

## **CHAPTER III**

### **METHOD OF THE RESEARCH**

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

This is quantitative study because it is a means for testing objective theories by examining the relationship among variables (Creswell, 2008, p.145). Furthermore, in conducting the research, the researcher uses correlation method. Correlation method is the relationship between two or more variable (Murdan, 2006, p. 133). That is in order to investigate the correlation between English learners' aptitude and their vocabulary mastery. The Correlation method is most appropriate for this study, because it uses two variabls to find out the relationship between English learners' aptitude and their vocabulary mastery. It will show if they have any positive or negative relationship and examining hypothesis.

After that, Pearson Product Moment formula is used to correlate two variables and to find out the significance correlation between English learners' aptitude and their vocabulary mastery. The independent variable of this research is English learners' aptitude (variable X) and the students' vocabulary mastery is the dependent variable (variable Y).

#### **B. Research Setting**

This research is at English Department of Tarbiyah and Teachers Training Faculty in IAIN Antasari Banjarmasin on Jl. Jendral Ahmad Yani, Km. 4.5. The research was conducted in 02<sup>nd</sup> November – 02<sup>nd</sup> January 2016.

### C. Population and Sample

Population is all cases, situations or individuals who share one or more characteristics. According to Sugiyono (2008, p. 117), population is generalizations that composed of the subject or object that has certain qualities and characteristics of the applied researcher to learn and then be concluded. Population of this research is the third semester students of English Department IAIN Antasari Banjarmasin academic year 2016/2017. Those have 5 classes that is class A, B, C, D and E. The total numbers of them are 169 students as seen the following table.

Table. 3.1 The Population of the Research

No	Class	Population
1	A	34
2	B	37
3	C	36
4	D	35
5	E	30
TOTAL		169

Sample is a subject of a number of people or things, or part of a whole. According to Suharsimi Arikunto (2006, p.51), sample is a part of population which has same characteristics. There are two ways in selecting a sample. First, if

the population is less 100, all population can be sampled. Second, if the population is over 100, the researcher can take 10% - 15% Or 20% - 25% or more. In this research, researcher need to take sample by using proportional random sampling technique. In this research, the researcher will take 25% from third semester students of English Department of IAIN Antasari Banjarmasin academic year 2016/2017 as a sample. So the number of samples in this study is:

$$= 25\% \times 169 \text{ students (population)}$$

$$= 42.3 \text{ students}$$

$$= 42 \text{ students}$$

Based on the formula above, the researcher takes 42 students as the sample of this research which takes 25% of every class.

Table 3.2 The Sample of The Research

No	Class	Population	Sample
1	A	34	8
2	B	37	9
3	C	36	9
4	D	35	9
5	E	30	7
<b>Total</b>		<b>169</b>	<b>42</b>

#### **D. Techniques of Data Collection**

The collect data in this research, the writer uses some techniques which cover:

##### **1. The Modern Language Aptitude Test**

The study used the sample of standardized language aptitude test called the Modern Language Aptitude Test (MLAT) developed by Carroll and Sapon in (1959) as cited in (Winke, 2013, p. 110). The Language Aptitude Test is used to collect the data of students' language aptitude. The sample adopted from the Modern Language Aptitude Test (MLAT) and can be obtained from Language Learning and Testing Foundation website. According to Carroll and Sapon (1959 as cited in Lamia, 2015, p. 4), the test consists of five parts; they are Number Learning (Part I), Phonetic Script (Part II), Spelling Clues (Part III), Words in Sentences (Part IV), and Paired Associate (Part V).

##### **2. Vocabulary Test**

In this study, the vocabulary test is used to collect the data of students' vocabulary mastery. There are 50 questions in the test. The questions based on the syllabus in vocabulary course of English Department in IAIN Antasari Banjarmasin.

## E. Technique of Data Analysis

After collecting data the writer will take some step to analyze the data. The analysis step will as follow.

### a. The Modern Language Aptitude Test

The researcher uses the sample of the test that adopted from The Modern Language Aptitude Test (MLAT) or also called independent variable (X) into the following indicators:

Table 3.4 Indicators of the modern language aptitude test

<b>Indicators</b>	<b>Item Number</b>
Number Learning	1, 2, 3, 4
Phonetic Script	5, 6, 7, 8, 9
Spelling Clues	10, 11, 12, 13, 14
Words in Sentences	15, 16, 17, 18,19
Paired Associates	20, 21, 22, 23, 24, 25
<b>Total</b>	25

There were 25 questions in total. Part I consisted of 4 questions, Part II, Part III and part IV consisted of 5 questions for each part, and the last Part V consisted of 6 questions for each. The samples of this study were expected to answer those questions. Based on Suantika (2014, p. 33), the score of aptitude is ranging 100 point for 25 questions. It means  $100 : 25 = 4$ . It shows the right answer of the test scored 4 point, while the wrong answer scored 0 point.

The researcher determines the learners' language aptitude test generally by applying into the following this formula:

$$M = \frac{\sum X}{N}$$

M = Mean

$\sum M$  = Total score

N = Total number of the students

b. Vocabulary mastery test

While the students vocabulary test is also called dependent variable (Y) are classified into the following criteria. The test consisted of multiple choice tests. The test that consist of alternative answers and the test are 50 questions. Each participant collected 2 point for giving the right answer while the wrong answer caused them in getting no point. So, the total score of 50 items test is  $50 \times 2 = 100$  point. The questions are based on the syllabus in vocabulary course of English Department in IAIN Antasari Banjarmasin which the indicators of the test can be seen on the table:

Table 3.6 Indicators of Vocabulary Mastery

<b>Indicators</b>	<b>Item Number</b>
Word meaning	1, 2, 3, 4, 5, 6, 7, 8, 9
Part of Speech	10, 11, 12, 13, 14, 15, 16, 17, 18
Word and grammar	19, 20, 21, 22, 23, 24, 25, 26, 27

Word formation	28, 29, 30, 31, 32, 33, 34, 35, 36
Collocation	37, 38, 39, 40, 41, 42, 43
Idiom	44, 45, 46, 47, 48, 49, 50
Total	50

Then, the researcher determines the students' English vocabulary test generally by applying into the following this formula:

$$M = \frac{\sum X}{N}$$

$\sum M$  = Total score

N = Total number of the students

After calculating the mean of the students tests result by applying formula above, the researcher classifying the score use the categories which is submitted by Harris (1969) as cited in Mawaddah (2015, p. 39), as follows:

Table 3.7 Categories of Vocabulary Mastery

Score	Category
91 – 100	Excellent
81 – 90	Very good
71 – 80	Good
61 – 70	fair
51 – 60	Poor
Less than 50	Very poor

After the Modern Language Aptitude Test and English vocabulary mastery test are collected. The researcher examines research hypothesis by calculating and correlate the data of X and Y variables. The examination uses *Pearson Product Moment* formula. The formula is as follows :

$$r_{xy} = \frac{N \cdot \sum x \cdot y - (\sum x)(\sum y)}{\sqrt{[(N \cdot \sum x^2 - (\sum x)^2)][(N \cdot \sum y^2 - (\sum y)^2)]}}$$

Explanation:

$r_{xy}$  = Coefficient of correlation between variable x and variable y

N = Total respondent

$\sum x$  = Accumulative score of language aptitude test

$\sum x^2$  = Accumulative square score of language aptitude test

$\sum y$  = Accumulative score of vocabulary test

$\sum y^2$  = Accumulative square score of vocabulary test

$\sum xy$  = Accumulative score of multiplication of variable x and variable y

However, before using the formula, the researcher does normality test and linearity test because these tests are prerequisite in using Pearson product moment formula. Normality test is done to determine normal distribution and linearity test is used to know the relation between dependent and independent variable. In doing normality test and linearity, the researcher uses SPSS version 23.

The criteria in determining normal distribution of the data are as follows:

- a. A normal distribution of data, if the value of significance > 0.05



- b. An abnormal distribution of data, if the value of significance  $< 0.05$

The criteria in determining the linearity of the variables are as follows:

- a. If the value of significance  $> 0.05$ . It means that the variables are linear  
 b. If the value of significance  $< 0.05$ . It means that the variables are linear

Then, the researcher interprets the value of  $r_{xy}$  by comparing it with  $r_t$  with significant value 0,05. Before that, the researcher determine the degree of freedom by using this formula :

$$df = N - nr$$

Explanation:

df = degree of freedom

N = Total respondent

nr = Total variable

Criteria in testing the hypotheses:

- If  $r_{xy} > r_t$  means there is a significant correlation and  $H_a$  is accepted,  $H_o$  is rejected.
- If  $r_{xy} < r_t$  means there is no significant correlation and  $H_a$  is rejected,  $H_o$  is accepted.

Then, the researcher interprets the value of  $r_{xy}$  by comparing it with  $r_t$  with significant value 0.05. The result of correlation between X and Y variables will be compared with the value ( $r_{table}$ ). The table value is 5% Or 1%. If  $r_{xy} > r_{table}$  is significant or there is a correlation between the students' language aptitude test and their vocabulary mastery. If  $r_{xy} < r_{table}$  is not significant. It means that there is no correlation between the learners' language aptitude test and their vocabulary

mastery. A positive correlation indicates that the score move together either increasing or decreasing. A negative correlation indicates that the score on one variable rise and scores on other decrease. Correlation does not imply caution means two events are in some ways correlated does not mean that on necessarily cause the other. The ranging of correlation coefficient is as follow (*Sudijono, 2006, p.193*):

Table 3.8 The ranging of correlation coefficient

$r_{xy}$	<b>Interpretation</b>
0.00 – 0.20	There is a very low correlation between variable X and Y
0.20 – 0.40	There is a low correlation between variable X and Y
0.40 – 0.70	There is a medium correlation between variable X and Y
0.70 – 0.90	There is a high correlation between variable X and Y
0.90 – 1.00	There is very high correlation between variable X and Y