RESEARCH METHOD

This chapter discussed research design, research variables, subjects of the study, research instrument, instrument validation, scoring system, research procedures, data analysis, and hypothesis testing.

3.1. Research Design

In this study, the research design was Co-relational design. Correlation is one of the types in quantitative approach. Correlation is used when the researcher wants to relate one variable to another variable (Hatch & Lazaration, 1999:425). In this study, the writer used Ex Post Facto design as she wanted to investigate whether morphological awareness correlates with vocabulary size of students in Smart course, Pare. Hatch and Lazaration (1999:99) stated "Ex Post Facto design looks at the type of connection between independent and dependent variables or the strength of the connection without considering what went before. No treatment is involved. Good design requires, however, that you consider all the possible threats to the validity of the study and try to control for as many of them as possible." Ex post facto design is as follows:

$X \longrightarrow y$

Note:

X : The test of morphological awareness

Y : The test of vocabulary size

25

3.2. Research Variables

There are two variables analyzed in this study:

1. **Independent Variable**

   According to Hatch and Lazaraton (1999:63-64), an independent variable is a variable that the reseacher's suspects may relate to or influence the dependent variable. In this study, independent variable is morphological awareness.

2. **Dependent Variable**

   Meanwhile, a dependent variable is a variable that is influenced by independent variable. The dependent variable in this study is vocabulary size.

3.3. Subjects of Study

The subjects of this study are students in Smart course, Pare. As Smart course has three focus of class: grammar class, speaking class, and pronunciation class, the writer only took the students from speaking class and grammar class. Students who take speaking class mean that they must take pronunciation class. It becomes the reason for the writer to leave pronunciation class as they are the same subjects in speaking class. Furthermore, in Smart course, each class takes a month to finish their study. There are two periods to start studying, on 10th and 25th every month. In this study, the writer takes 25th period on June.

Students who study grammar stay in Spring House. They only focus on learning grammar. Besides they study in Smart course, they also have two

general classes in their camp. The classes are in the evening (after Maghrib) and in the morning (after Shubuh). The participants in Spring house were 21 (male) students. Meanwhile, students who study speaking stay in S'TORY (Smart Dormitory). This S'tory are divided into two S'tory; female S'tory (S'tory 2) and male S'tory (S'tory 5). They only focus on speaking and have two general classes in their camp (in the evening and in the morning). The participants in S'tory 2 were 10 students and the participants in S'tory 5 were 11 students. Thus, total of the participants both grammar and speaking class were 42 students.

In Smart course, each class takes a month to finish their study. There are two periods to start studying, on 10th and 25th every month. In this study, the writer takes 25th period on June.

3.4. Research Instruments

To answer the research question of morphological awareness and its relationship to vocabulary size, two instruments used tests are adapted to the purpose of the study: Vocabulary Level Test (VLT) version 2 adapted by I.S.P. Nation and Morphological Awareness Test with its subtests: Morpheme Identification test adapted by Al-Farsi (2008) and Morphological Structure test adapted by McBride Chang et al,. (2005). The details are described below:

A. Vocabulary Level Test (VLT)

Vocabulary Level Test (VLT) is a test based on word frequency count. In this study, the writer used vocabulary level test version 2 adapted by I.S.P Nation (2000). This test was prepared to assess the students' vocabulary size. The aim of this test is to measure the students' vocabulary size based on certain levels. This test consists of three levels (2,000 word level, 3,000 word level, and 5,000 word level). Each level consists of ten parts that include six lexical items and three phrases, so there are 30 items in every level and 90 items overall. The test used a matching format that correspond the lexical items to the phrases as in the following example, where three lexical items are being tested (*horse, pencil, and wall*):

1 business

2 clock   _____ part of house

3 horse   _____ animal with four legs

4 pencil   _____ something used for writing

5 shoe

6 wall

This test requires test takers to match lexical items which correspond to the phrases by writing only the number of lexical items next to each phrase. The test takers are given 30 minutes to complete this test. The score of each lexical item chosen correctly is one point. Since the vocabulary level test in this study consists of three levels, the highest possible score is 90 points. If the

test takers do not really know the meaning of a lexical item, they are not allowed to guess the answer. This was aimed to get the valid result of their vocabulary knowledge.

B. Morphological Awareness Test

The morphological awareness test is adapted from McBride-Chang et al (2005) and Al-Farsi (2007). This test was used to measure the ability of students to reflect and manipulate morphemic units in English. Chang et al (2005:421) stated that this test requires students to make use of linguistic knowledge to derive new meaning. This test is divided into two parts: morpheme identification test and morphological structure test as in the following description.

1. Morpheme identification test

The morpheme identification test measures the ability of students to guess the meaning by using morpheme. This test was adapted from Al-Farsi (2007). This test was compromised of 14 test items. In this test, the students were given complex words and asked to segment each item into meaningful chunks. In the following example is the instructions and sample item of the morpheme identification test.

Instruction

This test is aimed to measure your ability to guess the meaning by using morpheme. All questions are complex words. You are provided with 14 items.

Your task is segmenting each item into meaningful chunks. There is no separated answer sheet so that directly write your answer in the box.

Look at the following example:

> **Childhoods:**

The word "childhoods" can be segmented into three meaningful chunks: child, hood, and ~s. The meanings of each chunk are *child* (little human being), *hood* (the state of being), and *~s* (bound morpheme indicating plural form). So, you write your answer in the following way.

> **Childhoods:** child + hood + ~s

2. Morphological Structure Test

Morphological structure test measures the ability of students to create new meaning by making use of inflected and derived words. This test is adapted from McBride-Chang et al (2005). This examines the students' knowledge of lexical structure and the relation to words and within words and their constituents. All the items in this test contain neutral morphemes. This test consists of 20 items. There were two types in this test. In type 1, there are 14 items for students to complete this test. Each question consists of two sentences which contain certain word(s) typed in bold. Students are required to complete the question in the second sentence using the form as shown in the first sentence. Here is an example of type 1:

Type 1 (Question 1-14)

*There is a paper that is <u>**white**</u> in color, we call that <u>**white paper**</u>. Now there is a paper that is <u>**red**</u> in color, what do we call it?_____(red paper)*

The answer for that blank space question is *red paper,* as it follows the form shown in the first sentence.

Meanwhile, type 2 was the test for number 15 to 20. Each question consists of two sentences which contain certain word(s) typed in bold. It is required students to answer the second sentence by giving new word forms so that it is well structured. Here is an example of type 2.

Example 1:

A. *Mike is <u>**teaching**</u> Mathematic in class right now. Yesterday he did this. What did he do yesterday? Yesterday, he _____(**taught**).*

As the context of time indicate the past time, so the word "*teaching*" should be transformed into "*taught*" (past tense). Therefore, you should answer by completing the word **"taught".**

Example 2:

A. *This toy is called a <u>**doll**</u>. There are five of them. There are five_____ (**dolls**).*

As the context of noun indicates noun plural, the word "*doll*" should be added by bound morpheme *~s* into "*dolls*" (plural form). Therefore, you should answer **"dolls"** on your answer sheet.

The scoring was based on the correct answer, that is, one correct answer is scored 1; one wrong answer is scored 0. Morpheme identification test is segmenting the word(s) into meaningful chunks, so the score of this test is based on number of meaningful chunks. There are 36 total points of meaningful chunks which contain 3 inflectional affixes, 18 stem words, and 15 derivational affixes. Meanwhile, the score of morphological structure test is counted in each item. This test consists of 20 items which means that the total score of this test is 20 points. Therefore, the total score of morphological awareness tests are 56 points.

3.4.1. Instrument Validation

The test can be said valid if the test measures the objects to be measured. An instrument should be valid for the purpose of testing something (Hatch & Lazaraton, 1991:539-540). To measure whether the test has a good validity, the writer used content validity and face validity.

a. Content Validity

Content validity represents our judgment regarding how representative and comprehensive a test is. It has to do with how well a test or observation instrument tests what it purports to test (Hatch & Lazaraton, 1991:539). To

get the content validity, the test for vocabulary size which is adapted from I.S.P. Nation is tried out to various students. The try out test was the original test from Nation. As the participants in this study were students in a course whom are in the various ages and major of previous study, the writer gave the try out to various students; 2 fresh graduated students from Senior High School, 1 student in semester 2 majoring English, 1 student in semester 4 majoring English, 1 student in semester 6 majoring English, 1 student in semester 8 majoring English, I student in semester 6 majoring non-English, and 1 student from master's program. The total participants were 8 students from different major and ages.

Those participants were not only did try out of VLT test but also Morphological Awareness test as it was also tests adapted from McBride-Chang et al and Al-Farsi. Besides, this try out test is to measure whether the content is valid or not, this was also held to measure the time to conduct the real test.

b. Face Validity

Face validity relates to content validity. However, face validity has more to do with how easy it will be to convince our students, our peers, and other researchers that a particular test actually measures what we say it measures (Hatch & Lazaraton, 1991:540). In this study, the writer asked an expert validation to valid this test. An expert validation was taken from an

English lecturer in UIN-SA Surabaya, Miss Ika Fitriani, M.Pd. This process of face validation took 3 days. First day, the writer got many revisions. Then in the second day, the writer got the assignment to valid the test of this study with a minor revision which was revised in day 3.

3.4.2. Scoring System

In this study, the writer used Arikunto's formula to score the result test of students. The score of the tests were calculated by using the following formula:

$$S = \frac{R}{N}\ 100$$

Where:

S : the score of the test

R   : the total of the right number

N   : the total items

(Arikunto, 1997: 212)

3.5. Research Procedures

In conducting this study, the writer used the steps as follows:

1) Stating research problem

2) Determining the objective

The objective in this study was to find out whether there is any relationship between students' morphological awareness and their English vocabulary size.

3) Determining the subject of study

In this study, the participants of this study were students of Smart Course, Pare who study in grammar class and speaking class.

4) Constructing research instrument

The test consists of two tests:

➢ Test 1 Vocabulary Level Test (90 items)

➢ Test 2 Morphological Awareness Test (36 items)

5) Conducting Validation

➢ Expert validation: it was conducted by an English lecturer.

➢ Try out validation: the try out was conducted in different ages and majors. Students who are from English department, non-English department, fresh graduated from senior high school, and master's program were taken to conduct the try out. The aim of this try out was to know the quality of the test and the result of time duration during doing the test, and determine which item of the test should be revised for the real test and determine the long duration during doing the test.

6) Conducting the test

The test was administered over two days to minimize fatigue. The first day of testing consisted of morphological awareness test. It was conducted on June 17th, 2016. The second day of the test was vocabulary level test. It was conducted on June 18th, 2016. These date were taken to conduct the test as the

students had spent more than 25 days in their camp and course. This test was conducted in each camp; Spring house, S'tory 2, and S'tory 5. The participants received the question papers and answer sheet with instructions for each test clearly. They were given 30 minutes on each test day to complete the test.

7) Analyzing data

a. The data were divided into grammar class and speaking class. The writer used the frequency distribution score and mean (Subana et al, 2000:48)

b. The total score of MA and VLT's students both in grammar and speaking class was analyzed by Pearson Product Moment Correlation Formula. After getting the result, the writer then calculated once more which is computed by using SPSS 16.0 to get the valid result.

3.6. Data Analysis

There are two variables in this study, one dependent variable and one independent variable. In this study, morphological awareness is independent variable as it is assumed that morphological awareness influences the vocabulary size. Hence, vocabulary size is as dependent variable as it is influenced by morphological awareness. Since this study was correlation study, to collect the data, the writer used tests for those variables which were adapted by experts.

To investigate the morphological awareness test and VLT, the writer used Subana (2000) calculation to get the result of morphological awareness test and VLT of both grammar and speaking class. These are four steps to make frequency distribution (Subana et al, 2000:48):

1. Looking for maximum and minimum score

2. Looking for interval: $P = \dfrac{\text{range (R)}}{\text{amount of students (K)}}$

    a. Counting Range (R)

      R = maximum data − minimum data

    b. Counting amount of students (K) with Sturges:

      K = 1 + 3,3 log. N

3. Counting Interval (P)

    $P = \dfrac{\text{range (R)}}{\text{amount of students (K)}}$

4. Deciding mean

    Deciding qualification of Variable (variable X or variable Y)

After that, in order to correlate both variables (variable X and Y), the total scores of MA test and VLT both grammar and speaking class was combined. Then, the correlation was calculated by using Pearson Product Moment Formula:

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

Where:

r_{xy} = coefficient correlation between variable X and Y

N = amount of Students

Σ xy = score of multiplication of X and Y

Σ x = score of variable X

Σ y = score of variable Y

After getting the result of Pearson Product Moment Formula, the writer then went to the statistical analysis using SPSS 16.0 (Statistical Program for Social Sciences).

3.6.1. Hypothesis Testing

Hypothesis testing was done by comparing r_{value} with r_{table} *product Pearson Product moment* with dk = n with coefficient correlation at the significant 5% or 0.05 margin of error. The criteria of hypothesis testing (*r*) are accepted H_0 if $r_{value} < r_{table}$ or rejected H_0 if $r_{value} > r_{table}$. To know the interpretation of the r_{xy}, it is interpretated as follows: (Sudijono, 2012:193)

Table 3.1
interpretation of *r* Pearson Product Moment

r Product Moment	Interpretation
0,00 - 0,20	There is correlation between variable X and variable Y, but the correlation is very weak/low. So that, it is reputedly none correlation.

0,21 – 0,40	There is weak/low correlation between variable X and variable Y.
0,41 – 0,70	There is correlation between variable X and variable Y in the average.
0,71 - 0,90	There is correlation between variable X and variable Y in high/strong,
0,90 – 1,00	There is correlation between variable X and variable Y in very high/very strong.