I. RESEARCH METHOD

This chapter discusses about research design, population and sample, data collecting technique, validity and reliability of the test, procedures of collecting data and hypothesis testing.

3.1 Research Design

This research was quantitative research and the writer used one-group pretest-posttest design. In this research, before the first teaching, pretest was carried out and after three times teachings using the treatment (CIRC technique), a posttest was conducted. This was done to see whether there is a different of students achievement in reading descriptive text. This research design can be presented as follows:

T1 X T2

Where:
T1: The Pretest
X : Treatment
T2: The Post Test
(Hatch and Farhadi in Setiady, 2006:131)

This study is to investigate whether Cooperative Integrated Reading and Composition (CIRC) technique can be used to increase students' reading comprehension achievement in understanding the text by comparing the average score (mean) of the pretest with the average score (mean) of the posttest. Firstly, the researcher administered a pretest to the students to identify their achievement of reading comprehension in identifying the specific information,

main idea, reference, inference and vocabulary in descriptive text before applied the technique. Then, the students were given three treatments by using CIRC technique. Eventually, a posttest was administered to identify students' reading comprehension in identifying the specific information in descriptive text after being taught by using Cooperative Integrated Reading Composition (CIRC) technique.

3.2 Population and Sample

The population of this research was the second grade students of SMPN 1 Kalirejo Lampung Tengah in even semester period 2011/2012. There were seven classes of the second grade of SMPN 1 Kalirejo, from class VIII A to VIII G. Each class consisted of 34 students; the total population was 328 students. The sample was one class as experimental class (VIII A) and therefore VIII B became the try out class, which was selected by using Simple Random Sampling. The class was selected randomly by using lottery, since the 2nd grade in SMPN 1 Kalirejo was not stratified class. There was no priority class. It is applied based on the consideration that every class in the population has the same chance to be chosen and in order to avoid the subjectivity in the research (Setiyadi, 2006:39).

3.3 Data Collecting Technique

To collect the data the writer used the following techniques:

1. Pretest

The writer administrated this test in 60 minutes. The purpose of this test was to know how far the students' ability in mastering descriptive text before the treatment, the test was multiple choices that consist of 25 items. The materials tested were related to the curriculum used in the school and suitable with their level. It was also needed to know their reading comprehension achievement.

2. Posttest

Post-test was given after the treatment in order to find out whether there was any increase of students' reading comprehension achievement. The test was multiple choices consisted of 25 items. The materials tested, were related to the curriculum used in the school and suitable with their level. The post-test was done after three meetings of the treatments. The result of the post-test of the participant class was analyzed.

3.4 Try Out

The tests are said to have good quality if it has a good validity, reliability, and level of difficulty and discrimination power.

3.4.1 Validity of Test

To measure whether the test has a good validity, in this research, the tests are based on the construct validity and content validity.

The validity of the instrument is presented as follows:

a. **Content validity**

Content validity refers to the extent to which a test measures a representative sample the subject matter contents, the focus of the contents validity was adequacy of the sample and simply on the appearance of the test (Hatch and Farhady, 1982:251). To know whether the test is good reflection of what will be taught and of the knowledge, which the teacher wants the students to know, the researcher compares this test with table of specification. If the table represents the material that the researcher wants to test, then it is valid from that point of view. A table of specification is an instrument that helps the test constructor plans the test.

Table 1: Table specification of try out

NO	Objective	Number of items	Presentage
1	Identifying main idea	2., 6., 13., 18., 22., 28., 31., 36.	20%
2	Inference	5., 9., 15., 20., 24., 30., 35., 38.	20%
3	Reference	3., 12., 19., 29., 33., 39.	15%
4	Specific Information	1., 7., 8., 11., 16., 17., 21., 25., 26., 27., 32., 37.	30%
5	Vocabulary	4., 10., 14., 23., 34., 40.	15%
Total		40	100%

From table specification of try out above there were 40 items that divided into 5 objectives, they were identifying main idea 8 items, inference 8 items, reference 6 items, specific information 12 items and vocabulary 6 items.

Table 2: Table Specification for Pre-Test

NO	Objective	Number of items	Presentage
1	Identifying main idea	1., 4., 9., 13., 21., 24.	24%
2	Inference	11., 14., 16., 20., 23.	20%
3	Reference	1., 8., 19., 25.	16%
4	Specific Information	5., 6., 12., 17., 18., 22.	24%
5	Vocabulary	2., 7., 10., 15.	16%
Total		25	100%

While, in pre-test the total items were 25 items. From table specification of the pre-test above, there were 6 items in identifying main idea because there were two items dropped, 5 items in inference 8 items in try out test and 2 items was dropped, 4 items in reference from 6 items in try out test and 2 items dropped , 6 items in specific information from 12 items in try

out test and 6 items dropped and the last were 4 items in vocabulary from 6 items in try out test and 2 items were dropped

Based on the explanation above in identifying specific information, the students were still confuse and difficult in answering the question. It proved from the total items in pretest. The total items in pretest were half items in try out test.

Table 3: Table Specification for Post-Test

NO	**Objective**	**Number of items**	**Presentage**
1	Identifying main idea	1., 9., 11., 14., 21., 23.	24%
2	Inference	2., 6., 10., 18., 24.	20%
3	Reference	7., 12., 19., 20.	16%
4	Specific Information	3., 4., 13., 16., 17., 25.	24%
5	Vocabulary	5., 8., 15., 22.	16%
Total		25	100%

Then, in table specification of post-test the total number of items of post-test were 25 items. Where in identifying main idea were 6 items, inference were 5 items, reference were 4 items, specific information were 6 items and vocabulary were 4 items.

b. **Construct Validity**

Construct 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). To know the test was true reflection of the theory in reading comprehension, the researcher examined whether the test questions actually reflected the means of reading comprehension or not.

3.4.2 Reliability of Test

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 test the instruments, the researcher used *split-half method* in which the reading tests were divided into halves Hatch and Farhady, 1982:246). By splitting the test into two equal parts (first half and second half); it was made as if the whole tests had been taken in twice. The first half contained passage 1, 2, 3 and 4 the items were number 1 until 20. The second half contained passage 5, 6, 7 and 8 involving question number 21 until 40. Moreover, by arranging the tests into first half and second half allowed the researcher to measure the test reliability by having *split half method.*

To measure the coefficient of the reliability between the first and second half, Pearson Product Moment was used, with the formula:

$$r_1 = \frac{\sum xy}{\sqrt{\sum X^2 \sum Y^2}}$$

Where:
r_1 = The coefficient reliability between first and second half group
X = The total numbers of first half group
Y = The total numbers of second half group
X^2 = The Square of X
Y^2 = The square of Y
(Lado in Hughes, 1991:3)

Then to know the coefficient correlation of the whole items, Spearman Brown formula is used:

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

Where:
rk : The reliability of the test
rl : The reliability of the half test
The criteria of reliability were:
0.90-1.00 = high
0.50-0.89 = moderate
0.0-0.49 = low
(Hatch and Farhady, 1982:268)
If the reliability the test reaches 0.50 the researcher will consider that it has been reliable. Hatch and Farhady (1982:223) stated that level of reliability about 0.90-1.00 indicates that this instrument would produce consistent result when administered under similar condition to the same participant and in different time.

3.4.3 Level of Difficulty

Level difficulty of the reading test is used to classify the test items into difficult items and easy ones. The items should not be too difficult or too easy for the students. In this research, reading tests consisted of two kinds: one for pretest and the other for posttest. Before being used, both kinds of the tests are tried out, the results of which are explained in this season.

In calculating the Level of Difficulty for each item, the following formula was used:

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

LD = Level of Difficulty
R = Number of the students who answer correctly
N = Total number of the students

The criteria were:

<0.30 = Difficult
0.30-0.70 = Average
>0.70 = Easy
(Shohamy, 1985:79)

3.4.4 Discrimination Power

The discrimination power (DP) is the proportion of the high group students getting the items correct minus the proportion of the low-level students who get the items correct. In calculating the discrimination power of each item the following formula was used:

$$DP = \frac{correctUpper - correctLower}{1/2N}$$

DP = Discrimination Power
U = Number of upper group who answer correctly
L = Number of lower group who answer correctly
N = Total number of the 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 : - (Negative) = Bad items, should be omitted
(Heaton, 1975:182)

3.4.5 Scoring System

In scoring the result of the test, the researcher used Arikunto's formula. This ideal highest score is 100. The score of pretest and posttest was calculated using formula as follows:

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

Where:

S : The score of the test
R : The total of highest answers
N : The total items

3.5 Procedures of Collecting Data

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

1. *Determining the Problem*

   The first step of this research was determining the problem. The writer determined what kind of problems appear in the class.

2. *Determining the population and sample of the research:* The population of this research was the second grade students of SMP N 1 Kalirejo, Lampung Tengah. The sample of this research was one class which is chosen randomly.

3. *Conducting try out*

   There are 40 items. The try out test was administered in 60 minutes. The aim of this try out was to know the quality of test, which would be used as instrument of the research.

4. *Administering the pre-test*: pre-test was conducted before the treatments. It was done to check students reading comprehension to identify the specific information in various types of texts. Pre-test was administered for about 60 minutes on 1st week.

5. *Giving treatment*: three treatments by using CIRC technique were given in two weeks. The treatments was conducted in three meeting and 80 minutes for each. The treatments were classroom activity, which used and applied CIRC technique in teaching reading.

6. *Conducting posttest*: Posttest was conducted after the treatment. Post test was conducted to find out whether there is a significant increase in students reading achievement in identifying the specific information after the treatments. It was administered for 60 minutes in experimental group.

7. *Analyzing the data*. The data of pre-test and post-test are put into a score table and it is used to see the significant increase of students' score in reading comprehension.

3.6 Hypothesis Testing

The hypothesis is stated as follows: There is difference of students' comprehension achievement in reading descriptive text after being taught through CIRC (Cooperative Integrated Reading and Composition).

The researcher compared the pre-test and post-test score by using Repeated Measure t-test through computing with Statistical Package for Social Science (SPSS) version 15.0 for window. The researcher used the level of the significance 0.05 in which the hypothesis is approved if Sign $< \alpha$. It means that the probability of error in the hypothesis is only 5%.