CHAPTER III

RESEARCH METHODOLOGY

In this point,the researher would like to present research design , subject of the reseacrh , variables ,instrument, technique of data collection and technique of data analysis.

3.1.Research design

In this research , the researcher used quantitave research. Sugiyono (2016:8) stated that Quantitative research is a research method that are based on the philosophy of positivism to examine the problem , using a data collection instrument , quantitative data analysis or statistic in order to test the hypothesis. Based on the research question that would be investigated, this research used correlation study as the research design. As Arikunto (2007:234) explained that the correlation study is used in the research since it is intended to investigate the correlation between the variables. In correlation study the researcher used correlation statistical test to measure the degree of two variables. The researcher did not control or manipulate the variables ,instead using correlation statistic two or more for each subject.Here is the design of correlation study as follow :

X ⟶ Y

X : Morphological Awareness

Y : Vocabulary Mastery (Sugiyono , 216 p. 42)

3.2. Subject of the research

Population is generalization area that consist of objects or subject who have certain quality and characteristics which is decided by researcher(Sugiyono, 2016:117).

The population of this research was the fifth semester students of English Language Education study program Islamic University of Nahdlatul Ulama in academic year 2020/2021. There were two classes that found in fifth semester student of English Education study program. Total number of fifth English Education Program study is 54 students.

Table 3.1 The Total Subject of The Research

No.	Class	The number of students
1	5 PBI A1	27
2	5 PBI A2	27
Total		54

3.2.Research Variables

Hadi (1989:224) explained that varaible is some indication that indicate variation , in the kind or in level. In order to assess the relationship between variables , they must be identified. In this research there are two variables,those are independet variable and dependent variable. Independent variable is something that choose by the researcher to assess the possible effects on one or more variables (Mubarak, 2015:89). Independent variable on this research was Morphological awareness. Mubarak (2015:89) explained that dependent variable is a variable that presummed to affect the independent variable. In this research, dependent variable was vocabulary mastery.

3.3. Instrument

The research instrumnet is a device that use to mreasure natural and phenomena observed (Sugiyono, 2016:117). The instrument of this research was test. There were two kind of test **:**

1. Morphological Awareness Test

   The Morphological awareness test was adopted from Chang et al. (2005) that appllied to measure the students' ability to understand the morphemic units in English. This test was used measure the analytic as well as syntentic aspect of word formation. The test consists of two part : A morpheme identification awareness test and a morphem categories test , which discuss below :

a. Morpheme identification test

The morpheme identification used to determine participants' ability to analyze and break down the complex words into smaller meanings. The tests asked participants to break down these complex words into smaller meanings. No time limit is set for the test. The participant were given the a set of complex word and they are asked to segment them into smaller maening as they can identify in each word. This is the blueprint of the test that researrcher will use for morphological identification test :

Table 3.2 Blueprint of Morpheme Identification Test

No.	Indicator	Question Number	Kind of question
1.	The students are able to break down the complex word into meaningful chunck	1-10	Essay

b. Morphem Categories Test

The morphological categories test used to measure the participants' ability to analyze morpheme and the participant were asked to categorize a complex word into part of speech (noun, verb, adverb or adjective). The participants are examined their knowledge of the lexical and the relations among words. All items

in the test contains complex word. The participants were given many complex word then the participants were asked to categorize into verb,noun , adjective or adverb. Each word in a test receives one point and maximal point in 28 points. This is the blueprint of the morphological structure:

Tabel 3.3. Blueprint Of Morphem Categories Test

No.	Indicator	Question Number	Kind of question
1.	The students are able to categoroze the complex word into right part of speech	1-27	Close test

2. Vocabulary Level Test (VLT)

Vocabulary Levels Test was administrated to determine participants' vocabulary knowledge. The test was chosen because it had been commonly used by other studies and it is easier to administer, score and intrepret. There were five frequency leves, those are 2000-word level, the 3000-word level, the 5000-word level and 10000-word level and the academic word level (Nation, 2001). Each level has ten item that containing six words and three meaning. The participants need to choose the right word to go with each meaning. The blueprint of vocabulary level test is :

Table 3.4 Blueprint of Vocabulary Level Test

No.	Indicator	Question Number	Kind of question
1.	The students are able to choose the right word to go with each meaning (2000-word level)	1-5	Matching word
2.	The students are able to choose the right word to go with each meaning (3000-word level)	6-10	Matching word
3.	The students are able to choose the right word to go with each meaning (5000-word level)	11-15	Matching word
4.	The students are able to choose the right word to go with each meaning (10000-word level)	16-20	Matching word
5.	The students are able to choose the right word to go with each meaning (academic -word level)	21-25	Matching word

3.4. Validity of the test

a. Validity

Validity means the instrument that may be used to measure what should be measured (Sugiyono 2016, p, 121). Before giving the test to the participants, the researcher used validity content and construct validity. According to Brink & Wood (2008:272), content validity is the qualification or judgement stage, which involves selecting experts to evaluate the content validity of each item and of the scale. It means that the information is consistent with the learning object. The selected experts must have specific criteria for deciding whether the content is relevant to the concept. The expert would be given a structural procedure for evaluating the validity of the instrument is valid.

The researcher also used construct validity, construct validity is concerned with the extent to which an instrument measure concept or construct designed to measure (Brink & Wood, 2008:274). To find validity of the test with the formula:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - (\sum X)^2\}\{N\sum Y^2 - (\sum Y)^2\}}}$$

Note:

r_{xy} : the validity of the item test

N : the total of the students

X : the total of the students who answer correctly

Y : the students' score

(Arikunto, 2013, p. 213)

b. Reliability

Reliability is the requirement to do instrument validity (Widoyoko, 2015, p. 252). To determine the reliability of the test, the researcher used formula of K-R 21. The formula is as follows:

$$r_1 = \frac{\mathrm{k}}{(\mathrm{k}-1)}\left(1 - \frac{M(k-M)}{kV_t}\right)$$

(Sugiyono, 2011, p. 132)

Note:

r_1: reliability instrument

k : the total item of questions

m : mean of the total scores

V_t : total variants

3.5.Technique of Collecting The Data

The data of this research was collected by using test. Different steps were followed to accomplish this research. The test consists of two parts. First Vocabulary Level Test and Morphological Awareness. There are as follow :

1. Vocabulary Level Test

   Vocabulary Level Test was given to the participant to measure their receptive vocabulary. The test consist of 25 question that devided into 5 level. There are 2000-word level, 3000 word

level, 5000 word-level , 10000 word-level and academic word-level. This test was administrated on the first day.

2. Morphological Awareness Test

   Morphological awareness test was given to measure the participants' ablity of understanding morphemic units in English. The test was divided in to two parts. There were morpheme identification test that consist of 10 question and morphem categories test that consist of 27 question. The participants received the instruction for each part only on the day the particular test was administered and they allowed to complete the tests on their own pace on the second test day.

3.6.Technique of analysis the data

To analyze the data, the researcher analyzed the correlation between morphological awareness and vocabuary mastery. In this study, the researcher choose quantitative data to analyze the data. This technique is usefull to prove stastically ,wethher there is correlaton between morphological awareness and vocabulary mastery. Mean and standard deviation are used to summarize the results of the Morpheme Identification Test, the Morphological Structure Test, and the Vocabulary Level Test. the data will be analyzed as follow :

1. Scoring the students' answer by using the following formula

$$\text{Score} = \frac{\text{students' correct answer}}{\text{total number of item}} \text{x } 100$$

(Depdikbud in Sukirman, 2010:36)

(Brown, 2004)

2. Calculating the mean score of the students' answer by using the following formula:

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

Where:

X : Mean score

∑X : The sum of all Score

N : The total number of subject

(Gay, 2006:230)

3. Finding out the standard deviation by applying this formula

$$S = \sqrt{\frac{S}{N-1}}, where\ SS = \sum X^2 . \frac{\sum X^2}{N1}$$

Where:

SD : Standard Deviation

SS : The sum of square

N : Total number of the Subject

$\sum X^2$: The sum of all square, each score is squared and all the squares are added up

$\sum X^2$: The square of the sum; all the scores are added up and the sum is square, total.

In analysing the data from 2 kind of tests, the researcher used the statistical formulation of the t-test.. The researcher will use SPSS 20.0 to help analyze the data . The researcher will use pearson product moment to know the validity of the question. The form of the pearson product moment as follow :

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y^2) - (\sum y)^2]}}$$

n : number of subject

xy : product of xy

$\sum xy$: sum the product (Walker, 2017:34)