the level significance of 5%, it means that the instrument is reliable.
2) *Alpha Cronbach* < r_{table} at the level significance of 5%, it means that the instrument is not reliable.

The following table is the level of the reliability of the test:

Table III.8
The Level of Reliability

No	Reliability	Level of Reliability
1	0.0 – 0.20	Very Low
2	0.21 – 0.40	Low
3	0.41 – 0.60	Moderate
4	0.61 – 0.80	High
5	0.81-1.00	Very High

(Arikunto, 2003)

a. Reliability of Derivational Words Test

To obtain the reliability of the questionnaire given, the writer used SPSS 16.0 program to find out whether the questionnaire was reliable or not.

Table III.9
Cronbach Alpha Table

Reliability Statistics

Cronbach's Alpha	N of Items
.913	15

From the table above, it can be seen that the value of Cronbach's alpha is 0.913. The value of internal consistency was 0.913 ≥ 0.81, so the reliability of questionnaire was very highly reliable.

b. Reliability of vocabulary Test

To obtain the reliability of the multiple choices test given, the writer used SPSS 16.0 program to find out whether the test was reliable or not.

Table III.10
Cronbach Alpha Table

Reliability Statistics

Cronbach's Alpha	N of Items
.966	20

From the table above, it can be seen that the value of cronbach's alpha is that 0.966. Then, the researcher compared r_{11} to r_t. The r_{11} = 0.966 was higher than r_t at significant level 5%, is 0.553 and at 1% level of significance was 0.684 where r_t (dk= N-2 = 13). It means that the items were reliable, in which the value of internal consistency was 0.966 > 0.553, so the reliability of vocabularu test was acceptable.

F. The Technique of Data Analysis

The independent variable (X) and dependent variable (Y) are the two variables correlated. In analyzing the data, the researcher chose the product moment correlation as the formula because the data of the two variables above were in interval form because the researcher used the score of questionnaire of variable X and score of variable Y. According to Hartono, (2007:167) if the variables are connected in interval form and the spread of the data is normal distribution, so the suitable formula is product moment correlation. In analyzing the data of students' knowledge of derivational words and their vocabulary, the researcher analyzed it statistically.

Then, to find out whether there is correlation between students' knowledge of derivational words and their vocabulary, the researcher used the Pearson Product-Moment Correlation Coefficient (r) by using SPSS 20 program. Pallant (2010:129) states that if the significance 2-tailed value is bigger than 0.05 ($p>0.05$) this indicates that there is no violation of the assumption of equality of variance and that equal variances are assumed for the variable concerned. Then, if the significance 2-tailed value is smaller than 0.05 ($p<0.05$) this indicates that there is violation of the assumption of equality of variance and that equal variances are assumed for the variable concerned In the process of data analysis, the researcher used the SPSS (statistical package for the society science) program 16.0 (Hartono, 2008:53).

Then, to determine the level of correlation between two variables, the following categories from Hartono (2008:80) were used:

Table III. 11
The Interpretation of Correlation Coefficient

No	Coefficient Interval	Level of Correlation
1	0.00-0.200	Very Low
2	0.200-0.400	Low
3	0.400-0.700	Medium
4	0.700-0.900	Strong
5	0.900-1.000	Very Strong

To find out the effect size of the two variables. According to Pallants(2010:21) the formula was used as follows:

Table III. 12
The Formula of Coofecient Effect

Coofecient effect $=r^2$ x 100% r = pearson correlation