

III. RESEARCH METHOD

A. Research Design

This research was intended to find out whether there was any significant difference of students' reading comprehension achievement between those who were taught by applying information transfer technique and those who were taught by applying translation technique.

The quantitative research with Intact Group Pretest Posttest Design was conducted to gain the objective of this research. There were two classes; one was as the experimental group I and the other was the experimental group II.

The design of the research was presented as follow:

G1 = T1 X1 T2

G2 = T1 X2 T2

Where

G1 : Experimental class I

G2 : Experimental II

T1 : pretest

T2 : posttest

X1 : treatment (applying information transfer technique)

X2 : treatment (applying translation technique)

(Setiyadi, 2006, 134 -135)

The experimental I (applying translation technique) was used as the comparison of students' achievement in experimental class II (applying translation technique) to see which one the better technique of the treatments in increasing the students' reading comprehension achievement. In experimental class I, the researcher administered the treatments by applying information transfer technique. While in experimental II, the teaching process was done by applying translation technique, the technique that used in regular teaching. Both classes received the same pretest and posttest. Then researcher analyzed the result of pretest and also posttest from both the experimental classes and finally the hypothesis was proved by comparing the data from posttest of both groups.

B. Population and Sample

The population of the research is the first year students of SMA Negeri 2 Pringsewu. There are seven classes of the first year students. Each class consists of about 34 students. The research took two classes as the experimental classes, and one class as the try-out class. In order to make sure the sample that had been used was homogeneous, so the researcher selected some classes that had the homogeneity based on their English score in learning report. The classes that have the same ability in English are X4 and X3. Both of the classes have the mean score of English in their learning report

were 70 in X4 and 71 in X3. After the sample was homogeneous, the researcher used lottery drawing to choose which class that would be used as the experimental class I and experimental class II. So, the class that used as experimental class I was X4 (applying information transfer) and the class used as experimental class II was X3 (applying translation), meanwhile the class chosen as try out class was X5.

D. Research Procedures

The procedures of the research were as follows:

1. Determining the Samples of the Research

The first step in the research was selecting the class as the sample. The researcher took three classes, as try out class, and experimental classes. The class used as try out class was X5, X4 as experimental class I and X3 as experimental class II by lottery drawing.

2. Determining the Research Instrument

The instrument of this research was reading test that consisted of a pretest and posttest. The tests were in the form of multiple choice tests consisted of 20 items. In giving the treatments, reading texts that had been used were taken from English book for the first year students of SMA and authentic materials, (such as taken from magazines and internet). There were three reading texts used in this research. The type of the text used was descriptive text with topic; describing famous people, famous places, and buildings. Both of the item of

pretest and the posttest were the same, but in different arrangement in item test and options.

3. Administering the Tryout Test

The researcher conducted try out test in order to find out whether the test items that used in the research were good or not for validity, reliability, level of difficulty, and discrimination power.

In this test, the researcher provided 50 items of multiple choices tests with five options (a, b, c, d or e), one was correct answer and the rest were distracters.

The scoring system was that the load of each correct answer was 2 points.

Therefore, if one participant answered all the items correctly, she/he got 100 points.

The researcher used split-half method to measure the reliability which requires her to divide the test into same groups, first half and second half.

Some items were dropped and revised to administer in pretest and posttest.

The try out test consisted of three easy items, 29 average items and 18 difficult items. Meanwhile, for discrimination indexes, eight items were bad, 15 items were poor, ten items were good, 14 items were satisfactory, and three items were excellent. For detail information, see Appendix 4.

Items that have average remark in the level of difficulty and excellent or satisfactory or good for the discrimination power were selected used for the test (2,4,6,9,11,12,15,22,25,27,28,29,30,38,40). Moreover, the items that were

easy and difficult but had excellent, satisfactory and good discrimination were revised. The revised items were 8,10,14,21,39. The items with negative and zero discrimination power were dropped and also the items that were easy and difficult in the level of difficulty and also had poor discrimination power were dropped. Eventually, the items that were administered for both of the pretest and posttest were 20 items.

4. Administering the Pretest

The pre test administered in order to check reading comprehension homogeneity of both groups before the treatment. The researcher conducted pretest before treatment by using reading text and 20 items of multiple choice test for 45 minutes. The scoring system was that the each correct answer was 5 points. If one participant answered all the items correctly, she/he got 100 points.

5. Conducting Treatment

After the pretest was given to the students, researcher taught reading comprehension in reading a text by using information transfer technique for the experimental class 1. Meanwhile in experimental II the students were taught using translation technique. The treatment conducted for three times meetings during the research, which took 90 minutes for each meeting.

The general process of the treatment was described as follow:

Experimental Class I (Applying Information Transfer Technique)

At the first treatment, the researcher introduced information transfer to the students and explained how to use it in reading comprehension. She firstly brainstormed the text to the students; it was intended to make the students get used to being directed and activating their schemata about the topic so it will make them easy to comprehend the text. This can be done by giving them some warm- up questions or giving them a purpose for reading. In this way, the students will enjoy learning language and develop a positive attitude towards reading. The title of the text was used in the first meeting is *Egypt*, here the researcher asked some questions to brainstorm students' background knowledge. Such as, "*Where does Egypt locate?*" the students answered, "*It is in Africa*" other questions, "*What can you see in Egypt?*" many students mentioned "*Pyramids, Pharaoh, Mummy, camels, etc*" some students answered in English or in Indonesia.

In this treatment, the researcher explained about information transfer technique in reading. Then she gave example how to change information from a text into other forms. The students were asked to pay attention on what and how to use in reading, then as the exercise, they were asked to complete a task prepared by researcher. In this task, the students were asked to fill the map and a chart based on reading text entitles '*Egypt*'. At first, the researcher distributed the picture of the map to the students and also the table. After reading the text, the teacher asked the students to look up at the map; there were some missing information that had to be completed. So, the researcher

guided the students to find out the right information. They had to complete the name of the towns mentioned in the text.

After completed the map, the researcher leaded a class discussion about the text. Some students were asked about their work, so there was a feedback given after reading and transferring information from linguistic into non linguistic form. In this discussion, some students said that they found some mistakes in filling the map and also the table. Moreover, the students also asked some words that unfamiliar for them. And the researcher also asked some questions orally as the assessment, such as “Where *does Luxor locate?*” they answered “In *Egypt, in Cairo, after Qena*”.

In the second treatment, the students already got used to apply information transfer in their reading. They already know the basic steps of making information transfer. The topic used in this stage was describing people. In this stage, the students started filling a map together in group and the researcher acted as a guide- on- the side. Before the students reading the text, some questions were asked to brainstorm their background knowledge. The researcher asked some questions, such as “*Have you ever read a text with the topic of describing people?*” most of them answered, “*Yes*”. Then other questions followed, “*What can of information that can be found in that text?*” they answered, “*Name, address, physical description and so on*”. After that the students were asked to read a text and they had to pretend that they were the person in the text because they have to fill an application form to enroll in

model agency. During the session of discussion in filling the map; it was found that the students were more active to follow the teaching learning process as they could share their opinion although there were few groups looked dominating the discussion and the class was little noisy. It also proves one of disadvantages of applying information transfer which is proposed by Nation (1991: 56- 59) that by applying information transfer, the class will be noisy.

Just like in the first treatment, in the second treatment the researcher also conducted class discussion as a feedback for the students. Not only give the right answers for the students' work, the researcher also asked some questions as assessment for the students.

In the last treatment, the students were asked to make their own information transfer (building map) of a text that the researcher had distributed to them individually. At The text used was about describing building, entitled '*The Tildemann's Bank*'. Like the treatments before, the researcher still asked some questions in brainstorming activity. Then, after reading the text the students were asked to complete the map of the building. They had to give the correct names based on the information given in the text. After the students finished their work, there was a class discussion and also some questions as students' assessment at the end of the meeting.

Experimental Class II (Applying Translation Technique)

The students of experimental class II were also received the same text as the students in experimental class I. The students here seemed to be low- spirited or lazy to read the text. There were only a few students who enjoyed the reading class activity. They seemed passive during the class while the researcher was more dominant.

Here the description of how the researcher conducted the treatment in experimental class II:

In the first treatment, she began with some questions as brainstorming. Since the researcher chose descriptive text, she asked some questions related to the text. The first text was about *Egypt*, so she asked, “*Have you ever heard about Egypt*” and they answered, “*Yes*”, next she asked, “*What can you see there?*” then the students responded, “*Camels, Sahara, Pharaoh, Sphinx and many others*”. After doing brainstorming activity, she asked the students to read the text. Then, the teacher leaded the class to translate the text form English into Indonesia. Since the text quite long, the researcher found difficulty to maintain students focus during the activity. Many students involved in their own conversation. After translating the text, she asked some questions related to the content of the text as the assessment for the students. The class looked enthusiast during the class discussion because they could understand more deeply about the text. They seemed more enjoying class discussion rather than only translating the text from English into Indonesia.

In the second treatment, the researcher brainstormed the students by asking some questions related to the previous material to remember them about the material had been given in the last meeting. Then she asked them question to guide them in following the material would be given. Then the researcher did almost the same step to begin the class except the using of different reading text with the topic describing people. The researcher did the same process of reading stage as the previous treatment. But the students' motivation was not as high as the first treatment; the learning process in the experimental class II was passive. Only some students focused on the teacher's explanation and the others were busy with themselves.

The students were given 45 minutes to finish reading and answering the questions. During the time given many students, especially boys who just looked at their friends worksheet. When the researcher asked them, they answered that they did not know the meaning of all the words in text and did not bring dictionary. When the time was up the activity continued into the class discussion, but very few students who interested to discuss the text and follow the discussion.

In the third treatment the researcher did almost the same step to begin the class except using different reading topic with the topic describing building. But the students' responds became worse. They told to the researcher that they felt bored, because they had to translate a long reading text. Moreover, they just looked at friends' worksheet, since there were many students who said that

they did not know many words in the text. Although, there were some students who were still tried to concentrate and comprehend the text but most of them just read the text passively.

Then the meeting ended by a class discussion, the researcher asked some questions orally dealing with the content of the text. However, many students just followed it without enthusiasm.

6. Administering the Posttest

The posttest given after the students got the treatment. It was aimed at knowing the result of the students' reading comprehension after administered the treatment. It also used to prove the hypothesis proposed in the research whether it was accepted or not. The test consisted of reading text and 20 items of multiple choices test. The scoring system was that each correct answer loaded 5 points. The posttest took 45 minutes.

7. Analyzing the Data (Pretest and Posttest)

Both of the pre test and posttest results of the two classes were treated using normality test, homogeneity test and random test. Normality test was intended to see the normal distribution of the data. Moreover, homogeneity test was employed to test the equality variance of the data in both classes. Then, random test was used to determine whether the students from both experimental classes were taken from random population or not. Then the researcher compared mean pretest to posttest from each experimental class to

see the increase students' reading comprehension achievement before and after treatment.

8. Testing Hypothesis

The hypothesis testing taken from the comparison between the students' mean of posttest scores in both classes that computed through SPSS version 15.0.

The hypothesis was analyzed at the significant level of 0.05 in which the hypothesis was approved if $\text{sig.} < \alpha$. Therefore if the result of SPSS' calculation showed the sig. (2 tailed) was less than α it can be stated that the hypothesis was accepted. In other words, there is a significant different of students' reading comprehension achievement between the students who are taught by using information transfer and those who are taught by using translation.

E. Data Collecting Technique

The researcher used reading test as the instrument to gather the data. The reading test consisted of pretest and posttest in multiple-choice form.

1. Pretest

The pre test administered in order to check reading comprehension homogeneity of both groups before the treatment. The test consisted of 20 items of multiple choice forms with four options. The test conducted within 45 minutes.

2. Posttest

The researcher administered posttest after the treatments. The purpose of conducting posttest was to find out the result of students' reading comprehension ability after applying information transfer technique and translation technique in reading. The test consisted of reading text with 20 items of multiple choice tests. The posttest conducted within 45 minutes.

F. Scoring System

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

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

Where:

S = the score of the test

R = the total of the right answer

N = the total of items.

G. Data Treatment

There were several steps in doing the data treatment. Firstly, the try out test result was computed. Here, the reliability, level of difficulty and discrimination power of the test was computed. Secondly, the result of pretest and posttest were simultaneously searched with the normality, homogeneity, and random. The complete procedure can be seen in the following explanation.

1. The Treatment of Try out Test Result

The try out test aimed to meet the quality of the test, so that the test had good reliability, validity, level of difficulty and discrimination power. Once the test had met the four criteria, it indicated that the test could be used as the base of arranging pretest and posttest. These were some elements tested as follows:

a. Validity

A test is said to be valid if it measures accurately what is intended to measure (Hughes, 1991: 22). There are some kinds of validity, namely face validity, content validity, and construct validity. To measure whether the test has good validity, the researcher used content and construct validity.

Content validity is the extent to which a test measures representative sample of the subject matter contents. It means that the test should represent the materials that have been taught. To make sure that all the items were based on the material taught and the 2006 curriculum for the first year of SMA the researcher asked two English teachers in SMA N 2 Pringsewu to check it. For further information see the syllabus at Appendix 24 .

A test, part of a test, or a testing technique is said to have construct validity if it can be demonstrated that it measures just the ability which it supposed to measure. The word 'construct' refers to any underlying ability (or trait) which is hypothesized in a theory of language ability (Hughes, 1991: 26). Heilman, Blair and Rupley (1981: 4) categorize reading comprehension into three levels, one of them is literal comprehension. Literal comprehension is the process of

understanding the ideas and information explicitly states in the passage. Based on that theory some of the reading comprehension skills that should be mastered are recalling the main idea, understanding the information presented, knowing the meaning of the words, understanding the pronouns, and paraphrasing in own words (inference). Therefore to make sure that the items of the test already good in the term of construct validity, the researcher specify them into table of specification. The table specification of the instrument test can be seen on below:

Table 1. Table Specification of Pretest

No.	Skills of reading	Items number	Percentage of items
1	Determining main idea	1,8,14,19.	20%
2	Finding specific information	2,3,4,5,10,11.	30%
3	Inference	7,9,17,20.	20%
4	Reference	12,15,18.	15%
5	Vocabulary in context	6,13,16.	15%

Table 2. Table of Specification of Posttest

No.	Skills of reading	Items number	Percentage of items
1	Determining main idea	4,8,11,17.	20%
2	Finding specific information	1,2,7,15,18,20.	30%
3	Inference	9,14,16,19.	20%
4	Reference	6,10,13.	15%
5	Vocabulary in context	5,10,12.	15%

b. Reliability

Reliability refers to the extent to which the test is consistent in its score, and it gives us an indicator of how accurate the test scores are (Shohamy, 1985: 70).

To estimate the reliability of the test, the researcher used the split-half method. To measure the coefficient of the reliability between first and second half group, the researcher used the following formula:

$$r1 = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

Where:

r1 = coefficient of reliability between first half and second half groups

X = total number of first half group

Y = total number of second half group

x² = square of x

y² = square of y

Then the researcher used “Spearmen Brown’s Prophecy Formula” (Hatch and Farhady, 1982: 286) to know the coefficient correlation of whole items.

The formula is as follows:

$$rk = \frac{2r1}{1 + r1}$$

Where:

rk = the reliability of the test

r1 = 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

The result of the reliability found through this research was 0.974 (see appendix 5). By referring to the criteria of the reliability proposed by Hatch and Farhady (1982:247), the test has high reliability that is in the range of 0.90-1.00. It indicated that the instrument produced consistent result when administered under similar condition, to the same participant and in different time (Hatch and Farhady,1982:244).

c. Level of Difficulty

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

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

Where:

LD : level of difficulty

U : the proportion of upper group students

L : the proportion of lower group students

N : the total number of students following the test

The criteria are;

< 0.30 : difficult

0.30 – 0.70 : average

> 0.70 : easy

(Shohamy, 1985: 79)

Based on the try out test related to those criteria there were three easy items, 29 average items, and 18 difficult items.

d. Discrimination Power

To see the discrimination power, the writer used 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 students

In accordance with Shohamy (1985: 81), there are some criteria of discrimination power of an item. An item is excellent if the discrimination index ranges from 0.10 to 1.00. A good item ranges from 0.41 to 0.70. A satisfactory item ranges from 0.21 to 0.40. An item is poor if the discrimination index ranges from 0.00 to 0.20, and an item is bad if the discrimination index is negative.)

Based on the try out test related to those criteria there were seven bad items, 15 items were poor, ten items were good, 15 items were satisfactory, and three items were excellent.

2. The Treatment of Pretest and Posttest Result

After having the result of the try out test, the researcher continued to analyze the data of the pretest and posttest of both groups. The SPSS version 15 was implemented in the treatment of data. The steps of analyzing the data were as follows:

a. Normality Testing

The normality testing was held twice. These tests were employed to know whether the data of pretest and posttest were normally distributed or not. The normality of pretest was assumed if the significance was greater than 0.05. The result of the normality testing can be seen in table 4 below:

Table 3. Normality Testing

	Kolmogrov- Smirnov Z	
	N	Sig. (2-tailed)
Pretest X 4	29	0.562
Posttest X4	29	0.256
Pretest X3	29	0.243
Posttest X3	29	0.673

Table 3 inferred that the significance of pretest in the experimental class I (X4) was 0.562. Since the significance was higher than 0.05, it could be concluded that the data of the pretest in the experimental class I was normally distributed. While in the experimental class II (X3), the significance was 0.243. The significance was more than 0.05 and it meant that the data of pretest in the experimental class II was also normally distributed. These indicated that the data of pretest to both classes were normally distributed.

Moreover, Table 3 also showed that the data of the posttest in the experimental class I was normally distributed since the significance was 0.256. The significance was higher than 0.05, it could be concluded that the data was normally distributed. In the experimental class II, the significance was 0.673, which more than 0.05. So, the data in the experimental class II was also distributed normally. Furthermore,

the result of computation of normality can be seen completely in Appendices 17 and 18.

2. Homogeneity Testing

The homogeneity testing was intended to test whether the variance of the data in the experimental class I and experimental class II was equal or not. The homogeneity was assumed if the significance was greater than 0.05. The result of homogeneity testing is as follows:

Table 4. Homogeneity Testing of Pretest

Variables	Sig. (2-tailed)	Conclusion
Experimental Class I Experimental Class II	.696	Homogeneous

Table 4 showed that the data were homogeneous since the significance was 0.575. As the significance was more than 0.05, it illustrated that the data of both classes were homogeneous. The complete result of computation can be seen in Appendix 19.

3. Random Test

The statistical formula of runs test was used to determine whether the data of both classes were taken from the population at random. It was accepted if the significance was greater than 0.05. The result of random test is stated in the Table 5 below.

Table 5. The Random Test of Pretest in the Experimental I and Experimental Class II

Variables	Test Value (a)	Sig. (2- tailed)	Conclusion
Experimental Class I	45.86	.132	Random
Experimental Class II	47.24	.132	Random

Table 5 indicated that the significance of the data was greater than 0.05. It could be concluded that the data of both classes were taken from the population at random.

Table 6. The Random Test of Posttest in the Experimental Class I and Experimental Class II

Variables	Test Value (a)	Sig. (2- tailed)	Conclusion
Experimental Class I	65.52	.410	Random
Experimental Class II	56.37	1.00	Random

Table 6 indicated that the significance of the data was greater than 0.05. It could be concluded that the data in the experimental class I and experimental class II were taken from the population at random.

G. Hypothesis Test

Research findings were used to test the hypothesis- that was:

H1 : There is significant difference of students' reading comprehension achievement between those who are taught through information transfer technique and those who are taught through translation technique.

The hypothesis was analyzed by using *independent group t- test* to compare the mean of posttest result of both classes. The hypothesis was analyzed at the significant level of 0.05 ($p < 0.05$).