

CHAPTER III

METHOD OF RESEARCH

This chapter discusses research design, research setting, population and sample, research instrument, data collection procedure, data analysis procedure, and research procedure.

A. Research Design

The objective of this research is to know the mastery of the eighth grade male students of MTs Nipa Rakha and female students of MTs Nipi Rakha in degree of comparison, and to find out whether or not there is any significant difference in mastering degree of comparison between male students of MTs Nipa Rakha and female students of MTs Nipi Rakha. Thus, the writer uses a quantitative approach in this research.

According to Gay (2011, p.7), “quantitative research is the collection any analysis of numerical data to describe, explain, predict, or control phenomena of interest. One of research designs in quantitative approach is ex-post facto design”. Cohen et al. (2007, p.205) argues that “ex-post facto study is a method of teasing out possible antecedents of events that have happened and cannot, therefore, be engineered or manipulated by the investigator. It uses numerical data to determine the result”. Since the data of the research is the students’ score, this design is appropriate to apply in this research. The data are got by doing the degree of comparison test to male and female

students at two schools. Further, it will be used to find out whether or not there is any significant difference in mastering degree of comparison between male students of MTs Nipa Rakha and female students of MTs Nipi Rakha.

B. Research Setting

This research has conducted for 2 months, at MTs Nipa and MTs Nipi Rakha, Jalan Rakha Pakapuran Amuntai Po Box 102. These schools were chosen since they have specific students. MTs Nipa Rakha has male students and MTs Nipi Rakha has female students. It helped the researcher not to divide the class into two groups since those have been divided based on the students' sex. Another reason is because of the researcher as an alumnus of MTs Nipi Rakha who looked at an interesting phenomenon. Many people said that the female students of MTs Nipi Rakha have better than the male students of MTs Nipa Rakha. This research was hoped to be able to disclose the fact that happens in these schools especially about students' mastery in degree of comparison.

C. Population and Sample of The Research

In quantitative research, the writer needs to establish the population and sample. It is based on Mc Kay's statement (2006, p.6) who defines that "quantitative research method is used to analyze population and sample". It begins with research questions and hypotheses which have been stated in the first chapter in order to verify which of such hypotheses are true. To get better

understanding about the population and sample of this research, both will be discussed here.

1. Population of The Research

The population of this research is all of the eighth grade male students of MTs Nipa Rakha and the eighth grade female students of MTs Nipi Rakha. There are 183 male students of MTs Nipa Rakha which are divided into 5 classes and there are 177 female students of MTs Nipi Rakha which are divided into 5 classes. Thus, the total of the students is 360 students.

Table 3.1 Description of the population of the eighth grade male and female students of MTs Nipa and Nipi Rakha in the academic year 2015/2016

No.	School	Class	SEX		SUM
			Male	Female	
1	MTs Nipa Rakha	VIII A	37	-	37
		VIII B	36	-	36
		VIII C	38	-	38
		VIII D	40	-	40
		VIII E	32	-	32
2	MTs Nipi Rakha	VIII A	-	34	34
		VIII B	-	36	36
		VIII C	-	36	36

(table continues)

Table 3.1 (Continued)

No.	School	Class	SEX		SUM
			Male	Female	
2.	MTs Nipi	VIII D	-	36	36
	Rakha	VIII E	-	35	35
Total		10	183	177	360

2. Sample of The Research

According to Arikunto (2006, p.112), “if the population is less than 100 people it had better take all people as the subject of the research. But, if the number of population is a lot, it can be taken among 10-15% or 15-25% or more”. In addition, Rascoe in Sugiyono (2009, p.91) says that “if the samples are divided into subsample (male and female), the minimum sample size is 30 for each category”. Thus, based on these theories, the population of this research is 360 students so the sample of this research was taken 25%. It was divided into two groups, 45 male students of MTs Nipa Rakha and 45 female students of MTs Nipi Rakha.

In this study, the writer chooses purposive random sampling to get the participants as the sample of this study because every individual has an equal chance of being selected and the probability of a member of the population being selected is unaffected by the selection of other members of the population. Sugiarto (2003, p.35) Since the sample size is 45 students for each category, the writer took 9 students in each class. The description of the sample of this study can be seen clearly on the table.

Table 3.2 Description of the sample of the eighth grade male and female students of MTs Nipa and Nipi Rakha in the academic year 2015/2016

No.	School	Class	SEX		SUM
			Male	Female	
1	MTs Nipa Rakha	VIII A	9	-	9
		VIII B	9	-	9
		VIII C	9	-	9
		VIII D	9	-	9
		VIII E	9	-	9
2	MTs Nipi Rakha	VIII A	-	9	9
		VIII B	-	9	9
		VIII C	-	9	9
		VIII D	-	9	9
		VIII E	-	9	9
Total		10	45	45	90

D. Research Instruments

The instruments used in this study are written test, observation, interview, and documentary. All of them were explained as follows:

1. Written Test

The main instrument in this research is written test. The questions of the tests were taken from lesson materials of the eighth grade of Islamic junior high school. It had been adjusted based on the curriculum

used in MTs Nipa and Nipi Rakha in order to make sure the validity and reliability of the test.

In this research, the researcher will provide 44 multiple choice questions which have been done in 40 minutes by the students. These questions consist of 7 questions of positive degree, 19 questions of comparative degree, and 18 questions of superlative degree. In addition, 19 questions of comparative degree will be divided into 4 questions of one syllable form, 3 questions of two syllables form by adding –er, 4 questions of two syllables form by adding more, 4 questions of three syllables form or more, and 4 questions of irregular form. Furthermore, 18 questions of superlative degree will be divided into 4 questions of one syllable form, 3 questions of two syllables form by adding the ...–est, 4 questions of two syllables form by adding the most, 4 questions of three syllables form or more, and 3 questions of irregular form. The test is arranged by the researcher based on the forms. The description of the test forms can be seen clearly in the table below.

Table 3.3 Description of the test forms for the eighth grade male and female students of MTs Nipa and Nipi Rakha in the academic year 2015/2016

Testing Objective	Aspect of Structure	Test item	Total
The students are able to answer degree of comparison	Positive Degree	3, 6, 7 11, 14, 35, 44	7
	Comparative Degree		
	One syllables	1, 4, 15,20	4

(table continues)

Table 3.3 (Continued)

Testing Objective	Aspect of Structure	Test item	Total
The students are able to answer degree of comparison correctly which are constructed in the form of multiple choice	Positive Degree	3, 6, 7 11, 14, 35, 44	7
	Comparative Degree		
	One syllables	1, 4, 15, 20	4
	Two syllables by adding –er	10, 25, 30	3
	Two syllables by adding more	16, 19, 31, 33	4
	Three syllables or more	9, 23, 32, 34	4
	Irregular	26, 28, 29, 39	4
	Superlative		
	One syllables	2, 5, 22, 36	4
	Two syllables by adding the ...–est	8, 24, 38	3
	Two syllables by adding the most	12, 37, 42, 43	4
	Three syllables or more	13, 21, 40, 41	4
	Irregular	17, 18, 27	3
Total			44

The right answer will be marked 2,27 and wrong answer will be marked 0. If the students answer all items correctly, they will get score

100 that is the highest score. For measurement, it can be formulated as follows:

$$S = \frac{F}{N} \times 100$$

Explanations:

S = Score

F = The frequency of answer from respondents for each item

N = Total number of respondents

After the writer gives score, the writer counts the mean with the following formula:

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

Explanations:

M = Mean

X = Total score

N = Total number of respondent

In addition, Sugiyono (2012, p. 122) says that a good instrument (test or non-test) must be valid and reliable. Therefore, the test of validity and reliability had to be done in order to test the test items whether they were valid and reliable or not before collecting the data.

a. Validity Test

Validity test was conducted to get the valid questions given for the test. Sugiyono (2012, 121) says that a valid instrument means a

measuring instrument which is used to get valid data. To measure the validity of the test items were measured with the formula below:

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

Explanations:

r_{xy} : the correlation of product moment

N : number of respondents

X : number of test items

Y : the total of the students' score (Arikunto, 2012, p. 85)

If the Sig shows < 0.05, it means the item is valid. From 50 questions given in tryout, there were 44 questions which were valid, while there were 6 questions which were invalid. The researcher only used the valid questions for this test. Table below shows the question numbers which were valid and invalid.

Table 3.4 The Result of Validity Test

No	Item	Question Number
1	Valid	2, 3, 5, 6, 7, 9, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50
2	Invalid	1, 8, 10, 17, 35, 41

b. Reliability

Sugiyono (2012, p. 121) explains that a reliable instrument is an instrument which is used to measure a same object will get same

data in many times. It was measured with the formula of Cronbach's alpha below:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right)$$

Explanations:

r_{11} : the reliability of the items

$\sum \sigma_i^2$: number of various score in each item

σ_t^2 : total of various score

If $r_{11} \geq r_{tabel}$, it can be stated that the test item is reliable. Whereas if

$r_{11} < r_{tabel}$, it can be stated that the test item is unreliable.

2. Observation

This instrument is used by the writer to observe details about teaching degree of comparison, activities students in the class and the facilities of MTs Nipa and Nipi Rakha Amuntai to be able to complete this research.

3. Interview

This instrument is used to collect the data which relating with description of research location, the real condition of the students, the teachers and the facilities of MTs Nipa and Nipi Rakha Amuntai.

4. Documentary

This instrument is aimed at looking for all written reports or documentation which keeps any detailed record of students, teachers, administration staff and the facilities of both schools.

E. Data Collection Procedure

In collecting the data, the instruments of this research are:

1. Editing

This technique is used to examine all the collected data to make certain whether the data have already completed or not.

2. Coding

The writer makes certain codes on all collected data to classify them into each certain category.

3. Frequency Computation

After each data are coded and classified properly, each answer given by the respondents is computed and presented in the tables of frequency.

4. Tabulating

The writer tabulates all the collected data based on frequency to compute each certain answer by using the formula as follow:

$$P = \frac{f}{N} \times 100\%$$

Explanations:

P : Percentage

F : The frequency of answer from respondents for each item

N : Number of respondents

5. Data Interpretation

After counting up all the aspects, it will be gotten which the highest score is 100 point and the lowest score is 0. The total maximum expected score (MES) of all questions is 100 points.

In classifying the score, the writer used the measurement of students' achievement suggested by Haris (1969, p. 134), as follows:

Table 3.5 Interpretation of the Students' Achievement

Test Score	Category
80 - 100	Excellent
60 - < 80	Good
40 - < 60	Fair
20 - < 40	Poor
0 - < 20	Very poor

F. Data Analysis Procedure

In order to read and interpret the data of this study, the writer analyzes data collected and makes conclusion by using the "t" or "t" test formula.

Furthermore, Sudjana and Kusumah (2006, p. 56) explain,

Independen sampel t-test merupakan analisis statistik yang merupakan analisis statistik yang dapat digunakan untuk menguji hipotesis komparatif, khususnya perbedaan rata-rata dua kelompok sampel yang tidak saling berhubungan. Tujuan independen sampel t-test adalah mengetahui signifikan atau setidaknya perbedaan rata-rata antara dua kelompok sampel.

There are 7 steps to process the data until the answer will be gotten, including:

1. After doing the test and each sample has been scored, the writer counts the mean of each graduate by using the following formula:

- a) Mean of male student of MTs Nipa Rakha

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

Explanations:

M : mean from variable x

$\sum x$: accumulative score of variety

N : number of respondents

- b) Mean of female student of MTs Nipi Rakha

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

Explanations:

M : mean from variable y

$\sum y$: accumulative score of variety

N : number of respondents

2. The writer counts standard deviation of each major by using formula:

- a) Standard deviation of male student of MTs Nipa Rakha

$$SD_1 = \sqrt{\frac{\sum (x - \bar{x})^2}{N}}$$

Explanations:

SD_1 : standard deviation of male student of MTs Nipa Rakha

$\sum (x - \bar{x})^2$: accumulative of the quadrant of deviation of male student of MTs Nipa Rakha

- b) Standard deviation of female student of MTs Nipi Rakha School

$$SD_2 = \sqrt{\frac{\sum \hat{e}^2}{(n - E)}}$$

Explanations:

SD_1 : standard deviation of female student of MTs Nipi Rakha School

$\sum \hat{e}^2$: accumulative of the quadrant of deviation of female student of MTs Nipi Rakha School

3. The writer counts standard error of mean from each major by using formula:

- a) Standard error of mean from male student of MTs Nipa Rakha

$$SE_{m_1} = \frac{SD}{\sqrt{n - 1}}$$

Explanations:

SE_{m_1} : Standard error of mean from male student

n : value of constant

- b) Standard error of mean from female student of MTs Nipi Rakha

$$SE_{m_2} = \frac{SD}{\sqrt{n - 1}}$$

Explanations:

SE_{m_2} : Standard error of mean from female students

n : value of constant

4. The writer counts standard error from both samples by using formula:

$$SE_{M_1 - M_2} = \sqrt{SE_{M_1}^2 + SE_{M_2}^2}$$

Explanations:

$SE_{M_1 - M_2}$: standard error for comparative mean of male student of
MTs Nipa Rakha and female student of MTs Nipi Rakha

$SE_{M_1}^2$: Quadrant result of standard error of mean of male student
of MTs Nipa Rakha

$SE_{M_2}^2$: Quadrant result of standard error of mean female student
of MTs Nipi Rakha

5. The writer counts t-test by using formula:

$$t\text{-test} = \frac{M_1 - M_2}{SE_{M_1 - M_2}}$$

Explanations:

t : tests are being sought

M_1 : mean of male students' grammar ability of MTs Nipa
Rakha in mastering degree of comparison

M_2 : mean of female students' grammar ability of MTs Nipi
Rakha in mastering degree of comparison

$SE_{M_1 - M_2}$: standard error difference in mean students' mastering
degree of comparison

This technique is used to analyze truth or wrong about hypothesis
of the research.

6. Giving interpretation for "t" with consulting **t table**

- Looking for Degree of Freedom

$$df/db : (N_1 + N_2) - 2$$

Explanations:

df/db : Degree of Freedom

N_1 : Number of Subject of the male students of MTs Nipa Rakha

N_2 : Number of Subject of the male students of MTs Nipi Rakha

2 : Value of degree of freedom for variables

- Consulting score of “ df/db ” with “ t table”

t table : Value of critic “ t ”

❖ In significant degrees t table 5%

❖ In significant degrees t table 1%

7. The writer makes a conclusion.

- If $t \text{ count} > t \text{ table} = H_0$ (Zero Hypothesis) will be rejected and H_a (Alternative Hypothesis) will be accepted.
- If $t \text{ count} < t \text{ table} = H_0$ (Zero Hypothesis) will be accepted and H_a (Alternative Hypothesis) will be rejected.

Explanations:

\bar{x} : Average number of mean

$\sum x$: Total of score

N : Total of sample

\tilde{N} : Standard of deviation

$SE_{\bar{x}}$: Standard error of mean

$SE_{\bar{x}_1 - \bar{x}_2}$: Standard error of both samples

t_{count} : Student’ “ t ” test score

I. Research Procedure

There are four steps this writing namely:

1. Preliminary step
 - a. To build a prior observation in this research object
 - b. To discuss the result of the previous observation with the writer's academic advisor.
 - c. To make a research design proposal to be submitted to the Tarbiyah team to have approval.
2. Preparatory step
 - a. To hold a seminar on the research design proposal.
 - b. To ask the Dean of Tarbiyah faculty for written to conduct the research.
 - c. To make the instruments of data collecting
3. Research step
 - a. To meet all respondents and informants who are needed to obtain the data.
 - b. To collect all the needed data from the sources by using some techniques of data collecting.
 - c. To process the data in procedural way and then analyze them properly.
4. Organization step
 - a. To arrange and to write the collected data in the first draft.

- b. To consult it with the writer's advisor and his assistant to get some comments and contributions.
- c. To write the final draft after having approved by the writer's advisor.
- d. To be examined before the team of the thesis examiner of Islamic Education Faculty.