CHAPTER III

RESEARCH METHODOLOGY

This chapter focuses on the discussion of the aspects of research methodology that cover research design, population, and sample, data collections, research instrument, validity of the test, reliability of the test, scoring guide, the procedure of collenting data, data analysis, normality distribution test, homogeneity test, and hypothesis testing

3.1 Research Design

According to Ary, Donald (2010), quasi- experimental is experimental research design that has lack randomization of group. According to (Mosteller 1967; Nicholas 1966) experiment is a research collection of data to know the effect of variable and the other variable. Its purpose is to examine the theory. So the aim of this study is to examine the effect of Herringbone Technique Toward Students' Writing Skill in Descriptive Text at the Eight Grade of MTs Nurul Ulum Gumeng. In this research, the researcher use quasi-experimental research design. The researcher use quasi-experimental design because quasi- experimental needed two similar groups as the sample of the research. As Latief (2010) states that quasi- experimental research is the research which takes sample from two different classes in the same grades which has similarity. The classes are experimental group and control group. The experimental group was the group

who taught in writing text by using herringbone technique. And the control group was the group who are not taught writing text by using herringbone technique.

There are two variable in this research, those are Herringbone Technique and Writing Skill. The dependent variable is Herringbone Technique and for independent variable is Writing Skill. in this research, the researcher devide into two group. Those are experimetal group and control group. For experimental group, the researcher get pre-test, treatment, and post-test. And for control group, the researcher only gave pre-test and post-test without applying Herringbone Technique.

In this study, the researcher use pre-test and post-test both of two group. Pre-test conducter before treatment, while post-test was conduct after applying treatment. Those test are to know the effect of Herringbone Technique in writing descriptive text at eight grade of MTs Nurul Ulum Gumeng.

This design was adobted from Donald Ary 2010-316

Group	**Pre-test**	**Independent Variable**	**Post-test**
E	Y_1	X	Y_2
C	Y_1	-	Y_2

Table 3.1 Pre-test Research design

Explanation:
E : Experimental Group
C : Control Group
Y_1 : Pre-test
Y_2 : Post-test
X : Herringbone Technique

3.2 Population, and Sample

3.2.1 Population

According to Ary, Donald (2010), population is all members of any well-defined class of people, events, or objects. The population of this study is the students of first semester in the eighth A and B grade at MTs Nurul Ulum Gumeng, academic year 2016/2017. The total number of the students in the eight grade is about 42 students.

3.2.2 Sample

Sample is a portion of population Ary, Donald (2010). In this research, the technique of selecting sample is cluster sampling. Here, the researcher will use the technique of cluster sampling because the way to collect the sample by random of the class, to get whether the class is representative as the sample or not. From the population, the researcher use two classes of students; there are 21 students of A class and 21 students of B class as the subject of this study. A class was taken as control group and B class was taken as experimental group.

3.3 Data Collections

This study will use writing test to collect the data. The data will be obtained from the participants in the eight grade of MTs Nurul Ulum Gumeng.

3.3.1 Research Instrument

Research instrument is tool of collecting data that should be valid and reliable. According to Suharsimin, Arikunto (2006: 126) the device the researcher uses to collect data is called instrument. In completing the data, the researcher uses data collection technique or uses instrument in this research to collect the

data. The function of data collecting is to determine the result of the research. In collecting data, the researcher uses techniques or instrument that is test. There are three steps to completing the data; 1) conducting a pre-test; 2) a treatment; 3) conducting a post-test.

3.3.1.1 Test

The test is a set of questions to measure the skill, intelligence, ability and talent of an individual of the group. The tests that use in this study is written test. The tests are focus in writing descriptive text. There are two tests in this study, pre-test and post-test. The pre-test will give to students before the treatment. It is to gain the data of students' entry in mastering writing ability. Besides, the post-test given to students after the researcher gives the treatment "herringbone technique" for experiment group and without treatment "herringbone technique" for the control group. The test checks the content validity. The content of the item is based on the standard of competence in the syllabus (school-based curriculum or KTSP) of eight grade of Junior High School.

3.3.1.1.1 Pre-test

The pre-test will give before the students get the treatment. The form of the pre-test is written test to measure students' writing ability in descriptive text. The researcher asks the students to tell their experience with a free topic. The students will make a descriptive text about their experience with their own words. From the result of the pre-test, the researcher will get the students' writing ability.

3.3.1.1.2 Post-test

Post-test is to find out whether the students make progress in their writing ability or not. Post-test will be given after the students get the treatment. The test in this research is written text, especially in the descriptive text. Post-test is to measure the student's writing descriptive ability after giving the treatment and as the comparator between experimental group and control group.

3.4 Validity of the Test

Before doing pre-test and post-test as an instrument of the research, the test should be tried out in terms of validity. There are three kinds of validity; content validity, content-related validity, and construct validity. In this study, the test will be analyzed by using content validity. The content validity is measured by relating the content of the instrument in Indonesia curriculum. Besides, writing is a subjective test, if the subjective test the validity does not use the construct validity as the objective test, but can be broken down into smaller and observable abilities. For example, writing consists of content, vocabulary, organization of ideas, etc. Content validity is not always in numeric form but it can be determined whether the test's items reflect the objective in curriculum guides and syllabus. To test the content validity, the researcher compares the content of instrument to the subject based on English curriculum and English syllabus. If the test content reflects the curriculum guides, and syllabus, the test can be said have content validity. Then the item of the tests is valid.

Core Competency	Basic Competence	Learning Material	Time Allotment
6. Mengungkapkan makna dalam teks tulis fungsional dan esei pendek sederhana berbentuk *descriptive*, dan *recount* untuk berinteraksi dengan lingkungan sekitar	6.1. Mengungkapkan makna dalam bentuk teks tulis fungsional pendek sederhana dengan menggunakan ragam bahasa tulis secara akurat, lancar dan berterima untuk berinteraksi dengan lingkungan sekitar	Describing People	2 x 45 menit
	6.2. Mengungkapkan makna dan langkah retorika dalam esei pendek sederhana dengan menggunakan ragam bahasa tulis secara akurat, lancar dan berterima untuk berinteraksi dengan lingkungan sekitar dalam teks berbentuk *descriptive* dan *recount*	Describing Place	2 x 45 menit

Table 3.2 Core Competency

SILABUS

Sekolah : MTs Nurul Ulum Gumeng

Kelas : VIII (Delapan)

Mata Pelajaran : BAHASA INGGRIS

Semester : 1 (Satu)

Standar Kompetensi **: Menulis**

6. Mengungkapkan makna dalam teks tulis fungsional dan esei pendek sederhana berbentuk *descriptive*, dan *recount* untuk berinteraksi dengan lingkungan sekitar

Kompetensi Dasar	Materi Pokok/Pembelajaran	Kegiatan Pembelajaran	Indikator	Penilaian			Alokasi Waktu	Sumber Belajar
				Teknik	Bentuk Instrumen	Contoh Instrumen		
6.3. Mengungkapkan makna dalam bentuk teks tulis fungsional pendek sederhana dengan menggunakan ragam bahasa tulis secara akurat, lancar dan berterima untuk berinteraksi dengan lingkungan sekitar	Teks fungsional pendek berupa : - Undangan - Pengumuman - Pesan Singkat	1. Tanya jawab berbagai hal terkait tema/topik teks fungsional yang akan dibahas 2. Penguatan kembali kosakata dan tata bahasa terkait jenis teks fungsional	• Melengkapi rumpang teks fungsional pendek • Meyusun kata menjadi teks fungsional yang bermakna	Tes tulis Tes tulis	Essay *Completion*	*1. Write simple sentences based on the situation given.* *2. Write an invitation/ an announcement / message based on the situation given.*	8 x 40 menit	1. Buku teks yang relevanContoh undangan, pengumuman, SMS 2. Gambar yang relevan
	Teks rumpang berbentuk - *descriptive* - *recount*	3. Menulis kalimat sederhana terkait jenis teks	• Menulis teks fungsional pendek	Tes tulis	*Jumbled sentences*		8 x 40 menit	1. Buku teks yang relevan
6.4. Mengungkapkan makna dan langkah retorika dalam esei pendek sederhana dengan menggunakan ragam bahasa tulis secara akurat, lancar dan berterima untuk berinteraksi dengan lingkungan sekitar dalam teks berbentuk *descriptive* dan *recount*	Kalimat acak	4. Menulis teks fungsional pendek berdasarkan konteks 1. Review ungkapan-ungkapan yang mendeskripsikan benda, orang atau tempat. 2. Menulis kalimat yang mendeskripsikan benda, tempat, orang atau binatang berdasarkan gambar/rea	• Melengkapi rumpang teks essai pendek berbentuk *descriptive* • Menyusun kalimat menjadi teks yang bermakna dalam bentuk *descriptive* • Menulis teks essai dalam bentuk *descriptive* .	Tes tulis	*Essay*	• *Complete the paragraph using the suitable words.* • *Rearrange the following sentences correctly.* • *Write an essay describing something or a certain place.*		2. Gambar terkait tema/topik 3. Benda-benda sekitar

		lia. 3. Melengkapi rumpang dalam teks deskriptif dengan kata yang tepat. 4. Menyusun kalimat acak menjadi teks deskriptif yang terpadu. 5. Membuat draft teks deskriptive secara mandiri. 6. Mengekspos teks descriptive yang ditulis di kelas.						

Table 3.3 Syllabus

3.4.1 Reliability of the Test

According to Wallen and Franken (1990: 154) reliability refers to the consistency of the scores obtained how consistent they are for each individual from one administration of an instrument to another and from one set of items to another.

In this study, The writer used Inter-rater Reliability to find out the result reliability test, because writing is concluded as subjective test. According to Brown (2004: 20), Inter-rater rliability occured when two or more scores yield inconsistent scores of the same test, possibly for lack or attention to scoring Criteria, inexperience, inattention, or even preconceived of biases. It was

essentially a variation of the equivalent from type of reliability in that scores are usually produced by tro raters. In can be concluded that inter-rater reliability is the degree of agreement between two raters. To find out the reliability of the test, it held try Out test was be given to non sample students. The writer had done the try out of written test instruments at MTs Nurul Ulum Gumeng to the eight grade students with the total 41 students as the sample for finding reliability of the test. The raters of students' descriptive writing were Safinatul Ulya and Fajrul Falah Cholis, SS.

Case Processing Summary

		N	%
Cases	Valid	41	100.0
	Excluded[a]	0	.0
	Total	41	100.0

a. Listwise deletion based on all variables in the procedure.

Table 3.4

Reliability Statistics

Cronbach's Alpha[a]	Cronbach's Alpha Based on Standardized Items[a]	N of Items
-.050	-1.132	2

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Table 3.5

Classification coefficient Reliabilitas

Besarnya Nilai r_{11}	**Interpretasi**
$0{,}80 < r_{11} \leq 1{,}00$	Sangat Tinggi
$0{,}60 < r_{11} \leq 0{,}80$	Tinggi
$0{,}40 < r_{11} \leq 0{,}60$	Cukup
$0{,}20 < r_{11} \leq 0{,}40$	Rendah
$r_{11} \leq 0{,}20$	Sangat Rendah

Table 3.6

If Cronbach's Alpha value > r-table, the test item are reliable but if Cronbach's Alpha Value < r-table he test items are not reliable. Based on the result of the test item was reliable. It was found from the result of test item reliability SPSS 16.0. The reliability of the test item was enough reliable because Cronbachs' Alpha Value was higher that r-table that was 0.50. forthe result of pre-test and post-test in SPSS 16.0 version.

3.4.2 Scoring Guide

To score the writing test of the learners cannot be done by giving score directly without checking the aspects of writing. The aspects of writing are capacity, organization, lexicon, language use, and mechanic. It means the researcher requires a rubric for assessing writing. The researcher asks the writing rubric to the English educator at MTs Nurul Ulum Gumeng.

The researcher attempts to understand the rubric by comparing with the writing aspects. After comparing, the researcher gets point from the rubric. The first point is there are five aspects which are assessed in writing descriptive text by the teacher. They are content, organization, word choice, grammar, and mechanic. These aspects are similar with the writing aspects but they are written in different words. Such as vocabulary aspect is written with word choice and language use is written with grammar. By looking of this situation, the researcher settles to apply the rubric from the English educator to assess the students' writing test result. There will be three raters to measure the writing test of the students because writing test is kind of subjective test. Here is the rubric:

The researcher uses analytical scoring rubric adapted from Adapted from Brown (2007)

No	Aspect	Score	Performance of Description	Pre-Test	Post-Test
1	Content (C) 30% Topic, details	4	The topic is complete and clear and the details are relating to the topic	☐	☐
		3	The topic is complete and clear but the details almost relating to the topic	☐	☐
		2	The topic is complete and clear but the details are not relating to the topic	☐	☐
		1	The topic is not clear and the details are not relating to the topic	☐	☐
2	Organization (O) 20% (Title, Indentification, Description, Conclution)	4	Mention all organization	☐	☐
		3	Mention 3 organization	☐	☐
		2	Mention 2 organization	☐	☐
		1	Mention 1 organization	☐	☐
3	Grammar (G) 20% Use present tense	4	Very view grammatical	☐	☐
		3	View grammatical	☐	☐
		2	Numerous grammatical	☐	☐
		1	Frequent grammatical	☐	☐
4	Vocabulary (V) 15%	4	Effective choice of words	☐	☐
		3	View misuseof vocabulary words	☐	☐
		2	Confused words	☐	☐
		1	Very poor knowlede of words	☐	☐
5	Mechanics (M) 15% Spelling, Punctuation, Capitalization	4	It uses correct spelling, punctuations, and capitalization	☐	☐
		3	It has occasional errors of spelling, punctuations, and capitalization	☐	☐
		2	It has frequent errors of spelling, punctuations, and capitalization	☐	☐
		1	It is dominated by errors of spelling, punctuations, and capitalization	☐	☐

Table 3.7

$$\text{Total} = \frac{3C + 2O + 2G + 1{,}5V + 1{,}5M}{40} \times 10$$

3.5 The Procedure of Collenting Data

In collecting the data, the researcher conducted some steps: first, after the proposal accepted, the researcher made English test for pre-test and post-test where the test consist of making a descriptive. Second, the researcher divided subject into two groups which consist of experimental group and control group. Third, the researcher gave pre-test and post-test for both of groups as first data. Then, the researcher gave treatment for experimental group using Herringbone Technique. The researcher conducted the treatment until six times for experimental group. Fourth, the researcher gave post-test for experimental group and control group in order to determined the outcomes from Herringbone Technique whether it is success or not. Finally, from the result of statistical calculations, interpretation and conclusions that had been made, the data of pre-test and post-test will be analyzed by using SPSS 16.0 version.

No.	Time	Activity
1.	First meeting	Giving pre-test to experimental and control group
2.	Second meeting	Giving treatment to experimental group
3.	Third meeting	Giving treatment to experimental group
4.	Fourth meeting	Giving treatment to experimental group
5.	Fifth meeting	Giving treatment to experimental group
6.	Sixth meeting	Giving post-test to experimental and control group

Table 3.8 Activity of the Test

3.6 Data Analysis

After conducting the classroom experiment research, the researcher needs to analyze the result. In this study, writing test will analyzed quantitatively. The

accuracy from the aspects of writing skill is content, vocabulary, grammar, and spelling. The researcher analyse the quantitative data to know the tendency of the students' writing scores. She identifies the progress of the students' writing skill due to the actions. Furthermore, the instrument that analyzed quantitatively is the results of pre-test and the post-test.

In this study, the researcher will use SPSS 16.0 especially independent sample t-test to analyzing the data. Independent sample t-test is used to find out the results of the first and second hypothesis. They are to find out significant difference of students' writing skill who are taught by applying flipped learning through graphic organizers (experimental group) and the students' writing skill who are taught by applying think talk write method (control group). Here are the steps of analyze the data:

3.6.1 Normality Distribution Test

Normality distribution test is used to find out whether or not the data between two groups are normally distributed. The researcher uses normality distribution test because she wants to know the data between experimental group and control group toward writing skill are in normal distribution or not. To analyze it, this researcher uses Kolmogorov-Smirnov test in SPSS. The procedure to analyze the normal distribution is selecting Analyze, choose Descriptive Statistics, then Explore, input the variable score to Dependent List, group variable to Factor List, click Plots and give Normality plots with test, click Continue, and then click OK.

3.6.2 Homogeneity Test

Homogeneity test is used to find out whether the research population has the same variance or not. The researcher also uses homogeneity test because she wants to know the variance between experimental group and control group toward writing skill are homogeneous or not. To analyze it, the researcher uses Lavene's test. The test statistic of Lavene's test (W) is defined as follows:

$$W = \frac{(N-k)}{(k-1)} \frac{\sum_i^k = 1\, Ni\, (Zi - Z)^2}{\sum_i^k = 1 \sum_j^{Ni} = 1\, (Zij - Zi)^2}$$

Where :

W	: The result of the test
K	: The number of different groups to which the samples belong
N	: The total number of samples
N_{ij}	: The number of sample in the i^{th} group
Y_{ii}	: The value of J^{th} sample from the i^{th} group

Z_{ij} : $\begin{cases} |Y_{ij} - \bar{Y}_i|\bar{Y}_i) \text{is a mean of i}^{th} \text{ group} \\ |Y_{ij} - \bar{Y}_i|\bar{Y}_i) \text{is median of i}^{th} \text{ group} \end{cases}$

The significance of W is tested against F (α, K-1, N-K) where F is a quintile of F test distribution, with K-1 and N-K its degree of freedom, and α is the chosen level of significance (usually 0,05, or 0,01).

The procedure to analyze the homogeneity test is inserting the pre-test data both experimental and control group, click Analyse, then Compare Means, choose Independent Sample T-Test and then click OK. The output automatically shows the result of Lavene's test.

3.6.3 Hypothesis Testing

Independent t-test is used to find out the significant difference of using four square writing method in writing narrative text between experimental and control group. The steps of t-test calculation are: First, test the hypothesis of the

research and the setting α (alpha) level at 0.05 (two-tailed test). The hypothesis in this research could be formulated as follow:

Hypothesis testing in this study is:

H_0: There is no significant effect of herringbone technique through graphic organizers toward writing skill at MTs Nurul Ulum Gumeng

H_1: There is a significant effect of herringbone technique through graphic organizers toward writing skill at MTs Nurul Ulum Gumeng

The second step is finding t-value using independent t-test formula and comparing the probability with the level of significance for testing the hypothesis. After the scores were computed in SPSS 16.0, see the output of independent t-test and interpreted the output that if sig (2-tailed) > (0.05), the researcher should accept the H_0 but if sig (2-tailed) < (0.05), the researcher can reject H_0, it means H_1 is accepted.

T-test was calculated to find out the comparison of two means between experimental and control group pre-test and post-test. In analyzing the data, the researcher uses independent t-test formula. The formula is:

$$t = \frac{(x_1 - x_2) - (\mu_1 - \mu_2)}{Sx_1 - x_2}$$

Where :

t	: t value
x_1	: Average group1
x_2	: Average group 2
S	: Standard error of the two group
$\mu 1 - \mu 2$	: Always default to 0

$$Sx_1 - x_2 = \sqrt{\frac{S^2pooled}{n_1} + \frac{S^2pooled}{n_2}}$$

Where :

$Sx_1 - x_2$	: Standard error of two groups
$S^2pooled$	: Variants of two groups
n_1	: Number of sample group 1
nn_2	: Number of sample group 2

Standard Error of the differences

$$Sx_1 - x_2 = \sqrt{\left(\frac{SS^2pooled}{n_1}\right)\left(\frac{S^2pooled}{n_1}\right)}$$

To calculate t-test, the researcher uses SPSS (Statistical Product and Service Solution). It is aims to find out the significance effect of flipped learning through graphic organizers toward writing skill. The post-test score both experimental group and control group will analyzed by using SPSS 16.0 with some procedures. The first procedure is inserting the post-test data both experimental group and control group using the data view. The second procedures is selecting Analyse, then Compare Means, and choose Independent Sample T-Test output, automatically it could answer to the research question about the comparison between two groups. The final result is collecting by means of pre-test and post-test score.