CHAPTER III
RESEARCH METHODOLOGY

This chapter elaborates the research methodology which has been briefly introduced in chapter one. This chapter details research method, research design, variables, research instruments, and research procedure.

3.1 Research Method

To find out the effectiveness of Extensive Reading Activity in improving students' reading comprehension, the research method applied in this research was quantitative method. Quantitative method was employed in this research to get an empirical data.

3.1.1 Research Design

This research applied the pretest-posttest nonequivalent-groups design which is the subset of a quasi experimental design. The writer decided to apply this design because of the reason that the subjects of this research were randomly selected based on the classification made by the school.

The representation of the pretest-posttest nonequivalent-groups design is below:

G1   T1   X   T2

G2   T1   T2

G1   : Experimental Group

G2   : Control Group

T1   : Pre-Test

T2   : Post-Test

X   : Treatment

3.1.2 Variables

The independent variable investigated in this study was Extensive Reading Activity, whereas the dependent variable was the achievement of students' reading comprehension.

3.2 Research Instruments

In this study, the writer used some instruments as follow:

1. Reading Comprehension Test

In collecting the data, the writer used reading comprehension test as the instrument of this study. The reading comprehension test consisted of six texts and 30 multiple choice items. In formulating the items of the test, there were some points to be considered, first, the relevance of the items to the aim of the study, second, the appropriateness of the reading passages, third the relevance of the items to the curriculum. The following table (table 3. 1) is the syllabus for XI

grade of Senior High School in reading aspects that were taken as consideration in developing the test.

Table 3.1

Syllabus

Aspect	Standard Competence	Basic Competence	Indicator
Reading	Understanding the meaning of short functional text and simple essay in the form of report, narrative, and analytical exposition in the context of everyday situation and also to access knowledge.	Responding the meaning of formal and informal short functional text (banner, poster, pamphlet, etc) by using various written language in the context of everyday situation and also to access knowledge.	1. Students are able to read aloud different kind of text with the correct utterance and intonation. 2. Students are able to identify the topic of the text 3. Students are able to identify certain information.

The reading comprehension test was used in the pretest and posttest and given to both experimental group and control group. A try-out was conducted before the test with the purpose of investigating the reliability and validity of the test items.

2. Questionnaire

In this study the writer used questionnaire to know students' perception towards Extensive Reading Activity and to find out the improvements that students gained from Extensive Reading Activity. The questionnaire was only given to experimental group. It was given after the experimental group students did the post-test. The questionnaire consisted of six close questions. In this study, those questions were arranged to know students' perception of Extensive Reading

Activity and to find out the improvements that students gained from Extensive Reading Activity.

3.3 Research Procedure

3.3.1 Administering Try-out Test

Before the instrument was used in this research, the writer had administered the try out test to investigate the validity and reliability of the instrument. Try-out test consisted of nine texts and 45 multiple choice questions related to the text. The test materials were adapted from several textbooks used by the eleventh grade of Senior High School students. The try-out test had been conducted on January 20, 2010 before the experiment was begun.

3.3.2 Experiment

In this study, the writer introduced the Extensive Reading Activity to the experimental group, motivated them to read many kinds of English reading materials extensively, suggested them some graded reader books that provided in the school library, some books or articles, and gave them a freedom to find their own reading material from any resources, such as from the internet. They also were encouraged to write a reading report (see appendix 3) from what they have read. Then, there was a session where the students shared what they had read in the classroom. The experiment was held from February 1 until February 27, 2010.

3.3.3 Administering Pre-test, Post-test and the Questionnaire

In this part the writer conducted the pre-test to the experimental group and the control group which was held on January 27, 2010, it was aimed to investigate the students' initial ability in reading comprehension. Afterwards, the writer conducted the post-test on March 1, 2010 to find out the improvement of student's reading comprehension. The post-test was also given to both groups. The post-test was given to investigate the effectiveness of Extensive Reading Activity in improving students' reading comprehension. Then the questionnaire was given only to experimental group to know students' perception towards Extensive Reading Activity and to find out the improvements that the experimental group students gained from Extensive Reading Activity.

3.4 Data Analysis

3.4.1 Scoring Technique

The test used in this research was multiple choice items. In scoring the test, the writer used the formula as follow:

S = R

S   : Score

R   : Right Answer

3.4.2 Data Analysis on Try-out Test

To investigate the validity and reliability of the test item, the writer analyzed the obtained data from the try-out test. Afterward, the valid and reliable items were used as the research instruments.

1. Validity

The writer computed the validity of the test items for instrument in this research by using the formula as follow:

$$rpb = \frac{M_i - M_x}{S_x} \sqrt{\frac{p}{q}}$$

M_i = Mean of total score from subjects that answered correctly

M_x = Mean of total score

S_x = Standard deviation of total score

p = subject proportion that answer the item correctly

q = 1-p

(Saifudin Azwar, 2004:19)

An item is considered valid and it can measure the research variable if the *rpb* value is equal or more than 0.300 (Kaplan & Sacuzo, 1993).

2. Reliability

Reliability test which is used for the instrument in this research is Kuder Richardson's Reliability Coefficient 20 (KR-20). The formula is as follow:

$$KR-20=\left(\frac{k}{k-1}\right)\left(1-\frac{\sum p(1-p)}{S_x{}^2}\right)$$

k　　　= item quantity

$S_x{}^2$　　= variance of total score

p　　　= subject proportion that answer the item correctly

(Arikunto, 2002)

The items (questions) to measure a variable are considered reliable and succeed to measure the variable if its reliability coefficient is more than or equal to 0,700 (Kaplan, 1993).

3.4.3 Data Analysis on the Pretest

The purpose of the pre-test is to investigate the students' initial ability and to investigate the initial equivalence between the groups. The writer used t-test formula or independent sample test. Hatch and Farhady (1982: 114) stated three assumptions underlying the t-test are as follow:

1. The subject is allotted to one group in experiment

2. The variances' scores are equal and normally distributed

3. The scores on the independent variable are continuous

For those reasons, the normality distribution and variance homogeneity test are done by the writer before calculating the data using t-test formula.

3.4.3.1 Normality of Distribution Test

In this study, to analyze the normality distribution of the scores, the writer used the SPSS 16.0 for windows with the steps, as follows:

1. Stating the hypothesis and setting the alpha level at 0.05 (two-tailed test)

   H_0 = the score of the experimental and the control group were normally distributed

   H_1 = the score of the experimental and the control group were not normally distributed

2. Analyzing the normality distribution using Kolmogrov-Smirnov formula in SPSS 16.0 for windows.

3. Comparing the Asymp. Sig with the level of significance to test the hypothesis. If the Asymp. Sig> level of significance (0.05) the null hypothesis was accepted: the scores were normally distributed.

3.4.3.2 The Homogeneity of Variance Test

In analyzing the variance homogeneity of the scores, this study used the Levene Test formula in SPSS 16.0 for window. The steps below are followed to analyze the homogeneity of variance:

1. Stating the hypothesis and setting the alpha level at 0.05

   H_0 = the variance of the experimental and control group were homogenous

H_1 = the variance of the experimental and control group were not homogeneous

2. Analyzing the variance homogeneity using Levene Test formula in SPSS 16.0 for window

3. Comparing the probability with the level significance for testing the hypothesis. If the probability > the level of significance (0.05) the null hypothesis was accepted; variance of the experimental and control group were homogenous

3.4.3.3 The Calculation of t-test

The steps of the t-test calculation are as follow:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test)

   H_0 = the two samples were from the same population; there was no significant difference between the two sample

   H_1 = the two samples were from the same population; there was a significant difference between the two sample

2. Finding the t value

3. Comparing the probability with the level of significance for testing the hypothesis. If the probability was more than or equal to the level of significance, the null hypothesis was accepted; the two groups were equivalent.

3.4.4   Data Analysis on the Posttest

In calculating the posttest data, the writer used the same steps as in calculating the pretest data. The writer used *t-test* formula or independent sample test (Hatch and Farhady, 1982: 111)

3.4.5   Data Analysis on the Experimental and the Control Group Scores

To investigate if there was the difference of the pretest and posttest means of each group is significance, this study analyzed the pre-test and post-test scores using the matched t-test (Hatch & Farhady, 1982:114). The steps are as follow:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test)

    H_0 = there was no significant difference between the pretest and posttest scores

    H_1 = there was significant difference between the pretest and posttest scores

2. Finding the *t* value

3. Comparing the probability with the level of significance for testing the hypothesis. If the probability was more than or equal to the level significance, the null hyphothesis was accepted; the two scores were homogeneous.

3.4.6 Students' Gain Scores in Control and Experimental Group

Students' gain scores were analyzed by the following formula:

Gain Score = Post-test score – Pre-test score

It is also necessary to find the mean of the gain scores, and the formula is as follow:

$$M_{gain} = \frac{\sum gain}{N}$$

M = Mean

$\sum_{gain}$ = the sum of gain scores

N = the number of subject

3.4.7 The Students Classification in Experimental Group

The scores of pre and post tests for experimental group would also be computed to find the level of reading comprehension mastery before and after the treatment was given. Computing the mean of pre and post test would be necessary to find out the mastery level of reading comprehension. The formula to compute the score and mean is as follow:

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

S = Score

R = Right answer

N = The number of the items (questions),

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

M_x = mean x (before treatment)

$\sum x$ = the sum of x scores (pre-test)

N = the number of subjects

and

$$My = \frac{\sum y}{N}$$

M_y = mean y (after treatment)

$\sum y$ = the sum of y scores (post-test)

N = the number of subjects

After finding the score and the mean of the tests, it is essential to interpret what it means. The interpretation of students' score and the average of the tests would lead us to know to what extent the mastery of reading comprehension before and after the treatment. Related to this, Harris (1969: 134,

cited in Permadi: 2008) classifies the range scores with its probable students performance.

The classification is as follow:

Table 3.2

Classification of the range score

Test Scores	Probable Student performance
80 – 100	Good to excellent
60 – 79	Average to good
50 – 59	Poor to average
0 – 49	Poor

3.4.8 Data Analysis on Questionnaire

The questionnaire was analyzed to know the students' perception in experimental group of Extensive Reading Activity and to find out the improvements that the students gained from Extensive Reading Activity.

In the next chapter, the findings of the research in investigating the effectiveness of Extensive Reading Activity in improving students' reading comprehension would be presented, analyzed, discussed and concluded in accordance with theoretical foundation above.