

CHAPTER III

RESEARCH METHOD

This chapter focuses on the methods of the research which covers setting of the research, research design, variables, population and sample, data collection techniques, steps in collecting data, criteria of good test, data analysis, and hypothesis testing will be explained further.

3.1 Setting of the Research

The researcher chose SMA Negeri 1 Pagelaran as the research place because this is one of developing schools in Pringsewu district that can be reached easily by the researcher. She conducted test and observation at the first grade of the second semester. And for the time of research, she conducted seven meeting to give two times to tryout, pre-test, three times to treatment, and post-test.

3.2 Research Design

The researcher used quantitative research in order to identify the improvement of students' vocabulary. One group pre-test and post-test design is used to this

research. According to Dimitrov (2003), pretest-posttest design are a measurement of the learning received during the class as a result comparing what the students knew before in a pre-test and after the class experience in a post-test. The tests indicate how the students are learning the course. The data will target students requiring extra help and will identify teaching and learning methods that need to be changed or developed. The researcher used one class as the experimental class and one class as the control class. This research was conducted to see whether there is an improvement in students' vocabulary achievement after being taught through intensive reading. The treatment was given in three times. The researcher conducts pretest, treatment, and posttest. Here is the illustration of the one group pretest posttest design.

$$T1 \quad x \quad T2$$

Where:

T1 : Pretest

X : Treatment

T2 : Posttest

(Hatch and Farhady, 1982: 20)

The researcher has some reasons for choosing one group pretest- posttest design to be employed in the research. This design was chosen since it is not feasible to apply true experimental design. The sample of the research was chosen purposively

to get good data from it. Thus, one group pretest- posttest design was chose. The first activity that has been done by the researcher was to administer a try out to make the instrument more valid. The researcher administered pre-test to the experimental class to measure the input of the students before they get the treatment. Then the researcher conducted the treatment by using intensive reading to stimulate and improve the students' vocabulary achievement. The next step is adminestering post-test to experimental calss to know the result of the treatment.

3.3 Variables

In this research, the independent variable is known as the treatment variable. The writer will propose two variables in his research, as follows:

1. Vocabulary as independent variable (X) because this variable is major and will be investigated.
2. Intensive Reading as dependent variable (Y) because this variable measures to determine the effect of students' vocabulary achievement.

3.4 Population and Sample

1. Population

The population of this research was the first year students at SMAN 1 Pagelaran in 2014/ 2015 academic year. There were eight classes of the first year students. Each class consists of 24 to 30 students. Gay (1987:102) defines

that population is the group of researcher's interest, the group to which she or he would like the results of the study to be generalized.

2. Sample

The sample of the research was selected by using random sampling technique, which is using lottery. The sample of this reasearch was choose randomly from two classes, class X3 and X4 because the participant have similiar chace to be chosen. There was one class as the experimental class, that is X3. Gay (1987: 101) says that sampling is the process of selecting individuals for study. The researcher select one class as the sample of the research by using random sampling technique which is using lottery.

3.5 Data Collection Techniques

In collecting data, the researcher used the following procedures:

1. Pretest

The pretest is conducted before treatments. It is used to determine how far the students have mastered the vocabulary and to read the texts before the treatments are given. The pretest used by researcher is an text test and the students should read the text through intensive reading to answer the multiple choices. The number of item in the test was 35 items and each items with four options of answers. One was the correct answer and the rests were the distracters.

2. Posttest

The posttest was conducted after the researcher conducted the treatments. It is used to determine how far the students have mastered the English vocabulary after being taught by intensive reading. Similar to the pretest, the researcher used texts test in the form of multiple choices. The questions was the same level of difficulties as pre-test. The posttest consists of 35 items with four options. One was the correct answer and the rest were the distracter.

3.6 Steps in Collecting Data

The steps of data collection in this research are as follows:

1. Determining the sample of the research

The sample of the research was selected by using random sampling technique, which was using lottery. The researcher was taken one of eight classes of the first year students at SMAN 1 Pagelaran as the research sample. The sample class consists 24 students. The sample of the research followed pre-test treatment and post-test.

2. Designing research instrument

In this research, there was one pre-test that is proper to the grade X students of SMAN 1 Pagelaran. It focuses on vocabulary, which is classified into content word (noun, verb, and adjective). The materials were taken based on the educational unit level curriculum of English for Senior High School.

3. Conducting try out of research instrument

The try out was conducted in the different class of the experiment class in first class of SMAN 1 Pagelaran. Try out was conducted in the control class. Try out was conducted to measure the reliability of the tests. It was administered for 40 items in 90 minutes. The aim of try out was to determine the quality of the test which will be used as the instrument of the research, and determined which item should be revised for the pre-test and post-test.

4. Conducting the pre-test

Pretest was conducted for 35 item in 60 minutes. It was held to measure student's basic ability in experimental class.

5. Conducting the treatment

After giving pretest was administered after the application of intensive reading based on the lesson plan which had been prepared. Each treatment was held for 90 minutes.

6. Administering post test

The post test was administered after the application of intensive reading. It was conducted for 35 items in 60 minutes and the aim was to find out the students' vocabulary achievement after the implementation of intensive reading.

7. Analyzing the test result

After conducting pretest and posttest, the researcher analyzed the data. The data was analyzed by using T- test. It was used to know whether intensive reading can be used to increase the students' vocabulary achievement

significantly. The data was computed through the Statistical Package for Social Sciences (SPSS).

8. Reporting the result

In reporting the data was arranged systematically based on the pre-test and post-test to see whether there is improvement students' vocabulary achievement after being taught through intensive reading.

3.7 Criteria of Good test

In this research , to prove whether the test has good quality, it had to be try out first. The test can be said has good quality if it had a good validity, reliability, level difficulty, discrimination power, and scoring system.

1. Validity

The test can be said if the test measures the object to be measured and it is suitable with the criteria (Hatch and Farhady, 1982:250). To measure whether the test has a good validity, this research used content and construct validity.

a. Content Validity

Content validity is concerned with whether the test is sufficiently representative and comprehensive for the test. In the content validity, the material is given suitable with the curriculum. The researcher used the vocabulary that is supposed to be comprehended by grade X students. In this research, the researcher arranges the instrument based

on the material that will be given, which is vocabulary, and the researcher makes instrument related to vocabulary which is content words (noun, verb, and adjective). If the instrument has represented all the ideas that connected with the material that will be measured, that measuring instrument has fulfilled the aspects of content validity. In this case, that measuring instrument has fulfilled the aspect of content validity. Content validity also can be examined from the table of specification. If the table represents the material that the tester wants to test, it means that it is a valid test from the point of view (Shohamy, 1985:74). The content validity is constructed by including vocabulary material presented in training: they are noun, verb, adjective, and adverb. The researcher taken those four aspects since it was appropriate with intensive reading.

Table 1 Specification of the Vocabulary Test

No	Aspect of Vocabulary	Item Number	Total	Percentage of Item
1	Noun	1, 2, 9, 10, 16, 21, 22, 28, 29	9	26 %
2	Verb	3, 4, 11, 12, 17, 23, 30, 31	8	23 %
3	Adjective	5, 6, 13, 18, 24, 25, 32, 33	8	23 %
4	Adverb	7, 8, 14, 15, 19, 20, 26, 27, 34, 35	10	28 %
	Total	35 items		100 %

b. Construct Validity

Construct validity is concerned with whether the test is true reflection of the theory of the trait- in our case language which is being measured (Hatch and Farhady, 1982). It means that the items should really measure the students' vocabulary achievement. In this study, the researcher uses the vocabulary that is supposed to be comprehended by the X graders of Senior High School. The material is under topic of knowing new vocabulary which represent vocabulary material based on the curriculum used in Senior High School, 2006 Curriculum.

2. Reliability

Reliability of test can be defined as the extent to which a test produces consistent result when administrated under similar conditions (Hatch and Farhady, 1982:243). An important point to understand is that a measure can be perfect reliable and yet not be valid. To compute the reliability of test, split half method is used. It is done through dividing the test into two parts, odd and even number.

To measure the coefficient of the reliability, the researcher uses the Person Product Moment Formula below:

$$r_1 = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

where:

r_1 : coefficient of reliability between odd numbers and even numbers items

x : total number of odd number items

y: total number of even numbers items

n : numbers of students who take part in the test

x^2 : square of x

y^2 : square of y

$\sum x$: total score of odd number items

$\sum y$: total score of even number items

The criteria of reliability are:

0.80 - 1.00 : very high

0.60 – 0.79 : high

0.40 – 0.59 : average

0.20 – 0.39 : low

0.00 – 0.19 :very low

Then, to compute the coefficient correlation of the whole items, the researcher use Spearman Brown Prophecy Formula.

$$r_k = \frac{2r_l}{1+r_l}$$

where:

r_k : reliability of a full test

r_l : reliability of a 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, 1982:246)

3. Level difficulty

Difficulty level related to how easy or difficult the item is from point of view of the students who take the test. This is important since test items, which are too easy. Tell us nothing about differences is discarded. To see the level of difficulty, this research use the following formula:

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

Where:

LD : level of difficulty

R : the number of students who answer correctly

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)

4. Discrimination power

The discrimination power (DP) refers to the extent to which the item differentiates between high and low level students on the test. A good item

according to this criterion is one which good students do well on and bad students fail.

To know the discrimination power of the test, the writer use the following formula:

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

Where:

- DP : discrimination power
 U : the proportion of upper group students
 L : the porportion of lower group students
 N : total number of 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)

5. Scoring System

In scoring the students result of the test, this research use this formula. The ideal higher scores of pre tests and post tests are calculated by using formula as follows:

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

Where:

S : the score of the test

R : the total of the right answers

N : the total items

3.8 Data Analysis

The researcher analyzes the data by comparing the average score (mean) of the pretest and posttest to determine whether there is an influence of students' vocabulary through intensive reading strategies.

$$X = \frac{\sum x}{N}$$

Where:

X : mean

$\sum x$: total score

N : number of students

After conducting pretest and posttest, the researcher analyzed the data. It was used to make sure whether there was any significant improvement of the students' vocabulary achievement.

1. scoring the pretest and posttest
2. Tabulating the score of students' vocabulary test results using repeated measures T- test.

3. Then, summarizing the finding from the tabulated result of the pretest and posttest. The researcher uses statistical computerization i.e. repeated measures T- test of Statistical Package for Social Sciences (SPSS) for windows version 20.0 to test whether there is an influence or not.

3.9 Hypothesis Testing

The hypothesis testing is used to prove whether the hypothesis proposed in this research is accepted or not. The hypothesis is analyzed by using repeated measures T- test of Statistical Package for Social Sciences (SPSS) windows version 20.0. The research uses the level of significance 0,05 in which the hypothesis is approved if $\text{sign} < \alpha$. It means that the probability of error in the hypothesis is only 5%.

H_0 : There is no significant improvement of students' vocabulary achievement after being taught through intensive reading at the first year students of SMA Negeri 1 Pagelaran.

H_1 : There is significant improvement of students' vocabulary achievement after being taught through intensive reading at the first year students of SMA Negeri 1 Pagelaran.

The criteria of those hypothesis are:

If the t-ratio is higher than t-table : H_1 is accepted

If the t-ratio is lower than t-table : H_0 is accepted