CHAPTER III

RESEARCH METHOD

III.1. Research Design

The design of the research was a Quasi Experimental Design Non-equivalent Pre-test and Post-test Group Design. Pre-test was administered before giving the treathment. John W. Creswell (2008: 299) explains that experiment is testing an idea (practice) to determine whether it influences an outcome or dependent variable. Creswell also states that when individual are not randomly assigned, the procedure is called quasi experiment (2009, p. 155). Ary Donald (2007: 282) states that quasi experimental design is used where true experiment design is not feasible. According to L.R Gay, the experimental method is a method of reserach that can turly test hypotesis concerning with cause and effect relationship in the experimental research (2000, p. 349). Gay said "An experiment typically involves a comparison of two groups (although as you will see later, there may be only one group, or there may be three or more groups).

In technical term, the researcher control or manipultes on or more independent variable and examines the effect that experimental manipulation has on the dependent variable or the outcome of the study. The independent variable is the variable that refers to how participants are treated. Participants are usually assigned to different groups that receive different ouptreatments.:

Table III.1

Research Design

Pre- and Post-test Design		**Time**	
Experimental Group	Pre-test (O_1)	Treatment	Post-test (O_2)
Control Group	Pre-test (O_1)	No treatment	Post-test (O_2)

(Adopted from Creswell 2011)

According to the design on table 3.1. we do pre-test to see the students' ability for both groups experimental group and control group. Furthermore, treatment is given to the experimental group by using Comic Strips strategy. The control group is given a conventional technique or without treatment by using Comic Strips strategy.

III.2. Location and Time of the Research

The location of this research was MTs Nurul Islam Seresam. It was located at Lintas Selatan Street, Seberida District, Indragiri Hulu Regency. The duration of time to conduct this research as within two months, starting on October up to November 2017.

III. 3. Subject and Object of the Research

The subject of this research was the second year students at MTs Nurul Islam Seresam and the object of this research was the effect of using comic strips strategy on students' reading comprehension and writing ability.

III.4. The population and the Sample

The population of this research was the second year students of MTs Nurul Islam Seresam in the academic year 2016 – 2017 which consist of 62 students distribute into three classes. It can be seen in the following table:

Table III.2

Population of Students in MTs Nurul Islam Seresam.

Class	Total of Students
VIII.A	20
VIII.B	20
VIII.C	22
Total Population	**62**

The population above was large to take as a sample of the research. Based on the limitation of the research, two classes will be chosen after using cluster sampling technique. The following table was the sample of the research which consists of 20 students of VIII.A as experimental group, VIII.B as control group.

Tabel III.3

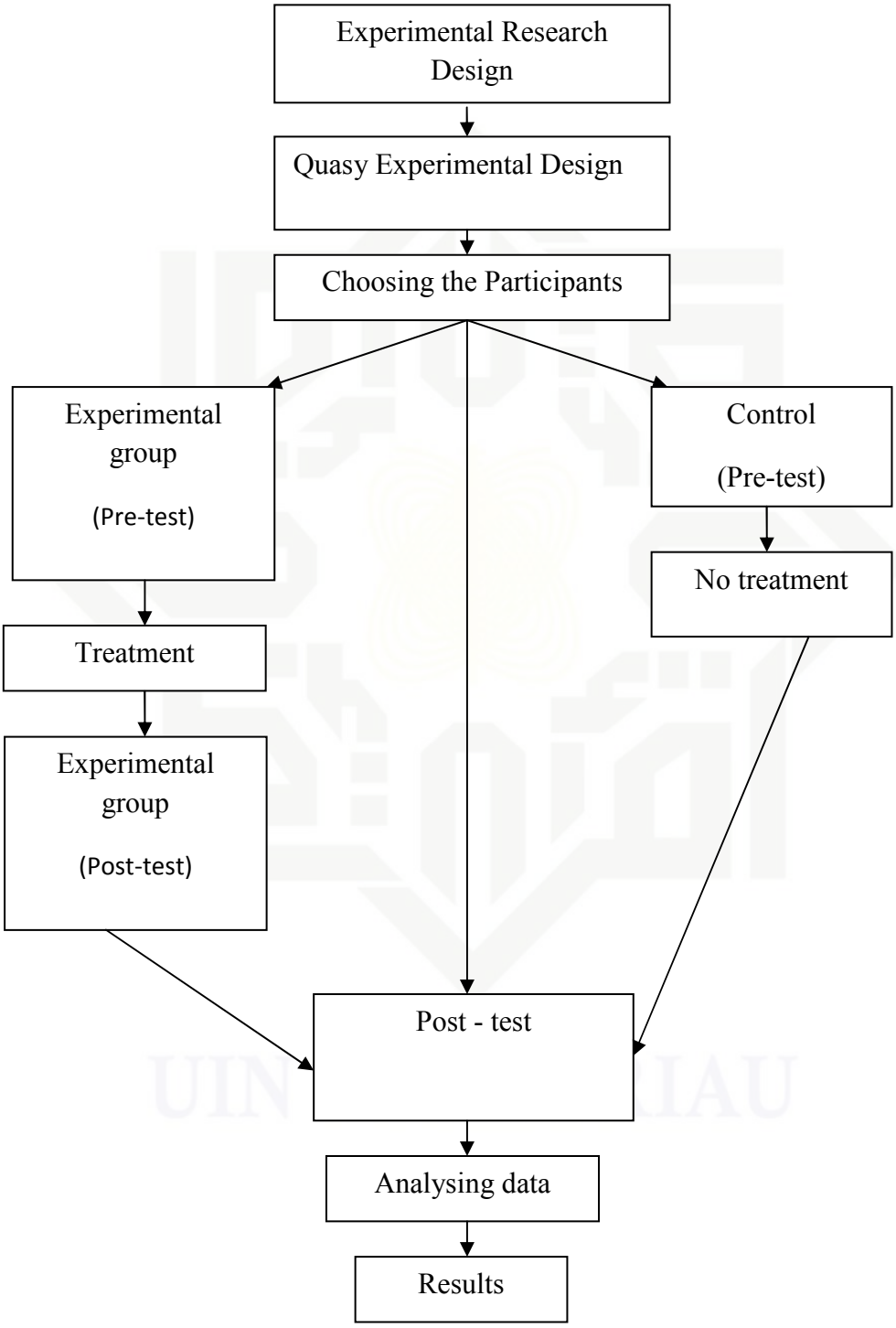
The Total Sample of the Research

No	Class	Male	Female	Total Number of Students
1	VIII.A	7	13	20
2	VIII.B	14	6	20
Total				40

The kind of research sample was a cluster sampling which means that one class was appointed to be the participants of this research. The total population was the second year students at MTs Nurul Islam Seresam in academic 2016 – 2017. In this research, the samples were 40 students which were VIII.A as an experimental group and VII.B as a control class.

III.5. Research Procedure

Figure III.1



III.6. Research Instruments

Observation, test- pretest and post test were used as instrument. Then, to collect the data, reading and writing tests were used as instruments. To measure reading comprehension of students in this study, reading test was administered to them. Text comprehension is usually assesed through questions in multiple choices. Questions should focus on finding main idea, supporting detail, inference, reference and vocabulary in context. Elizabeth (2011) states that material used or assessing reading should ideally be authentic. They should reflect the type of reading normlly encountered in daily life. Clay (2001) remarks that multiple choice questions can be used to test factual s well as levels of understanding and ability to apply learning.

On the other and, to measure writing ability of the students, writing test was administered to them. The students choose and write one topic of recount text based on topics given. The test as some considerations such as: how to describe something accurately, use correct grammar (simple present tense) , use appropriate vocabulary , use mechanic (spelling, punctuation, capitalization) and lastly use fluency (usin simple sentence and flowing style).

III.7 Technique of Data Collection

To collect te data of tis research, the students on both experimental and control classes were given tests namely; pre-test and post-test. Pre-test used to determine the students' reading comprehension and

students' writing ability in recount text before giving treatment, while post-test is used to identify the students' reading comprehension and students' writing ability in writing recount text after the treatment was given. It was used to explore the development of students' comprehension of recount text by using Comic Strips strategy. In doing the test the students were instructed to write and answer questions about recount text in 2 x 40 minutes.

III.8 Validity and Reliability Test.

III.8.1 The validity of instrument

Before collecting the data, the researcher tried to test the items that should be ideally to test. The purpose of test was to find out the quality of the test items. As Brown (2000:22) states that a test is method of a measuring a person's ability, knowledge, or performance in a given domain. Validity is the extent to which inferences make from assessment result are appropriate, meaningful, and useful in terms of the purpose of the assessment.

The researcher analyzed the points of difficulty level and discrimination index by using a formula (Heaton, 1975 : 178).

$$FV = \frac{R}{N} x100\%$$

Where :

FV : The index of difficulty

R : The number of correct answer

N : The number of respondents

III.8.2 The reliability of Instrument

A reliability is an important characteristic of a good test. In order to calculate the reliability of the test, the researcher finds out the students' mean scores of standard deviation.

To find out the reliability of the test the following formula was used; the discrimination index of an item indicates the extent to which the item discriminates between the students, separating the more able students from the less able. The following formula is taken from Heaton (1975: 164) as follow :

$$r_{ii} = \frac{N}{N-1}(1 - \frac{m(N-m)}{N(X)^2}$$

$$M = \frac{\sum x}{N} \text{ and } S^2 = \frac{\sum x^2 - \frac{(\sum x_i)^2}{N}}{N}$$

Where :

r_{ii} : Reliability of the test

N : The number of item in the test

M : The mean score of all the test

S^2 : The standard deviation of all the test score

Table 3.5
Ccriteria Coefisien of Reliability

Coefisien Reliability	Criteria
$0{,}80 \leq r_{11} \leq 1{,}00$	Highest reliability
$0{,}60 \leq r_{11} \leq 0{,}79$	High reliability
$0{,}40 \leq r_{11} \leq 0{,}59$	Middle reliability
$0{,}20 \leq r_{11} \leq 0{,}39$	Low reliability
$0{,}00 \leq r_{11} \leq 0{,}19$	Lowest reliability

III.9 Data Analysis Technique

Post-test score from experimental and control classes were used in order to find out whether there is a significant effect or not of using comic strips strategy on students' reading comprehension and writimg ability at MTs Nurul Islam Seresam. The writer used simple regression by SPSS 20.

III.9.1 Independent sample t-test

To find out whether there is a significant difference or there is no a significant difference between two or more variables can be analyzed by using Independent Sample t_{test}. Gay states that the t-test for independent sample is used to determine whether there is probably a significant difference between the means of two independent samples. Independent sample t-test uses to find out the results of the first and fourth hypotheses.

To analyze the final-test scores of an experimental group and a control group, the researcher used the following formula:

$$t = \frac{M_X - M_Y}{\sqrt{\frac{(SD_X)^2}{N_1 - 1} - \frac{(SD_Y)^2}{N_2 - 1}}}$$

Where :

t 1. = The value of comparing two means

M_X= Mean of the score in pre-test

M_Y = Mean of the score in post-test

SD_X =Standard deviation of experimental group

SD_Y = Standard deviation of control group

N_1 = Number of the sample in pre-test

N_2 = Number of the sample in post-test

1 = the constant number

The t-table has the function to see if there is a significant difference among the mean of the score of both experimental and control group. The t-obtained value was consult with the value of t-table at the degree of freedom (df) = (N1+N2)-2 which is statistically hypothesis:

H_a: to > t-table

H_o: to < t-table

H_a is accepted if to > t-table or there is effect after giving the treatment by using comic strips strategy on students' reding comprehension and students' recount ability at MTs Nurul Islam Seresam.

H_o is accepted if to< t-table or there is no effect after giving the treatment by using comic strips strategy on students' reding comprehension and students' recount ability at MTs Nurul Islam Seresam.

III.9.2 Paired Sample t-test Non-Independent Sample t-t_{test}

Non-Independent Sample t-t_{test} is also knows as Paired-Sample t_{test}. The researcher used this formula to obtain the results of the second and third hyphotheses that was to find out whether there is a significant effect of using comic strips strategy on students' reding comprehension and students' writing ability at MTs Nurul Islam Seresam. Gay (2000:484) states that t-test for non-independent sample uses to compare a single groups' performance on pre-test and post-test or on two different treatments.

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N\,(N-1)}}}$$

D : Gain Score (D=X2-X1)

Afterward, it is better to find the effect size of T-test by following formula:

$$\tilde{\eta}^2 = \frac{t^2}{t^2+n-1}$$

eta squared = $\tilde{\eta}^2$ *x 100%*

Where:

eta squared : Coefficient effect

$\tilde{\eta}^2$: Coefficient