

CHAPTER III RESEARCH METHOD

This chapter describes the method which is used in collecting the data of the research such as research design, population and sample of the research, research instruments, research procedures, the criteria of good test, data analysis, and the hypothesis testing.

3.1 Research Design

This research was quantitative by nature. The writer used *Ex Post Facto* design to investigate the effect of two variables (dependent and independent variables) without do experiment (Setiyadi, 2006:144). The writer chooses this research design because she tries to investigate whether there is significant effect of students' self-esteem on their reading comprehension achievement, do the students with high self-esteem get reading comprehension achievement better than students with low self-esteem or not, and what the problems that are faced by the students with low self-esteem.

Ex Post Facto design as follows:

$$X \longleftrightarrow Y$$

Note:

X : The students' self-esteem test

Y : The students' reading comprehension achievement test

3.2 Population and Sample of the Research

3.2.1 Population of The Research

The population of this research is the first year of SMP Muhammadiyah 3 Bandar Lampung in academic year 2012/2013. There are six classes (VII A- VII F) with total number 256 students. There are 141 boys and 115 girls.

3.2.2 Sample of The Research

The sample of this research is taken by using *Simple Random Sampling* where every first year student of SMP Muhammadiyah 3 Bandar Lampung could be chosen as the sample of this research. However, the writer chose only one class to be the sample of this research by using lottery that consists of 37 students. The writer used *Simple Random Sampling* as the method to choose the sample in order to fulfill the reliability aspect and normal distribution data. The procedure was done by the writer as follows:

- The writer collects the data based on the teachers' presence, there are six class of the first year of SMP Muhammadiyah 3 Bandar Lampung.

- Then, the six classes name is written in the rolled paper and put into a glass.
- The glass is shaken and poured. The rolled paper which come out will be the sample.
- Finally, there are 37 students of VII E Class that is choosen as the sample of this research.

3.3 Research Instruments

3.3.1 Questionnaire of Self-Esteem

In this research, the writer is used the Rosenberg self-esteem scale as the instruments to measure the self-esteem. The questionnaire consists of ten items with items are answered on a four point scale (strongly agree = SA, agree = A, disagree = D, and strongly disagree = SD). Items 1, 2, 4, 6, and 7 are positively worded and items 3, 5, 8, 9, and 10 are negatively worded. The result of self-esteem is calculated based on the score of every statement. If the score is high, it means that the students have high self-esteem. The writer translated this questionnaire that has been developed by Rosenberg (1965) in Indonesian because the research's objects are the Indonesian students.

3.3.2 Reading Comprehension Test

The writer administered reading comprehension test for the students to measure the students' comprehensibility in reading. Based on the result of level difficulties

and discrimination power (see Appendix 5), there were 26 questions in the reading comprehension try out are good but the writer used only 20 good questions on the reading comprehension test to measure the students' reading comprehension achievement. The range of the test score is 0-100. Every correct answer was given 5 point and 0 for the wrong one.

3.3.3 Interview

The writer interviewed the students for knowing what the problems that are faced by the students with low self-esteem in reading comprehension. This interview is also used to strengthen the result of this research that self-esteem affect the students' reading comprehension achievement and the students with high self-esteem can comprehend the text better than the students with low self-esteem. The writer administered this interview when she did the pre-observation before she gave self-esteem questionnaire and reading comprehension test for the students.

3.4 Research Procedure

To do this research, the writer prepared some research procedures, as follows:

1. Determining research problems
2. Determining research objectives

The objectives of the research are to investigate whether there is significant effect of students' self-esteem on their reading comprehension achievement, do the students with high self-esteem get reading comprehension achievement

better than students with low self-esteem or not, and what problems that are faced by the students with low self-esteem in reading comprehension.

3. Deciding the research sample

The sample of this research is the first year students from SMP Muhammadiyah 3 Bandar Lampung. There are seven classes for the first year students from SMP Muhammadiyah 3 Bandar Lampung. The writer chose the sample based on seven classes in that school by using lottery

4. Planning research instrument

a. Interview

The writer made some questions for the students as the questions of interview that consists of seven questions.

b. Questionnaire of self-esteem

The questionnaire of self-esteem is ten items with each items are answered on four point scale (Strongly Agree, Agree, Disagree, and Strongly Disagree). Items 1, 2, 4, 6 and 7 are positively worded and items 3, 5, 8, 9 and 10 are negatively worded.

c. Test of reading comprehension

The reading comprehension test is multiple choice tests which consist of 20 questions. The range of the test score is 0-100. The right answer gave 5 point and wrong answer gave 0 point.

5. Asking the interview

The writer asked the interviewing questions to the students.

6. Administrating self-esteem test

The writer gave the self-esteem's questionnaire to the students.

7. Administrating reading comprehension test

The writer gave the reading comprehension test to the students.

8. Collecting the data

Having administrated the tests, the data which were gotten from the result of two tests were collected by the writer.

9. Analyzing the data

The writer analyzed the data by using *One-Way Anova* which had been computed by SPSS to investigate whether there is a significant effect of students' self-esteem on their reading comprehension achievement, do the students with high self-esteem get reading comprehension achievement better than students with low self-esteem or not, and what the problems that are faced by the students with low self-esteem.

3.5 Scoring System

In scoring system of the students' reading comprehension test, the writer used Arikunto's formula (1997:212). The writer calculated the students' reading comprehension scores by using this formula:

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

Note:

S : The Score of the test

R : The right answers

N : The Total Items

3.6 The Criteria of Good Test

This section concerns with the criteria which should be had by the good test such as reliability, validity, level of difficulties, and discrimination power.

3.6.1 Reliability

Reliability is the consistency of the instruments to be the instruments that can measure the same data in the different times but still show the similar result relatively (Setiyadi, 2006:16). Therefore, the instruments can be used to measure the data in the research if the instruments have a good reliability. Kimberlin and Winterstein (2008) states that reliability estimates are used to evaluate (1) the stability of measures administered at different times to the same individuals or using the same standard (test–retest reliability) or (2) the equivalence of sets of items from the same test (internal consistency) or of different observers scoring a behavior or event using the same instrument (integrated reliability).

a. Reliability of the Questionnaire

In quantitative research, reliability analysis is described in form a data statistic by using the correlation which was measured from the coefficient score (0-1). The coefficient score is performed by the Cronbach's alpha coefficient. The higher alpha shows that the questionnaire more reliable.

b. Reliability of the Test

In this test of reliability, the writer used *the split-half method* that divided the number of the test become into two groups: odd and even.

The formula which was used:

$$r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Notes:

r : coefficient or reliability between first and second half group

x : total number of the first half group

y : total number of the second half group

x^2 : the square of the X

y^2 : the square of the Y

(Lado in Hughes, 1991:3)

After that, the researcher continued the calculation by using formula of *Spearman Brown* (Hatch and Farhady, 1982: 268):

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

Note:

rk : the reliability of the test

rl : the reliability of the half test

The criteria of reliability:

0,90 – 1,00 : high

0,50 – 0,89 : moderate

0,00 – 0,49 : low

3.6.2 Validity

A test can be said to be valid if it measures the object to be measured and suitable for the criteria (Hatch and Farhady, 1982:250). It means that the test or instrument which is used in the research can be said valid if the instrument measures the object to be measured and suitable with the criteria which is used in the research.

Setiyadi (2006:22) states that the instruments or tests are not valid if the instruments do not measure the object to be measured. He said that in the research of the foreign language learning, there are four types of validity of instruments or tests: face validity, predictive validity, content validity, and construct validity.

The face validity focuses on the layout or appearance of the test. Predictive validity is interrelated with the prediction the phenomena that will happen. For this research, the writer used content validity and construct validity to measure the validity of the instruments or tests were good or not. The two types that were used in this research are:

a. Content Validity

This validity concerns with the content details of the instruments. This validity analysis analyzes all the content of the instruments or tests whether the content of the instruments represents the material that would be measured by the instruments. The content of the test was presented by the table below:

Table 2. Table of specification

No	Objectives	Item Numbers	Total Items	Percentage
1	Identify the main idea	1, 8, 16, 20, 28	5	17%
2	Inference	2, 12, 13, 18, 27, 29, 30	7	23%
3	Reference	6, 11, 14, 23	4	13%
4	Specific information	3, 4, 9, 10, 17, 21, 24, 25, 26	9	30%
5	Vocabulary	5, 7, 15, 19, 22	5	17%
Total			30	100%

b. Construct Validity

This validity was used to the instruments which have some indicator to measure one aspect. The construct validity of the instruments are measured by evaluating the content whether all the content of the instrument concern to one aspect or not.

3.6.3 Level of Difficulties

The writer used the following formula to see the level of difficulty of the tests. It was calculated by the following formula:

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

Notes:

LD : level of difficulties

R : the number of the students who answer correctly

N : the total number of the students

(Shohamy, 1985:79)

3.6.4 Discrimination Power

The writer used the following formula to see the discrimination power:

$$DP = \frac{\textit{the proportion of upper SS} - \textit{the proportion of lower SS}}{\frac{1}{2} \textit{ total number students}}$$

(Shohamy, 1985:81)

The criteria were:

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

(Shohamy, 1985:82)

3.7 Data Analysis

In this research, there are two variables: independent and dependent variable. To collect the data of this research, the writer used test for two variables, they are self-esteem test and reading comprehension test. Self-esteem is the independent variable because the writer assumes that self-esteem influences the students' reading achievement. The students' reading achievement is classified as the dependent variable which is affected by the self-esteem. Having collected the data of two variables, the writer analyzed the data by using *One-Way Anova* with the significant value 0.05 that was computed by using SPSS.

3.8 Hypothesis Testing

The writer determined the criterion of the hypothesis acceptance. To decide whether the first hypothesis were accepted or rejected, the following criterion acceptance were used:

$$H_0 = F_{\text{value}} < F_{\text{table}}$$

$$H_1 = F_{\text{value}} > F_{\text{table}}$$

Notes:

H_0 : there is no significant effect of students' self-esteem on their reading comprehension achievement

H_1 : there is a significant effect of students' self-esteem and their reading comprehension achievement

From the statements above, it means that:

1. If $F_{\text{value}} > F_{\text{table}}$, it means that H_1 is accepted and the null hypothesis (H_0) is rejected. It means that there is a significant effect of students' self-esteem on their reading comprehension achievement.
2. If $F_{\text{value}} < F_{\text{table}}$, it means that H_1 is rejected and the null hypothesis (H_0) is accepted. It means that there is no significant effect of students' self-esteem and their reading comprehension achievement.