

CHAPTER III

RESEARCH METHODOLOGY

A. Form of Research

To achieve the main aim of this research, the suitable method should be used. The Researcher takes interest in implementing a pre Experimental design. As stated by Cohen, Luis, *et al.* (2007: 282) Pre Experimental divided into three forms, the one group pre-test-posttest design, the one group posttests only design, and the post-tests only non equivalent design. From three of them, the researcher chose the one group pre-test-posttest design. It was suitable to be used in this research to measure a group and proceed to account for difference between pre-test and post-test score to the effect of treatments.

The form of pre experimental design can be represented as:

Table. 3.1

One group Pre-test and Post-test design

Pre test	Treatment	Post test
O₁	X	O₂

Taken from: Cohen, Manion and Morrison (2007: 282)

In pre experimental design, according to Ary *et al.* (2010:303) the one group pre-test and post-test design involves three steps: firstly, is administering a pre-test (O₁) and measuring the dependent variable before the treatment given. Second, is applying the experimental treatment (X) to

the subjects by using scientific process approach. The treatment in this research is Lapbook medium. The last is administering a posttest (O2), again measuring the dependent variable after applying the treatment, the researcher will give the different questions and the same aspects to the students of pre-test on the first day and posttest at the end of the day.

B. The Site of Research

The Researcher chose SMP Negeri 1 Nanga Pinoh as the site of the research in researching the effectiveness of Lapbook towards students' descriptive text comprehension. SMP Negeri 1 Nanga Pinoh is located on Juang Street KM. 1 Nanga Pinoh Melawi Regency. The Researcher chose this school because of the convenience to access this school for the purpose of the research. The idea of "Convenience" is supported by Cohen, Manion, and Morrison (2007:100) suggested that there are four key factors in sampling the first one is sample size, the second one representativeness and parameters of the sample, the third one is access to the sample and the last one is the sampling strategy to be used.

a. Population

The general population of this research is the whole students the researching in that school. According to Creswell (2012: 142), "a population is a group of individuals who have the same characteristic". It means a population is a large group of the objects study in research. The target of population in this research was the eighth grade students of SMP Negeri 1 Nanga Pinoh in the academic year 2015/2016. The access to the

sample is the main reason to chose the school. The school is located on Juang Street KM.1,Nanga Pinoh Melawi Regency.

There are nine classes of the eight grade; are VIII A, VIII B, VIII C, VIII D, VIII E, VIII F,VIII G, VIII H, and VIII I. The total populations were 297 students. The distribution of the population is depicted by the table below:

Table 3.2
The distribution of Population

No.	Class	Total of Students
1.	VIII A	31
2.	VIII B	31
3.	VIII C	32
4.	VIII D	34
5.	VIII E	35
6.	VIII F	33
7.	VIII G	35
8.	VIII H	33
9.	VIII I	33
	Total	297

Taken From: Administration of SMP Negeri 1 Nanga Pinoh

b. Sampling Technique

Sample is the part of population that investigated and determined by technique of sampling. According to Ary *et al.* (2010: 148), “sample is a portion of a population.” On the other hand, Fraenkel and Wallen (2009: 90), “a sample in a research study is the group on which information is obtained”

In this research, the researcher was the sample through cluster random sampling. The selection of groups, or clusters, of

subjects rather than individuals is known as cluster random sampling (Fraenkel and Wallen, 2009: 95). In this technique, the researcher first prepared a piece of paper and then divided the paper into nine pieces. Each of the pieces was given name codes namely VIII A, VIII B, VIII C, VIII D, VIII E, VIII F, VIII G, VIII H, and VIII I. A piece of the papers was picked up and VIII E was selected to be the sample of the experiment class.

C. Research Schedule

Table 3.3
Time Schedule of Research

No.	Activities	2016																
		January				February				March				May				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	Submitted research outline			■	■													
2	Writing Research Design					■	■											
3	Revise Research Design							■	■									
4	Seminar Design									■								
5	Revise Seminar Result											■						
6	Conducting the Research												■	■				
7	Analyze the data														■			
8	Thesis Examination															■	■	■

D. Technique and Tool of Collecting Data

1. Technique of Collecting data

One of the research processes is the process of data collection. The pre experimental needs the data to support the investigation. The type of desired data in the research each type of the data requires different technique in the

process of the data collection. Technique of the data collection is employed to gain information in order to be able to reveal the research problem.

The technique for the data collection employed by the researcher in this study was done by applying measurement technique. According to Ross (2005:33) "Measurement is a process that assigns a numerical descriptive to some attributes of an object, person, or event. The measurement technique was intended to examine the students' reading comprehension through the test based on the text provided.

In this research, the measurement had been administrated twice. The first was pre-test which aimed to collect the data before the treatment applied. The second was post-test which was intended to identify the students comprehension after the treatment. The pre-test and post-test used the same aspects and different questions. The treatments were administrated three times in two weeks.

2. Tool of Collecting Data

After the researcher determined the technique of the data collection, the researcher also needed to determine an appropriate tool or instrument to be used in data collection. The selection of the tool was adjusted to the research problem and the selected tools must be appropriate.

In this research, the researcher used an objective test as a tool to collect the data which was given in the pre-test and post-test. Test is an instrument or procedure that proposes a sequence of tasks to which a student is to respond

(Ross 2005: 36). It is a set of questions which is to answer, respond, or exercises by respondents. The test is used primarily to describe the students' proficiency on a given domain of achievement by giving the sample of items adequately as the major concern.

Therefore, the researcher used this tool to know the achievement of the students reading comprehension in descriptive text. In addition, the test is administered as the instrument because it was considered as the most reliable and easy way to getting some information.

Moreover, before the instrument used as the tool of collecting the data, the researcher had already measured its validity and reliability of the test.

a. Test Validity

In order to check the validity of instrument the researcher checked the test item by asking a validator to check validity of the test. According to Muijs (2004:66) "Content validity refers to whether or not the content manifest variables (e.g items of a test or questions of a test) is right to measure the latent concept (self-esteem, achievement, attitude) that we are trying to measure." The researcher asked a validator to check the content of test that determined whether the test is valid or not. The importance of checking the validity of the test is extremely a top priority to determine whether the instrument is the right choice to gather the intended data or not.

b. Test of Reliability

Reliability is a necessary characteristic of any good test as measuring instruments to be valid at all. Fraenkel and Wallen (2012: 154), states that “reliability refers to the consistency of score or answers from one administration of an instrument to another, and from one set of item to another”. That is, a reliable test is a test which would provide a consistent set of scores for a group of individuals if it was administered independently.

Therefore, in order to make sure that the test is consistent Kuder-Richardson 21 (KR21) formula utilized to find whether the test is reliable or not. The formula of KR21 as follows:

$$\text{KR21 Reliability Coefficient} = \frac{K}{K-1} \left(\frac{M(K-M)}{K(SD^2)} \right)$$

Taken from Fraenkel and Wallen (2006:160)

Where:

K= Number of items on the test.

M= Mean of the set of test scores.

SD²= Standard Deviation of the set of test scores (squared standard deviation)

After the Researcher finds the value then the next step is to compare it with standard guideline to determine the value of reliability. The guideline of reliability as follows:

Table 3.4
The Degree of Reliability

Coefficient	Relationship
> 0.90	Very highly reliable
0.80–0.90	Highly reliable
0.70–0.79	Reliable
0.60–0.69	Marginally/minimally reliable
< 0.60	Unacceptably low reliability

Cohen, Manion and Morrison (2007:506)

E. Technique of Data Analysis

In analyzing the data, the researcher uses a pre-experimental design, one group pre-test and posttest which is a quantitative research. This analysis is related to the computation of the data and hypothesis testing presented. The researcher applied an appropriate technique to analyze the data to find out whether or not teaching reading comprehension by using Lapbook is effective.

In this research, the researcher analyzed the data by using statistical method after data collecting in order to investigate the students' achievement of teaching reading comprehension in descriptive text by using Lapbook.

In order to analyze the data, the students' individual score, mean score, normality of the data, the difference score of pre-test and posttest, the standard deviation, effect of treatment and students' significance score of pre-test and post-test are calculated as follows:

1. Analysis of the Students' Individual Score of Pre-Test and Post-Test.

To obtain the maximum point of score (100), the students' correct answer of test items is multiplied by 50 and divided by total number of test items (25).

Therefore, to obtain the students' final individual score which will be given to them, the formula used is :

$$X = \frac{A}{N} \times 100$$

Adapted from: Cohen (2007:423)

Where,

X = an individual score

A= the students' right answer

N = the number of test items

2. Analysis of the Students' Means Score of Pre-Test and Post-Test

The students' mean score of pre-test and post-test are calculated by using the mean formula. According to Brase and Brase (2010:85), "The mean is the average usually used to compute a test average". The mean score can be formulated as follows:

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

Adapted from: Singh (2007:138)

Where,

M = The students' mean score

$\sum X$ = The total score of students

N = The total number of students

Table 3.5
Qualification of Mean Score

Test Scores	A Classification
80-100	Good to excellent
60-79	Average to good
50-59	Poor to average
0-49	Poor

Adopted from Harris, (1969:134)

The criteria above are used to determine the classification of the pre-test and post-test mean score. The mean score is obtained from the total of the whole students' score divided by the number of students. The score calculated after pre-test and post-test given to the students. If the mean score is around 0-49, it would be categorized as poor.

Furthermore, when the mean score range around 50-59, it could be mentioned as poor to average. And then, if it is 60-79, the mean score is categorized in the level average to good. Then, the highest level of the classification is 80-100 where the mean score is in the good to excellent level. After calculating the students' mean scores, the researcher calculated the different mean score or the interval mean score of pre-test and post-test to know range between the first test and the second one that was post-test.

3. Analysis of the Students' Pre-test and Posttest Difference Score or Interval Score.

Difference score is a score expressed a distance from the scores of pre test and post test. This formula is used to calculate the deviation score:

$$\bar{D} = \bar{X}_2 - \bar{X}_1$$

Adapted from: Best and Kahn (1998: 347)

Where,

\bar{D} = The difference score of posttest and pre-test

\bar{X}_2 = The score of posttest

\bar{X}_1 = The score of pre-test

To find out the answer of the hypothesis whether the medium is effective or not in teaching reading comprehension in descriptive text to the eighth grade students of SMP Negeri 1 Nanga Pinoh, the researcher collected and analyzed the data that researcher got from pre-test and post-test. The result of the data from the computation was the conclusion of applying the treatment by Lapbook.

It used to know if the medium would be accepted or even refused. If the hypothesis was accepted, it meant that the medium was effective. However, if the medium of Lapbook was not effective, the hypothesis was rejected.

4. Analysis of the Standard Deviation

“Standard Deviation is (SD) is the most useful index of variability. It is a single number that represents the spread of a distribution” (Fraenkel & Wallen (2009: 195).

$$s_D = \sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{n}}{N-1}}$$

Adapted from: Ary et al, (2010: 177)

Where,

S_D = Standard Deviation

$\sum D$ = Sum of the difference score

N = Number of pairs

5. Analysis of the Normality test

In this research, the normally test is needed to determine whether or not the data of the pre-test and posttest is distributed normally. In addition, the use of normality in this pre experimental research to determine whether the researcher may carry out t-test for parametric analysis or Wilcoxon for nonparametric analysis. In this section, the researcher used Kolmogorov-Smirnov test formula by using SPSS ver. (16). The data is assumed to be normal if $p > 0.05$. To check the normality several steps were taken into consideration as follow:

ANALYZE>NONPARAMERTIC TEST>1 SAMPLE K-S.

6. Analysis the Effect of Treatment.

The effect of the treatment (effect size) towards the students will be analyzed by comparing the pre-test and post-test score. This formula is used to calculate the effect of the treatment:

$$d = \frac{\bar{D}}{S_D}$$

Adapted from: Ary et al, (2010: 177)

Where,

d = The effect of the treatment

\bar{D} = The mean of difference score

S_D = The standard deviation

The criteria in determining the effect of treatment based on Muijs (2004: 195) can be seen in the following table:

Table 3.6
Qualification of the Effect Size

Effect Size	Qualification
0–0.1	Weak effect
0.1–0.3	Modest effect
0.3–0.5	Moderate effect
> 0.5	Strong effect

Adapted from :Muijs (2004:195)

7. Analysis on the Students' Significant Score of Pre-Test and Post-Test

To figure out the significant of pre-test and post-test the researcher is used paired – sample t- test (two sided) that available in SPSS ver. (16) with the level of confidence 95% . Then, from the output of SPSS ver. (16), the researcher will compare the result of t-value and t- table. If t-value higher then t- table, it means the alternative is accepted and the null hypothesis is rejected.

The formula used in this study to calculate the significance score as follow:

$$t = \Delta \sqrt{N}$$

Adapted from: Ary et al, (2010: 177)

Where,

- t = the students' significant score (t ratio)
 Δ = effect size
 \sqrt{N} = the square root of the number of pairs

F. The Procedure and Implementation of Research

1. Procedure of Research

In this study there were some procedures that researcher did before doing research. The explanation was about procedure of research follow:

1. The researcher did observation in order to know information about teaching and learning process in school. Observation was important for researcher to make plan before beginning doing research.
2. This part was making lesson plan was important for researcher when teaching and learning process. In this study, the researcher gave three times treatments.
3. This part was making preparation test. In this study, the researcher used reading comprehension test with multiple choice. Reading comprehension test was utilized to the students is multiple choice with total tests were 50 items and five aspects of reading comprehension. Hence, the researcher gave different test of pre-test 25 items and post-test 25 items to students. The students answered questions based on the text of reading.
4. This part was checking validity pre-test and post-test with an expert validator is the lecturer.

5. The researcher was checking reliability pre-test and post-test. The purpose to check reliability of pre-test and posttest were to measure instrument was reliable if the outcome was consistent.

2. Implementation of the Research

Procedure of implementation in this study researcher doing were giving pre-test, giving treatment, giving post-test, data analysis, and conclusion.

Explanation implementation of research could be seen as follow:

- a. The researcher gave pre-test 20th April 2016 to class VIII E in SMP Negeri 1 Nanga Pinoh. The students was given pre-test to know condition before teaching was held.
- b. The researcher gave treatments to class VIII E in SMP Negeri 1 Nanga Pinoh. The treatment was held in three times, on 26th April, 27th April and 1st May 2016. The treatment was about using Lapbook to teach reading comprehension in descriptive text.
- c. The researcher gave post-test on 2nd May 2016 to class VIII E in SMP Negeri 1 Nanga Pinoh. Post-test was given after doing pre-test and treatments.
- d. After pre-test and post-test were given to the students class VIII E in SMP Negeri 1 Nanga Pinoh. Furthermore, the researcher calculated data analysis with using calculation manually, using calculator and using SPSS ver. (16). After calculation had done researcher obtained result and interpreted it.

- e. In the last part, the researcher made conclusion about this study. The researcher got data from this study. Finally, the researcher made a conclusion about this study