

CHAPTER III RESEARCH METHOD

3.1 Research Design

As mentioned previously, this quantitative research was intended to find out whether there was a significant increase of students' vocabulary achievement at the ninth grade of SMP Muhammadiyah 1 Sendang Agung after being taught through guessing game. The researcher used the *one group pretest-posttest design*.

The research design is described as follows:

T1 X T2

Where:

T1: pretest

T2: posttest

X : treatments (using guessing game)

(Setiyadi, 2006: 131)

3.2 Subject of the Research

The subjects of this research were the students at the grade IX of SMP Muhammadiyah 1 Sendang Agung, Lampung Tengah in the academic year of 2011/2012. There are three classes of the grade IX of SMP Muhammadiyah 1

Sendang Agung. Each class had the same opportunity to be chosen as the subject. In relation to the design, the researcher took one class to conduct the research as the experimental class that was class IXA. That class consists of 33 students.

3.3 Data Collecting Technique

The data of the research was the student` vocabulary achievement of sport before and after the treatments.

The instrument of the research was multiple choice tests, where the researcher gave pretest and posttest in order to evaluate, to measure the students` vocabulary achievement of sport (noun, verb, and adjective).

In collecting the data, the researcher used the following procedures:

3.3.1 Pretest

The pre-test was conducted before the treatment. It was done in order to know how far the students have mastered the vocabulary before treatments were given.

The test used by the researcher was an objective test in the form of multiple choices. The number of item in the test was 30 items and each item had four options of answers (A, B, C, D). The time allocation is 60 minutes. The result of pretest was compared with the posttest to find out their achievement.

3.3.2 Treatments

After giving pretest, the students were given three treatments by using guessing games technique based on the lesson plan which was prepared. Each treatment was held for 90 minutes.

3.3.3 Posttest

The posttest was administered to the students after they got the treatments. It is done in order to know how far the students have mastered the vocabulary after being taught tough guessing game. Similar to the pretest, in the posttest the researcher also used an objective test in form of multiple choices. The questions were the same as the pretest. But, the researcher changed the order of the questions and the distracters from those in the pretest in order that the students not only memorize or remember the order of the answer for each question but they can really understand the questions. The posttest consisted of 30 items and each item had four options of answers (A, B, C, D). The time allocation was 60 minutes. One is the correct answer and the rest are the distracters. The posttest had the same difficulty and the systems of scoring as the pretest.

3.4 Try Out Test

The try out test was needed to be done to prove whether the test had good quality or not. The test was said having a good quality if it had a good validity, reliability, level of difficulty, and discrimination power. The try out test was also used to find

out the instrument of the test gained the data of the research. The test was administered for 40 items in 60 minutes with four options of answer for each.

3.4.1 Validity

A test was said valid if the instrument measured what should be measured Arikunto (1986:64). Besides, Shohamy (1985:75) adds that it also examines whether the test is good representation of the material, which needs to be tested. To measure whether the test had a good validity, the researcher analyzed the test from content, construct, and face validity.

Content Validity referred to the extent to which a test contains a representative sample of the subject matter, the focus of the content validity was adequacy of the sample and simply on the appearance of the test (Hatch & Farhady, 1982: 251). In the content validity, the material given was suitable with the curriculum. In this case, the researcher used the vocabulary that was supposed to be comprehended by grade IX students which was based on the KTSP of English for Junior High School. To fulfill this validity, the researcher saw all the indicators of the instrument and analyzed them whether the measuring instrument had represented the material that was measured or not. In this research, the researcher arranged the instrument based on the material that had been given, which was vocabulary, and the researcher made the instrument related to vocabulary which was content words (noun, verb, and adjective). The researcher took those three aspects since it was appropriate with guessing game. Adverb was not used in the training because it seemed difficult to be

used in guessing game. The content of try out is presented in the table of specification below:

Table 1. Table of specification of try out test

No.	Word Classes	Number of Items	Percentage
1	Nouns	1,5,6,9,13,17,20,22,25,28,29,32,33,35,36,37	40%
2	Verbs	4,8,12,14,15,19,23,26,27,30,38,40	30%
3	Adjectives	2,3,7,10,11,16,18,21,24,31,34,39	30%
Total			100%

Construct validity was focused in the kind of the test that was used to measure the ability. It was used to the research which had many indicators. According to Setyadi (2006: 26), if the instrument just measure one aspect, for example vocabulary, the construct validity can be measured by evaluate all items in the test. If all items have measured vocabulary mastery, this instrument has fulfilled construct validity. In this research, the researcher measured the students' vocabulary mastery by giving vocabulary testing in the form of multiple choices. So the test has been fulfilled the construct validity.

Face validity means that the test has good typing and clear instruction that will not make the students get confused. (Arikunto, 1997: 173). In this case, questionnaire was used to measure the face validity of the test. The questionnaires had been given to two English teachers and two students of SMP Muhammadiyah 1 Sendang Agung in order to know whether the instrument of the test had fulfilled face validity or not.

In this research the face validity of the vocabulary test will be checked and examined by giving questionnaire to them. The questionnaire consisted of five questions in which there were three options of answers, these were 'Ya', 'Kurang', and 'Tidak'. Based on the result of the questionnaires, most teacher and students answered 'Ya' for question number 1 until 4. Then, for question number 5 only one of them who answered 'Kurang' and three others answered 'Ya'. So that, it can be stated that the test which was in the form of multiple choices had looked right and understandable to other testers, teachers, and students.

3.4.2 Reliability

Reliability refers to the extent to which the test is consistent in its score and gives us an indication of how accurate the test score are. (Hatch and Farhady, 1982: 244). To estimate the reliability of the test this research, split-half technique was used. To measure the coefficient of the reliability between odd and even group, this research used the Person Product Moment Formula (Arikunto, 1997:69) as follows:

$$r_l = \frac{\sum XY}{\sqrt{[\sum X^2 \sum Y^2]}}$$

Where:

r_l : The coefficient of reliability between first half and second half group

X : The total numbers of first half group

Y : total numbers of second half group

X^2 : The square of X

Y^2 : The square of Y

(Lado in Hughes, 1991:3)

Then this researcher used “Spearman Brown’s Prophecy Formula” (Hatch and Farhady, 1982:286) to know the coefficient correlation of whole items. The formula is as follows:

$$rk = \frac{2rl}{1 + rl}$$

Where:

rk : the reliability of the test

rl : the reliability of half test

The criteria of reliability are:

0.90- 1.00 : high

0.50- 0.89 : moderate

0.0 - 0.49 : low

(Hatch and Farhady (1982: 286)

3.4.3 Level of Difficulty

In order to see the difficulty of level, researcher used the following formula:

$$LD = \frac{U + L}{N}$$

Where:

LD : level of difficulty

U : the number of the students who answer correctly

L : the proportion of lower group students

N : the total number of the students

The criteria are:

< 0.30 = difficult

0.30 – 0.70 = average

> 0.70 = easy

(Shohamy, 1985: 79)

3.4.4 Discrimination Power

To see the discrimination power, the researcher used the following formula:

$$DP = \frac{U - L}{\frac{1}{2}N}$$

Where:

DP : discrimination power

U : the proportion of upper group students

L : the proportion of lower group students

N : total number of students

The criteria are:

DP: 0.00-0.19 : Poor

DP: 0.20-0.39 : Satisfactory

DP: 0.40-0.69 : Good

DP: 0.70-1.00 : Excellent

DP : Bad items, should be omitted

1. If the value is positive discrimination a large number of more knowledgeable students than poor students got the item in correct. If the value is zero, no discrimination.
2. If the value is negative, means that more low-students than high level students got the item correct.
3. In general, the higher the discrimination index, the better. In classroom situation most items should be higher than 0.20 indexes.

(Shohamy, 1985:81)

3.4.5 Scoring System

In scoring students result of the test, this research used Arikunto's formula. The highest score was 100. The scores of pretest and posttest were calculated by using formula as follow:

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

Where:

S : The score of the test

R : The right answer

N : The total items

(Arikunto, 1997:212)

3.5 Data Analysis

After conducting pretest and posttest, the researcher analyzed the data in order to know whether there was a significant increase of the students' vocabulary

mastery. The researcher analyzed the students' vocabulary achievement by doing these activities:

1. Scoring the pretest and posttest
2. Tabulating the score of student's vocabulary test results using Repeated measures T-test.
3. Drawing conclusion from the tabulated result of the pretest administering, that is statistically analyzed using SPSS (statistical Program for Social Sciences) in order to test whether increase of the students gain is significant or not.

3.6 Hypothesis Testing

The researcher used the hypothesis testing to prove whether the hypothesis proposed in this research was accepted or rejected.

The hypothesis of the research was: "There was a significant increase of students' vocabulary achievement after being taught through guessing game"

The hypothesis was statistically analyzed using Repeated measures T-test that was used to draw the conclusion in significant level of 0.05 ($P < 0.05$) in which the hypothesis is approve if $\text{Sig} < .$

H_0 : There is no significant increase of students' vocabulary achievement after being taught through guessing game.

H_1 : There is a significant increase of students' vocabulary achievement after being taught through guessing game.