CHAPTER III

EXPERIMENTAL OF THE STUDY

This chapter presents the Research Type, Research Design, Variable of Study, Population and Sample, Research Instrument, Data Collecting Procedure, and Technique of Data Analysis.

A. Research Type

In this study, the writer used quantitative approach because this approach is qualified to collect statistical data to answer the problems of this study. Then, the writer wasmeasures the students' score by the tests; pre-test and post-test. According to Creswell:

"a quantitative study, consistent with the quantitative paradigm, is an inquiry into a social or human problems based on testing a theory composed of variable, measured with numbers, and analyzed with statistical procedures, in order to determine whether predictive generalizations of the theory hold true".[1]

B. Research Design

In this study, the writer used quasi experiment design. Quasi experimental design are similar to randomized experimental research in that involved manipulation of an independent variable but differ in that subjects are nonrandomized assigned to treatment group.[2] There are many situations in educational research in which is not possible to conduct a true experiment. Neither full control over the scheduling of experimental conditions nor the ability to randomize can be always realized.[3]

The writer used nonrandomized control group pre-test post-test deign with a kind of treatment. There were two group in this model, control group and experimental group. Both

[1] John W. Creswell, *Qualitative and Quantitative approach*, 1994, California: SAGE Publications, Inc, 1994, p. 2.

[2] Donald Ary, Lucy Cheser Jacobs, Chris Sorensen, *Introduction to Research in Education*. Eight Edition, (USA: Wadsworth, Cengage Learning. 1985). P. 316

[3] Ibid, p.282

of groups are given pre-test (Y1 and Y2) before having treatment. The treatment wasgiven to the experimental group only (X). Post-test was given for both of groups to measure the student' score after the treatment given (Y1 and Y2). The schema of model was:

Table 3.1
The scheme of Quasi Experimental Design
Non randomize Control Group, Pretest-posttest

Subject	Pre-test	Treatment	Post-test
E	Y1	X	Y1
C	Y2	-	Y2

Where :
E : Experimental Group
C : Control Group
X : Treatment
Y1 : Pretest
Y2 : Posttest

The students were divided into two groups, experimental group and control group. In this experimental, the writer was teach the students directly with the same material. Therefore, the useofmindmaple software in teaching writing is applied on experimental group only. For the control group, the writer was teaching the material by using conventional approach. The conventional approach is when the teacher teaches the students by using textbook without using mindmaple software. Meanwhile, the control group was not given the treatment.

C. Variable of Study

Variable is a property or characteristic which may differ from individual to individual or from group to group. A great deal of research is carry out in order to identify or test the strength of relationships between variables. When one variable influences or affects a second variable, the first variable is called an independent variable, and the second is called a dependent variable.[4] The present study will be included the following variables:

1. Independent Variable :Mindmaple software in teaching of writing narrative text (X).

[4] David Nunan, *Research Methods in Language Learning*, New York: Cambridge University Press, 1992, p. 232-233.

2. Dependent Variable :The students' ability using mindmaple softwarein writing narrative text (Y).

D. Population and Sample

1. Population

According Vicente, a population is nothing but a group of a particular concept that has something common to each other. Population depends on the experimental conducted. It can be a group of people, a group of books, a group of journal, etc. Mostly it happens, when an experimental is conduct, the research want to gets data from the whole population but it becomes very tedious to do so.

In such cases we make use of a small group of members of the same population, call the sample of the population. As we use statistics to learn about the characteristics of the population, the sample chosen must benonrandomized select.

3.2 The number
Population of the 8th Graders of MTs Muslimat NU
Palangka Raya

No	Grade	The number of Students
1.	VIII-A	35
2.	VIII-B	34
3.	VIII-C	31
Total		100

2. Sample

Sample is a group select from a population for observation in study.[5]In this study, because of the large number of population, the writer takes sample as the representative of the population. The writer wasused cluster sampling to take the sample. Cluster

[5] Donald Ary, Lucy Cheser Jacob, Chris Sorensen, AsgharRazavieh, *Introduction to Research in Education, Canada: Wadsworth Cencage Learning*, 2010, p:316

sampling is a probability technique that nonrandomized select and use whole naturally occurring groups such as intact classrooms.[6] By cluster sampling, the writer waschoosing two classes that became the experiment group and became the control group.

The population can be seen in the following table.

3.3 The number
Sample of the 8th Graders of MTs Muslimat NU
Palangka Raya

No	Grade	Groups	Number of Students
1.	VIII-C	E	31
2.	VIII-B	C	34
The Total Number of Students			65

In this study, VIII-C class as a experiment group which taught by using Mindmaple software and class VIII-B as a control group which taught by non-Mindmaple software.

E. Research Instruments

Instruments of the study are very needed in research. It is because the instruments are tools to get the data of the study, in which the data are the important things to help the writer in answering the problem of the study and also to prove the hypothesis. The data also needed to find the aim of the study.

1. Test

The writer useda test as an instrument to collect data of this study. Test is an instrument or systematic procedure for measuring a sample of behavior.[7]To know how well the students do the writing narrative text and how well they writing is applied

[6] *Ibid*, p. 637
[7] Norman E. Gronlund, *Measurement and Evaluation in Teaching*, New York: Macmillan Publishing Company, 1985, p.5

intomindmaple software as technique in narrative text. The test consists of the instructions and statement. Theyasked to develop the topic into a text containing about 100-150 words. The writer wascollectingthe data of this study by using the test; the test results of the testused to measure the students' writing ability. There are two tests in this research pre-test and post-test;

a) Pre-test

Pre-test is a preliminary test that purpose to measure the students' scores in writing skill before having treatment.[8]Student was given the writing test withthe instruction to arrange the following jumble paragraph into a good a meaningful tall tale. Then, identify about generic structure of narrative text story.

b) Post-test

Post test is a test given after a lesson period of instruction to determine what the students' have learned. [9]The purpose of post-test is to measure the students' scores in writing skill after the treatment has be done by writer. Post-test was given to the students after their learning about narrative text using mindmaplesoftware and Non mindmaple software. The writerasked the students to produce the narrative test in traditionally for the control group, and ask the students in the experiment group to formulate their narrative text using mindmaple software.

2. Research Instruments Validity

Validity is the most important consideration in developing and evaluating measuring instruments. Historically, validity defined as the extent to which in instrument measure what it claim to measure.[10] Simply, it can be said that the test will be valid, if it measures accurately what intended to measure. In this study, the validation of instrument is mainly

[8]Anas Sudijono, *Pengantar Evaluasi Pendidikan*, Jakarta: PT Raja Grafindo Persada, 2007 P 69
[9]*Ibid* P 70
[10]*Ibid*, p. 225.

direct to the content validity. Relate to the writing test, the content validity was checked by examining and the test use to measure the objectives. The writer will use inter-rater method (test of validity). Inter rater are two raters who score the students writing to get the score composition as possible. The writer used product moment correlation as the formula to calculate the validity from the test result. [11]

$$\mathbf{r_{xy}} = \frac{\mathbf{N}\sum\mathbf{XY} - (\sum\mathbf{X})\,(\sum\mathbf{Y})}{\sqrt{\{\mathbf{N}\Sigma\mathbf{X}^2 - (\Sigma\mathbf{X})^2\}\{\mathbf{N}\Sigma\mathbf{Y}^2 - (\Sigma\mathbf{Y})^2\}}}$$

Where:

r_{xy} : Index Correlation Number "r" Product Moment

N : Number of Cases

∑X : Total value of score X

∑Y : Total value of score Y

∑XY : Multiplication result between score X and Y

Interpretation:

$r_{xy} > t\text{-}_{table}$ = Valid

$r_{xy} < t\text{-}_{table}$ = Not Valid

Ridwan stated the criteria of interpretation of validity:[12]

0.800-1.000 = Very High Validity

0.600-0.799 = High Validity

0.400-0.599 = Fair Validity

0.200-0.399 = Poor Validity

3. Research Instruments Reliability

Reliability is a necessary characteristic of any good test: for it to be valid at all, a test must first be reliable as a measuring instrument. [13]A test is reliable to extent that the

[11]AnasSudijono, *PengantarStatistikPendidikan*, Jakarta: PT Raja GrafindoPersada, 1997 p 193
[12]Riduwan, *MetodedanTeknikMenyusun Thesis*, Bandung: Alfabeta, 2007 p.110

scores made by an individual remain nearly the same in repeated measurements.[14]Inter-rater reliability is a procedure when making observations of behavior. It involves observations made by two or more individuals of an individual's or several individuals' behavior.[15]The writer uses Alpha as a formula to measure the reliability of essay test with the criteria;

$\mathbf{r}_{11} > \mathbf{r}_{table}$ = Reliable

$\mathbf{r}_{11} < \mathbf{r}_{table}$ = Not Reliable

To know the reliability of the instrument, the value of r_{11} is interpreted based on the qualification of reliability as follows:[16]

0.800-1.000 = Very High Reliability

0.600-0.799 = High Reliability

0.400-0.599 = Fair Reliability

0.200-0.399 = Poor Reliability

0.000-0.199 = Very Poor Reliability

4. Normality

Normality is a test normal to whether or not the distribution of research data. Testing the normality of the data it's done by comparing a normal curve formed by the data that will be collected with the standard normal curve/standard.[17] This study used SPSS 18.0 program to test the normality of the data.

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[13]*Ibid* P 155

[14] Abdul Qodir, *EvaluasiPembelajaranBahasaInggris,* Solo: KatalogDalamTerbitan (KDT) , 2009, P 19

[15]John W Creswell, *Educational Research Planning, Conducting And Evaluating Quantitative And Qualitative Research*, 4th Edition, Lincoln: University Of Nebraska, 2012, P 161

[16]Riduwan, *MetodedanTeknikMenyusun Thesis*p. 113

[17]Sugiyono, *Statistika untukPenelitian*, Bandung: CV. Alfabeta, 2006, p.77

2. Homogeneity

Homogeneity test aims to test the equality some samples.[18] Homogeneity is also known if all nonrandomized variables in the sequence or vector have the same finite variance. It is used to know whether experimental group and control group, that are decided, come from population that has relatively same variant or not. The formula is:[19]

$$F = \frac{Bigger\ Variant}{Smaller\ Variant}$$

Where:

F : Frequency

The hypotheses in homogeneity:

$F_{value} \leq f_{table}$, means both of variants are homogeneity

$F_{value} \geq f_{table}$, both of variants are homogeneity

If calculation result of F is lower than F table by 5% degree of significance so Ho are Accepted, it is mean both groups have same variant.

F. Data Collecting Procedure

The writer collected the data by using research instrument. The source of data, instrument and data needed are explained in table 3.5 and then there are some steps in the procedures as follows:

Source Data	Instrument	Data Needed
Students of experiment and control group	Pre-test	The each ability of both groups
Students of experiment and control group	Post-test	To Find the different score of students after doing the treatment

Table 3.4

1. Collecting

a. The writer was determining the class into the experiment group and control group.

[18]*Ibid*.p.136

[19]Sudjana, *MetodeStatistika*, Bandung: Tarsito, 1996. P.280

b. The writer given the pre-test to the experiment group and control group
c. The writer given scores to the students' worksheet.
d. The writer given the material by using mindmaple software in teaching narrative text to the experiment group.
e. The writer given material by using traditional technique in teaching narrative text to the control group.
f. The writer given the post-test for both of group
g. The writer given the result of score to the data from experiment and control group.

2. Editing

After collecting all the needed data, the writer check the data, whether or not the data are complete, understandable, and consistent and had appropriate respond.

3. Coding

It is an activity to classify the data by giving identify so that having a certain meaning in analyzing. C and E are the codes for control and experimental class.

G. Data Analysis Procedure

This study usedthe students' writing score as the data. The data arequantitative data. The data was analyzed by inferential statistic. The writer analyzed the data by some procedures below:

a. The writer was giving and collecting the data of the students' score both of pre-test and post-test at eight grade students of MTs Muslimat NU Palangka Raya.
b. The writer was tabulate the students' score into distribution of frequency in the table, then find out the mean of students' score, standard deviation and standard error of variable X1 (Experiment group) and X2 (Control Group).

c. The writer wasanalyzing the normality and homogeneity of pretest and posttest at experiment and control group.

d. The writer was analyze the data by using t-test and makes the conclusion of data analysis obtain. The formula:[20]

$$\mathbf{t_o} = \frac{\boldsymbol{M1 - M2}}{\boldsymbol{SEm1 - m2}}$$

Note:

M1- M2 :The difference of two means

SEm1 –SE m2 :The standard error of the difference between two means

To know the hypothesis accepts or rejects using the criteria; [21]

If α =0.05 < Sig, Ho accepted and Ha rejected

If α = 0.05 > Sig, Ha accepetd and Ho rejected

Interpreted the result of $t_{test.}$, the writer accounted the degrees of freedom (df) with the formula:[22]

$$\mathbf{df} = (\boldsymbol{N1 + N2 - 2})$$

Where:

Df : Degrees of freedom

N1 : Number of subject group 1

N2 : Number of subject group 2

2: Number of variable

e. The writer used SPSS 18.0 program after used t-test to answer the problem of thestudy, whether there was significant difference between usedmindmappingtechniques withmindmaple software.

[20]AnasSudijono, *PengantarStatistikPendidikan*, , P.284
[21]Riduwan & Sunarto, *Pengantar Statistika*, Bandung: Alfabeta, 2012, P 245
[22]AnasSudijono, *PengantarStatistikPendidikan*, Jakarta: Rajawali Press, 2012, P 285

The procedure of collecting and analysis data was explained in figure 3.6

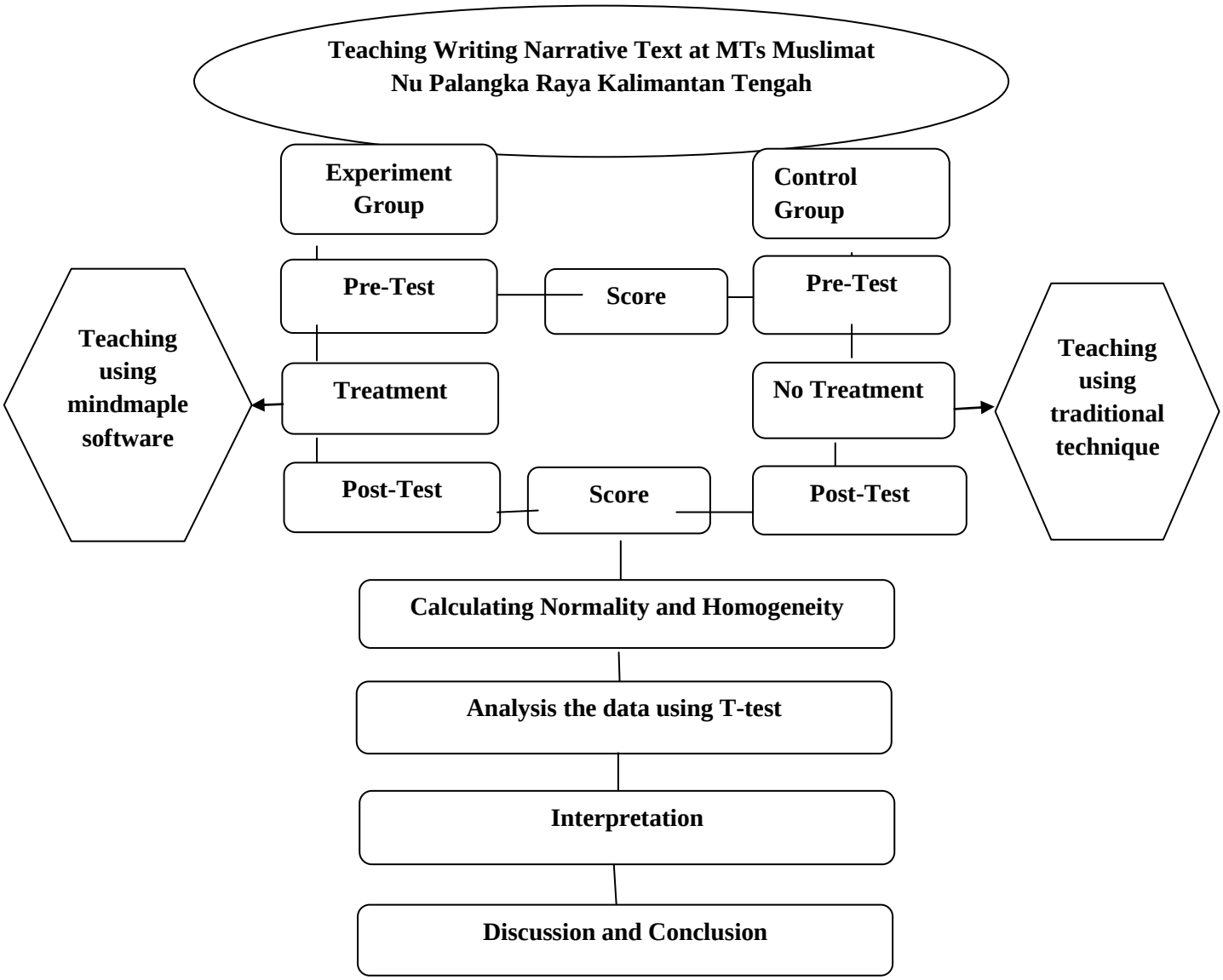

Figure: 3.1 Data Collection Procedure