III. RESEARCH METHOD

This chapter discusses about research design, subject of the experimental method, data collecting technique, validity, reliability, scoring system, research procedure.

3.1 Research Design

In conducting this research the researcher used experimental method. This experimental method was dealt with two methods, and the researchers divided 32 students into eight groups and consist four students each group. First is experimental by using original direct method with eight groups and another is experimental by using modified direct method. Each of the groups received pre-test, treatments and post test. The experimental 1 get treatment through direct method and the experimental 2 get treatment by modified direct method through group work with pictures.

The design can be represented as follows:

G1   : T1 X1 T2

G2   : T1 X2 T2

Where:

G1   : experimental group 1

G2   : experimental group 2

T1   : pre-test

X1   : Experimental group 1 treatment by using direct method

X2   : Experimental group 2 treatment by using modified direct method

          through pictures technique.

T2   : post-test

(Setyadi, 2006:135)

3.2 Subject of the Research

The subject of the study was the second year students of SMP N 11 Bandar Lampung in the 2011-2012 academic years. Grade VIII was chosen considered the previous knowledge they have from previous semesters and consist with one class in VIII E as a research class. The research was done in SMPN 11 Bandar Lampung since there was no such research conducted. To decide the classes chosen, simple random probability sampling by using lottery be use (Setyadi, 2006: 39). There were nine classes of grade eight, from eight classes of grade eight students, one class is ignore since the class belongs to the superior class which means that the students in the class are selected from all students who got high achievement in all subject. Therefore, from eight classes of grade eight students, one class was randomly taken. In this research one class becomes experimental group 1 by using the original Direct Method and experimental group 2 by using the modified Direct Method with pictures that is VIII E in this research.

3.3 Data Collecting Technique

In collecting the data, the researcher used objective vocabulary test in the form of multiple choice items. The pretest and posttest are to measure student vocabulary achievement of sport related to content words (nouns, adjective and verbs).

The data of this research was the ability in form of score of the student's vocabulary achievement of sport, before and after the treatments. The pretest and posttest given to subject in order to evaluate and to measure their vocabulary mastery of sport related to content words (nouns, verbs adjectives).

In collecting the data researcher follows the steps:

- Conducting Try Out Test

    After choosing the subject, the try out of test items was carried out. This is multiple choice tests. The number of the test items is 40 with four options of answer for each (A, B, C, D), one as the correct answer and the rest were the distracters. The aim of trying out is to measure the quality of the test used as the instrument of the research, and to determine which item should revise be for the pretest and posttest. The result of the try out test is used to measure the level of difficulty and discrimination power, to find out the validity and reliability.

➕ Administering the Pretest

The pretest was conducted before treatments. It was used to know the students' background knowledge of vocabulary before the treatments. The pretest used by the researcher is an objective test in the form of multiple choices. It is administered in order to know the equality and the differences of the two classes. It is used to see whether the two classes have equal background knowledge or not. The researcher use 30 items in which each item have four options of answer (A, B, C, and D). One is the correct answer and the rests are the distracter. The aspect of vocabulary which is tested concerned about meaning and use.

➕ Conducting the Treatments

In this session the researcher applied seven meeting by using three treatments and 45 minutes each giving treatments in presenting materials about vocabulary of sport. The first treatment is about kind of sport, the second treatment is about the part of equipments of sport and the last treatment is about the content of vocabulary. It is given to students to get the purpose of materials. In order to improve of vocabulary student's of sports by using the modified Direct Method in teaching learning process.

➕ Administering the Posttest

The posttest is also held in order to know whether the students have mastered the vocabulary after they are taught through the modified Direct Method. The

posttest is conducted after conducting the treatments. It is used to know how far the students have mastered English vocabulary after being taught through modifying of direct method. Similar to the pretest, the posttest also use an objective test in the form of multiple choice items. Changed 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. And it consists of four options of answer for each (A, B, and C, D). One is the correct answer and the rests are distracters. This posttest had the same difficulty as a pretest.

3.4 Research Procedure

In this part the researcher used the procedure to research the student's ability by using the original of direct method or the modifying of direct method. The procedures of this research are as follows:

1. Finding the subject

   The subjects of the research are taken randomly by using lottery

2. Administering the try out test to another class

   This test is administrated to know the quality of the test

3. Presenting the Pre-Test

   This test is given to experimental group 1 and experimental group 2 in order to know the students background knowledge of vocabulary. It is also administered in order to know the equality and the differences of the two classes. The research asks two raters to score the result

4. Arranging the material to be taught

   The researcher arranges the material that was be taught to each class by preparing the lesson plan

5. Implementing the methods (Direct Method and Modified Direct Method through group work) both in experimental group 1 and group 2. The experimental group 1 is thought by using Direct Method and the experimental group 2 is thought by using Modified Direct Method through pictures

6. Presenting the post test to evaluate the result of the experiment

   This test is given after the experiment to both classes in order to know the students achievement after they receive the treatment. The researcher asks two raters to score the result

7. Analyzing the data

3.5 Criteria of Good Test

In this research, to prove whether the test has good quality, it must be tried out first. The test can be said having a good quality if it has a good validity, reliability, level of difficulty, and discrimination power.

1. Validity

In validity concept there are three parts of process, the first is content, the second is construct and the last is face validity, and then the researcher in this part was discussed only the content of test. The validity of the test is the extent

to which it measures what it is supposed to measure and nothing else (Heaton, 1991:159). In order to measure whether the test has a good validity, the researcher analyzes the test from content, construct, and face validity. Content validity is concerned with whether the test is sufficiently representative and comprehensive for the test. In the content validity, the materials given are suitable with the curriculum. In this case, the researcher uses the vocabulary that is supposed to be comprehended by grade VIII students. To fulfill this validity, the researcher should see all the indicators of the instrument and analyze them whether the measuring instrument has represented the material that was being measured or not. In this research, the researcher was arranged the instrument based on the material that was be given. If the measuring instrument has represented all the ideas that connected with the material that was be measured, that measuring instrument has fulfilled the aspect of content validity.Content validity can also be examined from the table of specification. If the table represents the material that the tester wants to test, it means that it is a valid test from the point of view (Shohamy, 1985: 74). The content validity is constructed by including vocabulary material presented in the training; they are noun, verb, and adjective. The content of try out test is represented in the table of specification below:

Table 1. Specification of the Try out Test

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

In this case, the writer used vocabularies that supposed to be comprehended by the grade IX students based on the curriculum. To know whether the test had a good validity, the items of the test were discussed with the expert (advisors) and the colleagues (the writer's classmate and the English teacher of SMP N 12 Bandar Lampung).

Construct validity examines whether the test actually in line with the theory. It means that whether the test is in line with the school curriculum. In this research, the researcher used the vocabulary that was supposed to be comprehended by the grade IX students of Junior High School. The material was under topic of sports which was representative of vocabulary material based on the curriculum used in Junior High School; KTSP Kurikulum Tingkat Satuan Pendidikan) 2006. 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 some English teachers of SMP N 12 Bandar Lampung 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 had been checked and examined by giving questionnaire to some English teachers. Based on the questionnaire, it can be concluded that the test which was in the form of multiple choices had looked right and understandable to other testers, teachers and testes.

1. Reliability

Formula below: Reliability refers to the extent to which the test is consistent in its score, and it gives an identification of how accurate the test scores are (Shohamy, 1985: 70). To compute the reliability of the test, split half method was used. It was done through dividing the test into two parts, odd and even number. To measure the coefficient of the reliability, the researcher used the Pearson Product Moment

$$r_l = \frac{\sum XY}{\sqrt{(\sum X^2)(\sum Y^2)}}$$

Where:

r_l : coefficient reliability between odd and even numbers

x : odd number

y : even number

$\sum X^2$: Total Square of odd number

$\sum Y^2$: Total Square of even number

$\sum XY$: total number of odd and even number

(Lado: 1961 in Hughes, 1991: 32)

Then, to compute the coefficient correlation of the whole items, the researcher used Spearman Brown Prophecy Formula.

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

r_k : reliability of a full test

r_l : reliability of half test

The criteria of the reliability are:

0.90 – 1.00   : high

0.50 – 0.89   : moderate

0.00 – 0.49   : low

(Hatch and Farhady, 1985: 247)

The result of reliability of the try out test in this research was 0.98 (see appendix 4). Seeing the criteria of the reliability that the writer proposed above, the reliability of this test was high, while the criterion for high reliability is in the range 0.90-1.00. It can be concluded that this instrument gave consistent result when it was administered under similar condition, to the same participant and in different time (Hatch and Farhady, 1985: 247). Therefore, it can be stated that the test had fulfilled the criteria of reliability. In other words, the test was reliable.

1. Level of Difficulty

To see the level of difficulty, the researcher uses the following formula:

$$LD = \frac{R}{N}$$

Where:

LD : level of Difficulty

R   : number of students who answer correctly

N   : the total number of students following the test

The criteria are:

<0.30   : difficult

0.30-0.70 : average

>0.70   : easy

(shohamy, 2985:79)

2. Discrimination Power

To see the discrimination power, the researcher will use 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 student

The criteria are:

1. If the value is positive discrimination a large number of more knowledge students then poor students get the item correct. If the value is zero, no discrimination

2. If the value is negative, it means that more low-students than high level students get the item correct

3. In general, the higher the discrimination index, the better. In the classroom situation most items should be higher than 0.20 indexes

Based on the calculation of discrimination index, the result of try out test showed that was 7 items (8, 11, 22, 32, 34, and 35) had zero discrimination. It meant that the items could not discriminate the upper and lower students well. Therefore, those item were dropped. Than item number 12 was also dropped since the ID result was negative, which meant low level students answered more than the high level students. Item numbers 16, 28, and 39 were also dropped since the results were under 0.20. In short, 30 items had discrimination index above 0.20 and they were administered to the pretest and posttest. Those items were 1,2,3,4,5,6,7,9,10,13,14,15,17,18,19,20,21,23 24,25,26,27,29,30,31,33,36,37,38,40. A further result of discrimination index was shown on (appendix 3).

3. Scoring System

In scoring student's result of the test, this research uses Arikunto's formula. The highest score is 100. The scores of pretest and posttest are calculated by using formula as follow:

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

Where:

S : the score of the test

R : the total of the right answers

N : the total items

(Arikunto, 1997:212)