

III. RESEARCH METHOD

This chapter is divided into six parts; they are research design, population and sample, research procedure, scoring system, data treatment, and hypothesis test as important information to have clear description of research method.

1.1 Research Design

The objective of this research is to find out whether there is any significant difference of students' reading comprehension achievement by applying SQ3R technique and translation technique in two classes of second year of SMP Negeri 8 Bandar Lampung.

The writer applied *control group pretest posttest design* (Setiyadi, 2006-143). The writer selected two classes, one as experimental group one and the other one as the experimental group two. They were given a treatment of teaching reading for three times adjusted to the material given. The experimental group one were taught by applying SQ3R technique and the experimental group two will be taught by translation technique.

The research design can be presented as follows:

$$G1 = T1 X1 T2$$

$$G2 = T1 X2 T2$$

Where:

G1 : Experimental class I (Experimental group)

G2 : Experimental class II (Control Group)

T1 : Pretest

T2 : Posttest

X1 : Treatment (Applying SQ3R Technique)

X2 : Treatment (Applying Translation Technique)

(Setiyadi, 2006: 143)

In the research, pretest was conducted by using a reading test provided by the writer. The posttest was given at the end of the treatments. The treatment was conducted for three times adjusted to material in book.

1.2 Population and Sample

The population of the research was the students of the second year students of SMP Negeri 8 Bandar Lampung. The writer took one class as try out class and two classes as the sample of the research, one class as experimental class I and

another class as experimental class II. In choosing two experimental classes the writer used simple random probability sampling by firstly making sure that the students' abilities are homogeneous. To make sure that the students' abilities are homogeneous the writer saw from the data of the teacher in the school. The two experimental classes were chose randomly by using lottery drawing.

1.3 Data Collecting Technique

In this research, the writer used reading test as the instrument to gather the data. The reading test consists of pretest and posttest in multiple choice forms. The multiple choice form was chose because it can be calculated statically in order to see the reliability, level of difficulty and discrimination power of the test. Besides that, it is more objective type of the test as instrument for collecting the data.

1.4 Research procedure

The procedures of the research are as follows:

1) Determining the sample of the research

The first step in the research, the writer took three classes, as try out class, experimental class I and experimental class 2. The try out test was administered on Mei 02nd, 2012 in class 8 G. The writer chose 8 E as experimental Class 1 and 8 F as experimental Class 2. The sample was chose randomly.

2) Determining research instrument

The material which was used in reading test (pretest and posttest) was taken from the students' book *Linked to The world 2* and authentic materials (i.e. taken from internet).

3) Administering the try out test

The writer conducted try out test in order to find out whether the test items that was used in the research are good or not, it is considered from the validity, reliability, level of difficulty, and discrimination power.

In try out test, the writer provided 50 items of multiple choices test with four options (a, b, c, d), one is correct answer and the others are distracters. The period took 90 minutes. The scoring system is that the score of each correct answer is 2 points. Therefore, if any student answers all the items correctly, they get 100 points.

4) Administering the pretest

This test was designed to find out the students' basic reading comprehension achievement. The writer conducted pretest before treatment by using reading text. The test period took 60 minutes.

5) Conducting Treatment

After giving the pretest to the students, the writer taught the students reading comprehension in a reading text by using SQ3R technique for the experimental class I and translation technique for the experimental class II. The writer conducted three times of treatment in three meetings, which takes 90 minutes in each meeting. The result of treatment is discussed in chapter 4.

6) Administering the posttest

The writer administered posttest after treatment. The purpose of conducting posttest was to find out the result of students' reading comprehension ability after applying SQ3R and translation technique in reading. The test consists 40 items of multiple choices test. The scoring system is that the score of each correct answer is 2.5 points.

After giving three times treatments to the students, the writer administered the posttest to know whether there was any improvement of students' reading comprehension or not. There were 40 items conducted 60 minutes.

2. Scoring system

The writer used Arikunto's formula (2005: 71) in scoring the students' work. The ideal highest score is 100. The score of pretest and posttest were calculated by using the following formula:

$$S = \frac{Rx100}{N}$$

Where:

S = The score of the test

R = The total of right answer

N = The total of items.

3.5 Criteria of Good Test

A test is said to have a good quality if it has good validity, reliability, level of difficulty and discrimination power. Therefore to be used for collecting data the test needed to be tried out in order to determine its validity, reliability, level of difficulty and discrimination power.

1) Validity

Validity of the test is considered in this research. The writer took content and construct validity for this research. The instrument of the test was valid since the writer conducted tried out. A test is said to be valid if it measures accurately what is intended to measure (Hughes, 1991: 22). The validity of the test is presented as follows:

a) Content Validity

It is the extent to which the test measures a representative sample of the subject matter content, the focus of the content validity is adequacy of the sample and simply on the appearance of the test (Hatch and Farhady, 1982: 251). It is intended to examine whether

the items of the test are good representation of the material that need to be tested (Shohamy, 1985: 75). It means that the items of the test are good reflection of what would be covered.

To know whether the test has a good content validity the writer will compare the test with spesification. If the table represents the material that the writer wants to test, then it is valid from that point of view. The writer specifies the aspects to be tested as in the table as follows:

Table 1. Table of Specification of Try out test

No	Skills of Reading	Items Numbers	Percentage %
1	Main Idea	1., 6., 9., 11., 17., 22., 25., 26., 27., 30., 36., 39., 41., 45.	28 %
2	Specific information	2., 7., 12., 13., 14., 16., 18., 19., 21., 28., 33., 34., 40., 42., 44., 46.	32 %
3	Inference	4., 23., 24., 29., 31., 37., 38., 47., 49.	18 %
4	Reference	8., 15., 32., 50.	8 %
5	Vocabulary	4., 5., 10., 20., 35., 43., 48.	14 %
Total		50	100 %

b) Construct Validity

This validity measures whether the construction had already referred to the theory, meaning that the test construction had already in line with the objective of the learning (Hatch and Farhady, 1982: 251). The word 'construct' refers to any underlying

ability (or trait) which hypothesized in a theory of language ability (Huges, 1991: 26).

2) Reliability of The Test

According to Hach and Farhady (1982: 243), the reliability of a test can be defined as the extent to which a test procedures is consistent with the result when administered under similar conditions.

To estimate the reliability the reliability, the writer used the split-half method.

To measure the coefficient of the reliability between odd and even number, the writer uses the following formula:

$$r_1 = \frac{\sum xy}{[\sum x^2] [\sum y^2]}$$

Where :

r_1 = Coefficient of reliability between first-half and second half groups

x = Total number of first half group

Y = Total number of second group

x^2 = Square of x

y^2 = Square of y

Then the writer used "Spearmen Brown's Prophecy formula (Hatch and Farhady, 1982: 286) to know the coefficient 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

0.00 – 0.49 : Low

(Hatch and Farhady 1982: 286)

3) Level of Difficulty

To see the difficulty of the test, the writer used the following formula:

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

Where:

LD = Level of difficulty

R = The number of the students who answer correctly

N = The number of the students

The Criteria are:

LD < 0.30 : Difficult

LD 0.30 – 0.70 : Average

LD > 0.70 : Easy

(Shohamy, 1985: 79)

4) Discrimination Power

To see the discrimination power whether the students master the materials or not, the formula used is as follows:

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

Where:

DP = the discrimination power

U = the number of upper group who answer correctly

L = the number of lower group who answer correctly

N = total number of the students

The criteria are:

1. If the value is positive, it has positive power discrimination because a larger number or more knowledgeable students than poor students get item correct. If the value is zero, there is no discrimination.
2. If the value is negative, it has negative discrimination, because more low-level students than higher-level students get the item correct.

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

5) Data analysis

After collecting the data, the writer calculated the average score of the pretest and posttest. It is necessary to know whether there is a significant difference of treatment given by the writer. The writer calculates the students' score by doing activities:

1. Scoring the pretest and posttest.
2. Tabulating the result of the test and calculating the average score of the pretest and posttest.
3. Drawing the conclusion from the tabulated result of the pretest and posttest administered; that is by analyzing the data using independent group T-test formula through computing by SPSS version 17.0

6) Data Treatment

According to Setiyadi (2006: 169), using T-test for hypothesis testing has three basic assumptions, there are:

1. The data is interval or ratio
2. The data is taken from sample
3. The data is distributed normally

Therefore, the writer used these following procedures in the data treatment:

1. Random Test

Random data is used to make sure whether the data is random or not. It is accepted if the significance is greater than 0.05. As stated by Setiyadi (2006: 168-169), one of the assumption should be fulfilled in using T-Test is that the data should be take from random sample in a population.

The criteria are:

H_0 : the data is random

H_1 : the data is not random

2. Normality test

It was used to test whether the data of the experimental group 1 and the experimental group 2 has normal distribution or not. The writer will use Liliefors formula, that is $F(Z_i)$ in which the highest score was taken as Liliefors ratio (L-ratio)

The criteria are:

H_0 : $L\text{-ratio} \leq L\text{-table}$ (the data distribution is normal)

H_1 : $L\text{-ratio} \geq L\text{-table}$ (the data distribution is not normal)

(Sudjana, 1992: 467)