III. RESEARCH METHOD

In order to answer the research question and to achive the objective of the research, research method should be constructed thoroughly. The research method consists of research design, subject of the research, data collecting technique, research procedures, scoring system, analysis of research instrument, data analysis, data treatment, and hypothesis testing.

3.1. Research Design

This research was a quantitative research. It was carried out to find out whether there was a significant difference of students' reading comprehension achievement between those who were taught through information transfer and translation technique. The design used in this research was control group pretest-posttest design with experimental and control class and techniques. It was used since this research was a matter of comparing two techniques. Therefore, before giving three times treatment, pretest was carried out to determine the preliminary ability of students in comprehending the text. Meanwhile posttest was conducted to find out the improvement of students' reading comprehension achievement. These steps were applied to both classes. Transfer information technique was implemented in experimental class while Translation technique was used in control class. Thus, the research design can be presented as follows:

G1 = T1 X1 T2

G2 = T1 X2 T2

Where:

G1 represents an Experimental Class

G2 deals with Control Class

T1 represents Pretest used to measure students' preliminary reading achievement

T2 represents Post test conducted to measure the improvement of students' reading achievement.

X1 deals with Teaching reading by using information transfer technique

X2 represents Teaching reading by using translation technique

(Hatch and Farhady, 1982)

Referring to design above, it can be concluded that there are two independent variables; they are information transfer and translation technique. Meanwhile, the dependent variable is students' reading comprehension achievement.

3.2. Subject of the Research

The subject of this research was two superior classes in the third grade students of SMPN 1 Natar. There were actually twelve classes of the third year students. Each class consisted of approximately 31 students. The research took two classes as the experimental classes by using purposive sampling since they were purposively taken as the subject of the research in which this research was only compared two superior classes in SMPN 1 Natar.

3.3. Data Collecting Technique

This research has aim at gaining the data on the students' reading achievement before the treatment (pretest) and after treatment (posttest). Therefore, reading test which consisted of pre-test and post test were employed. The pre-test and post-test are described as follows:

1. Try Out Test

   This test has an aim at knowing the validity and reliability of the test. The test was administered before the pretest. The total items are 40 and it was allocated within 80 minutes.

2. Pre-test

   The pre-test was conducted before the treatment. It is used to know the students' achievement in reading by using translation technique and information transfer technique in authentic material especially in advertisement before they were given the treatment. The students were asked to answer 25 items of multiple choices about advertisement. The pretest was conducted in 50 minutes. The items in pre-test were selected from 40 items of tryout test.

3. Post-test

   The post test was conducted after treatments. It is used to know the improvement of students' reading achievement in reading by using translation technique and information transfer technique in authentic

material especially in advertisement. There are 25 items which had been randomly selected from pre-test. This test was conducted in 50 minutes.

3.4. Research Procedures

In research procedures, the researcher carried out the following procedures which can be described as follows:

1. Determining subject of the research

   The subject of this research was the third year students of SMP Negeri 1 Natar Lampung Selatan. The subjects of this research were two superior classes, IX A and IX B.

2. Selecting and determining the materials

   The materials were based on the School Based Curriculum (KTSP) 2006 for the third year students. They are authentic material taken from *Lionmag Magazine.* As has been discussed in Chapter 1, this research focused on advertisement.

3. Administering Try-Out Test

   The try-out test was administered in other class. Students were given advertisement texts with 40 items of multiple choices in 80 minutes.

4. Administering Pre-Test

   Pre-test was administered to reveal the students' basic reading comprehension before treatments. Pre test was employed in both experimental and control

class. The test was administered in 50 minutes with 25 items of multiple choices reading test.

5. Conducting the Treatments

   The treatments were employed in two classes. The first was experimental class which gets Information Transfer Technique while the second was control class which got translation technique. Each class was taught three times by the researcher.

6. Administering Post-Test

   Post-test was given at the end of treatments in order to find out the significant increase in students' reading comprehension achievement. Post test was conducted in both classes; they were experimental and control class. The test was administered in 50 minutes with 25 items of multiple choices reading test.

7. Analyzing the result of the Test

   The data were analyzed by comparing the main score of the posttest within experimental class and control class to know whether there was a difference of students' reading comprehension achievement before and after being taught through information transfer and translation techniques. The data were analyzed by using *Independent T-Test* which was computed by SPSS 15.

3.5. Scoring System

In scoring the students' work, the researcher used Arikunto's formula (2005:236). The ideal highest score was 100. The score of pretest and posttest are 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)

3.6.. Analysis of Research Instrument

A good test should meet four criteria: a good validity, reliability, level of difficulty and discrimination power.

1. Validity

Validity refers to the extent to which the test measures what is intended to measure. This means that it relates directly to the purpose of the test (Shohamy, 1985:74). There are four types of validity, namely face validity, content validity, construct validity, and empirical validity or criterion-related validity. To measure whether the test has a good validity, the researcher used content validity and construct validity. Face validity only concerns with the lay out of the test while

the criterion-related validity is concerned with measuring the success in the future, as in replacement test (Hatch and Farhady, 1982:251). So these two validities are considered to be less needed. Therefore, the two types of validity used in this research as follows:

1. Content Validity

   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 adequacy of the sample and not simply on the appearance of the test (Hatch and Farhady, 1982:251).

2. Construct Validity

   Construct validity is concerned with whether the test is actually in line with the theory of what it means to know the language (Shohamy, 1985: 74).

In this research, the researcher formulates table of specification, so every test items can be matched with the goal and the materials have been taught. The table of specification is an instrument that helps the test constructor plans the test. The content of the test items is presented in the table of specification below that based on the theory of reading (Milan, 1995) and curriculum:

Table 1. Table of specification of reading test in pre-test

No.	Objective		Percentage	total	Instrument Number
1.	Comprehension	Finding specific Information	32%	8	1, 3, 8, 13, 14, 15, 24, 25
2.	Inferences	Making Inferences	40%	10	2, 5, 7, 11, 12, 16, 18, 19, 20, 22
3.	Vocabulary in context	Finding similar meaning	28%	7	4, 6, 9, 10, 17, 21, 23
Total			100 %	25	

The percentage of number of the test was determined by referring to the previous theories. Making inference took a bigger part than finding specific information and similar meaning because inference is categorized as a comprehension skill by means of getting information which is not stated or implied on the text (Divinia, 2009).

2. Reliability

Shohamy (1985:70) stated that reliability refers to the extent to which the test is consistent in its score, and it gives an indication of how accurate the test score. The researcher used split-half method to estimate the reliability of the test, since the formula is simple. It is because (1) it avoids troublesome correlation and (2) in addition to the number of item in the test, it involves only the test, mean and standard deviation, both of which are normally calculated anyhow as a matter of routine. To measure the coefficient of the reliability the first and second half group, the researcher used the following formula:

$$r_l = \frac{\sum XY}{\sqrt{[\sum X^2][\sum Y^2]}}$$

Where:

r_l : coefficient of reliability between the first half and the second half items

X : total numbers of odd numbers items

Y : total numbers of even numbers items

X^2 : square of X

Y^2 : square of Y (Lado in Hughes, 1991: 3)

To know the coefficient correlation of whole items, the researcher used *Spearman Brown's Prophecy Formula* (Hatch and Farhady, 1982: 247). The formula is as follows:

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

Where:

rk : the reliability of the test

rl : coefficient of reliability between the first half and the second half items

(Hatch and Farhady, 1982: 247)

The criterion of reliability is:

0.90 – 1.00 : high

0.50 – 0.89 : moderate

0.0 – 0.49 : low

3. Level of Difficulty

Difficulty level relates to how easy or difficult the item is from the point of view of the students who take the test. It is important since the items, which are too easy (that students get right) can tell us nothing about differences within the test population. To see the level difficulty, the researcher used the formula as follow:

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

Where:

LD : level of difficulty

U : the proportion of upper group students who answer correctly

L : the proportion of lower group students who answer correctly

N : total number of students

The criteria are:

< 0.30 = difficult

0.30-0.70 = average

>0.70 = easy

(Shohamy, 1985:79)

4. Discrimination Power

This index refers to the extent to which the item differentiates between high and low levels students on the test. A good item according to this criterion is one that good students do well on and bad students fail. To see the discrimination index, the writer used the following formula:

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

(Shohamy, 1985:81)

Where:

DP : discrimination power

U : the proportion of upper group students who answer correctly

L : the proportion of lower group students who answer correctly

N : total number of students

The criteria are:

1. If the value is positive discrimination – a large number or more knowledgeable students than poor students get the item correct. If the value is zero, it means that there is no discrimination.

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

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

(Shohamy, 1985:82)

3.7. Data Analysis

The data was analyzed in order to determine whether the students' reading comprehension achievement is increase or not. The researcher was examined the students' score by doing the following steps:

1. Scoring the pretest and posttest.
2. Tabulating the results of the tests and calculating the scores of the pretest and posttest.

3. Drawing conclusion from the tabulated results of the pretest and posttest which statistically analyzed using *Independent Group T-Test* computed through SPSS 15.

3.8. Data Treatment

According to Setiyadi (2006: 168-169), using t-test for the hypothesis testing has three underlying assumptions, namely:

1. The data is interval ratio.
2. The data is taken from random sample in a population.
3. The data is distributed normally.

Therefore, the researcher used the following procedures to treat the data treatment:

1. Normality test

Normality test is used to measure whether the data in experimental class and control class are normally distributed or not (Setiyadi, 2006: 168-169). The students' scores of pretests and posttests both group are analyzed to gain the normality test. The hypotheses for the normality test are as follow:

H_0 : the data is not distributed normally

H_1 : the data is distributed normally

In this research, H_1 is accepted if $p > \alpha$, and the researcher used level of significance 0.05.

2. Homogeneity Test

As stated by Hatch and Farhady (1982: 57-59), the homogeneity of the item test was measured to test whether the data of the posttest from the experimental class and from the control class have homogenous variance or not. This test was analyzed by *Independent t-test.* The hypothesis for the homogeneity test of pre-test is as follows:

H_0 : there is no significant different in the level of ability (equal)

H_1 : there is a significant difference in the level of ability (not equal)

3.9. Hypothesis Testing

The hypothesis testing is used to prove whether the hypothesis proposed in this research is accepted or not. SPSS was used to know the significance improvement of treatment effect. The hypothesis was analyzed at the significant level of 0.05 ($p< 0.05$). The formulation to find the significant ratio or value can be seen as follows:

$$SD = \frac{\sqrt{\sum d^2 - (1/n)(\sum d)^2}}{n-1} \qquad Sd = \frac{SD}{\sqrt{n}} \qquad r = \frac{T_1 - T_2}{Sd}$$

$$df = n - 1$$

Notes:

r : Ratio

T_1 : Mean from pre-test

T_2 : Mean of post-test

S_d : Standard error of differences between means

d : Error of differences between mean

n : Subjects on sample

SD : Standard Deviation

df : Degree of freedom

(Hatch and Farhady, 1982)

In this case, *Independent group t-test* was used in this research. The formulation of hypotheses can be seen as follows:

1. H_0 : There is no significant difference of students' reading achievement between those who are taught through information transfer technique and those who are taught through translation technique by using authentic material.

   H_1 : There is significant difference of students' reading achievement between those who are taught through information transfer technique and those who are taught through translation technique by using authentic material.