CHAPTER 3

RESEARCH METHOD

This chapter discusses about setting, population and sample, research design, data collecting techniques, research procedures, tryout test, scoring system, and data analysis as follows.

3.1 Setting

This research was conducted at SMA YP Unila Bandar Lampung for months. The researcher chose SMA YP Unila as the setting, because the students were classified as having a quite poor student in vocabulary. Further research was conducted to get the data after giving the treatment and some tests to the students at the school.

3.2 Population and Sample

The subjects of this research were the first grade students of SMA YP Unila in the academic year of 2013/2014. In the first grade, there were two types of the class in this school, ISOS (social students) had four classes and MIA (science students) had

seven classes. All of them consisted of 40 to 43 students. To obtain a fair sample, the researcher used random sampling. Then, from the social and science class, the researcher drew a lottery to choose one of the twelve classes. Then, ISOS 4 came out as the choice. In this class there were 32 students, 12 boys and 20 girls. They had a good interaction with the teacher, but their ability in English was low because they were still lack some practices. By using this new strategy, the researcher hopes that the students can find different atmosphere, and improve their ability especially in vocabulary.

3.3 Research Design

This study used one-group pretest and posttest as the research design which one group of the participants was given the pretest before the treatment; and the posttest after the treatment. The researcher chose this design because the result would be more accurate as it could compare the situation before and after the treatment was given. Then, there was a pretest that indicated how the participants did prior to the administration of the treatment, and the posttest was used to measure student ability after treatment. The pretest was administered first to measure students' weakness in the classroom. After implementing the treatments, the posttest was administered to test students' skills after given a new learning method. This research was conducted to find out the improvement of students vocabulary and their perception after treatment was given. In this case,the researcher used Bingo games as the learning

method to figure out students' ability in terms of recalling and understandingthe antonyms and synonyms of the materials that they had learnt in the classroom.

The research design:

T1 X T2

Explanation:

T1: pretest (test before using new strategy)

X: method (using Bingo Games)

T2: posttest (test after using new strategy) (Hatch and Farhady, 1982)

3.4 Data Collecting Techniques

There were two types of data collecting techniques that were used by the researcher, they were test and questionaire. The explanation of data collecting technique is as follows

3.4.1 Test

There were two kinds of test in this research: pretest and posttest. Before giving the treatments tostudents, the researcher wanted to know how far the students had mastered the vocabulary. The pretest that was used by the researcher was an objective test in the form of multiple choices. There were 30 items and each

item had four options of answer (A, B, C, D). Time allocation was 45 minutes. The result of pretest was compared with the posttest.

The second was posttest which was administered to the student in the class after the treatments to find out whether their ability to memorize some vocabularies increased or not, similar to the pretest, in the posttest the researcher used objective test with the same questions in multiple choices. The researcher made the sentence of the story different from the pretest, and also gave random questions. It made the student did not only memorize the order of the answers for each question, but also understood, and could answer it with their own experiences in studying vocabulary through Bingo Games. They should answer 30 questions and they had 45 minutes to answer them. The posttests had the same difficulty and the scoring system as in the pretest.

3.4.2 Questionnaire

The questionnaire wasadministered to measure the ability of students owned either before or after the treatment was done. Through the questionnaire, the students could say what was on their mind through writing. In this study, the researcher used closed and opened questionnaire which the students had to choosethe answers based on the choice that suitthem, and wrote down their opinions about the method. The questions that they answered were related to the learning process in the classroom, either by their teacher or by the researcher. The results of the questionnairewere used to find out the problems

and the responses of the students after learning vocabulary through Bingo Game.

3.5 Research Procedures

The research was conducted during normal class periods with the following procedures:

1. Determining the research problems in English teaching learning process which were faced by students, one of the problems was the vocabulary mastery. The researcher found the problem when teaching at SMA YP Unila, and continued to observe at SMA YP Unila Bandar Lampung.

2. Determining the population and sample. The population of this research was tenth grade of SMA YP Unila Bandar Lampung consisted of eleven classes. Those classes were chosen randomly. The sample of this research was XISOS4.

3. Administering the tryout test to know the quality of the vocabulary test. The tryout test consisted of multiple choices with four options A, B, C, and D. This test was administered to measure the level of difficulty (LD) and discrimination power (DP) as well as to find out reliability and validity of the test.

4. Preparing the materials which would be taught to the students. To improve the material, the researcher took the material based on the English book of the tenth grade

students and searched in the internet too. It made the students became more attractive to learn vocabulary.

5. Administering the pre-test and finding the result. In this research, there was one pre-test that was proper to the tenth grade of SMA YP Unila Bandar Lampung. The researcher administered the pretest in order to measure the students' basic ability before the treatment. In this way, the researcher askedthe students to do the multiple choices test which consisted of 30 items. The students should choose the correct answer from four options A, B, C, D. The pretest took 45 minutes.

6. Giving the treatment. The treatment was conducted for two times. It required 45 minutes or one hour of teaching learning process.

7. Administering the post-test. The post-test was used to check the students' vocabularies after they were taught by using Bingo Game, to know whether the students' vocabularies improved or not. The posttest took 45 minutes which consisted of 30 items divided in four options A, B, C, and D. Those items consisted of three aspects of vocabulary (Verb, Adjective, Noun).

8. Analyzing the results of the test. After conducting the pre-test and post-test, the researcher analyzed the results by using one-group pretest and posttest design. It was used to know whether Bingo Game was able to increase students' vocabularies. The

data were computed through SPSS program version 18 and Microsoft Excel for Windows 2007.

3.6 Tryout Test

The tryout test was conducted to measure whether the instrument YP the research was good to be administered so that it could obtain a valid data. A valid data should meet four criterion: a good validity, reliability, level of difficulty and discrimination power. The results are elaborated in the following sections.

3.6.1 Validity of the Data

A test is valid if the instrument measures what should be measured (Arikunto, 1986:64). To measure whether the test had a good validity, the researcher analyzed the test from content, construct, and face validity. Generally, validity indicates the extent of measurement tools to measure something which we will measure (Setiyadi, 2006: 22).

Content validity is the extent to which the test measures a representative sample of the subject matter content. The focus of the content validity is the adequacy of the sample and not simply on the appearance of the test (Hatch and Farhady, 1982:251). In this case, the researcher used the vocabulary that supposed to be comprehended by social students at SMA YP Unila. To fulfill

this validity, the researcher should see all indicators of the instrument and analyzed them.

The material that was given was vocabulary, thus the researcher made the instruments which were related to vocabulary which consisted of contents adjective, verb, and noun. From the three aspects of the vocabulary, the researcher divided the questions into two parts, synonym and antonym. For the synonym, there were 15 questions, and there were 15 questions of antonym. The researcher used Bingo Games to measure the students' ability in vocabulary. In this research, the content of the test items were presented in the table of specification below:

Table 3.1. Specification of Data

Vocabulary skill	Item number	Percentage of data
Adjective	1, 4, 6,8, 9, 10, 11, 13, 14, 18, 19, 20, 22, 23, 24, 27, 30	60%
Verb	2,12, 15, 16, 17, 25, 28, 29	30%
Noun	3, 7, 21, 25	10%

From the table, the reasercher gives the adjective questions more than the other part of speech, the first reason is, because from the syllabus and their book the students learn adjective more than the others, the second reason is, because the students in this level (first grade of senior high school) not yet learn deeply about

the adverb, they just know the adverb but they cannot implementation it, in the English subject. The third reason is, because in synonym and antonym mostly found in adjectives (Nugroho, 2014).

Construct validity focuses on the kind of the test that uses to measure the ability. When all of the items can measure vocabulary mastery, the instrument fulfills construct validity. Face validity means that the test has good typing and clear instructions that will not make the student confused (Arikunto, 1997:173). In this case, the researcher used the questionnaires to measure face validity. The questionnaires were given to two English teachers and the students in the class ISOS 4 of SMA YP Unila to know whether the instrument of the test fulfilled the face validity or not. The researcher gave some questions about the effectiveness of using Bingo Games in the class. There were three answers which were "yes", "less", "no". If the sample answers "yes" more than "less" and "no", it can be stated the test is understandable and good for the students and teachers.

3.6.2. Reliability

Reliability refers to the consistency of the measurement. The consistency of the results when the same subject is given at different times and it shows the same result. Thus, no matter how many times the test is implemented, if it is reliable, the result will almost be the same. To obtain the reliability of the test, the formula of Spearman-Brown was used because this formula have an accurately accounting, and easy to use. This formula:

$$Rxy = \frac{N \, \Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{(N\Sigma X^2 - (\Sigma X)^2)(N\Sigma Y^2 - (\Sigma Y)^2)}}$$

N = total of students

x= the number ofhalf answer from the students in upper score

y = the number of half answer from the students in lower score

As for knowing the level of reliability of the instrument, the researcher used the following categories

1.) From 0.800 to 1.000: very high

2.) From 0.600 to 0.799: higher

3.) From 0.400 to 0.599: enough

4.) From 0.200 to 0.399: Low

5.) From 0.000 to 0.199: very low

3.6.3. Level of Difficulty

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

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

Where:

LD: level of difficulty

U   : number of students who answer correctly

L   : the proportion of lower group students

N   : total number of students

The criteria are: if the score is less than 0.30 it means the questions are difficult, if the score is 0.30-0.70 it means the questions are average, and if the score more than 0.70, the questions are easy. (Shohamy, 1985:79)

3.6.4 Discrimination Power

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

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

Where:

DP : discrimination power

U   : the proportion of upper group students

L   : the proportion of lower group students

N   : total number of student

The criteria are:

1. DP 0.00-0.19 is poor,

2. DP 0.20-0.39 is satisfactory,

3. DP 0.40-0.69 is good,

4. DP 0.70-1.00 is excellent.

a. If the value is positive, it means that higher level students get the correct answer than low students.

b. If the value is negative, it means that lower level students get the correct answer than the high level students (it can be said that the test item is bad item, should be omitted).

c. If the value is zero, it means that there is no discrimination. In general, the higher the discrimination index, the better the test will be. In the classroom situation, most items should be higher than 0.20 indexes. (Shohamy, 1985:81)

3.7 Scoring System

In scoring the students' work, the researcher used Arikunto's formula (1982:271). The ideal highest score was 100. The score of the pretest and the posttest 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 answer

N   : the total items

(Arikunto, 2005: 236)

3.8 Data analysis

After finishing the pretest and the posttest, then the researcher analyzed the data.The data were analyzed to find out whether the students' vocabularies increased or not, what the students' responses were, and what problems that were faced by the students and teacher. The researcher analyzed all questions by doing these activities:

1.   Scoring the pretest and posttest.

2.   Tabulating the score in students' vocabulary test results.

3.   Searching the problems when using this technique.

4.   Making conclusion based on the result of the data, to know the students' vocabulary improve or not.

5.   Giving the questionnaire to the students, to know their responses and problems after being taught through Bingo Game .

Those are all of the explanations in this Chapter, the next explanation will be continued in Chapter Four.