CHAPTER III

RESEARCH METHODOLOGY

This chapter explains the procedures which operated in this research. This chapter also elaborates the research design, data collection and data analysis.

3.1 Research Design

As mentioned in Chapter I, the research design used in the study was quasi experimental. In this research, the writer tried to investigate the effectiveness of interactive writing in improving students' writing ability and to figure out students' response toward the interactive writing.

As stated by Bell (1980) quasi experimental design estimates how an experimental or treatment affects a group. In order to work this design the researcher measured not only the data from experimental group, but also the data without an experimental. The researcher of experimental design did the study by dividing subjects into two groups by considering that each class had same characteristics—one that participates on the experiment and one that does not.

The design is formulated as:

G1	T1	X	T2
G2	T1	-	T2

Note: G1 = experimental group

G2 = control group

T1 = pre-test

T2 = last writing draft

X = treatment task during 6 weeks

- = no treatment task

Meanwhile to figure out students' responses toward the interactive writing session, the researcher determined to employ questionnaire.

3.2 Research Variables

As cited in Hatch and Hossein (1982, p. 12) variable is "an attribute of a person or of an object which 'varies' from person to person or from object to object". It means that Variable is the research object or the basic points of the research.

This research contains two variables, independent variable and dependent variable. Hatch and Hossein (1982, p. 15) stated that independent variable is the major variable which is analyzed by the researcher. The variable is chosen, operated, and measured by the researcher. The dependent variable, on the contrary, is the variable which the researcher observes and measures to verify the effect of the independent variable. In this research, the independent variable is the interactive writing whereas the dependent variable is the students' writing ability.

3.3 Setting

The setting of the research was Madrasah Aliyah PPI 76 Tarogong Garut. It was located in Jl. Pembangunan No. 1 Simpang Lima Tarogong, Garut.

3.4 Population and Sample

The research population was the 210 students of eleventh grade Madrasah

Aliyah PPI 76 Tarogong Garut. The sample of the research was the students of XI Sains1 and XI Sains 2.

The researcher determined the students of eleventh grade as the sample because they have been familiar with the narrative text and they have sufficient vocabularies to maintain interactive writing technique through presenting and discussing their writing in front of their friends as the reader.

The researcher ascertained the sample through purposive sampling. One class would be treated as the experimental group and another class would be worked as the control group.

3.5 Instruments

The instruments used in this research were writing test and questionnaire.

3.5.1 Writing Test

Since writing is a process not a product, writing tasks are used to collect the data related to the effectiveness of interactive writing. Those are the pre-test, the process writing during the treatment, and the last writing draft which were held to the experimental group. Besides in control class, the data were obtained from pre-test and the last draft of the writing. The test instrument was students' narrative writing assignment in 150-200 words. The students' writing assignment would be scored as:

Table 3.1

Writing Scoring Guide

Score	Aspects		Criteria
The Maximum score is 25	Content	(5)	Conveys message clearly, smooth and logical style
		(4)	Overall message may not be completely smooth or logical
		(3)	Conveys message clearly
		(2)	Conveys message adequately
		(1)	Conveys message inadequately
	Organization	(5)	Highly appropriate with the model text
		(4)	Quite appropriate with the model text given
		(3)	Appropriate with the model text given
		(2)	Less appropriate with the model text given
		(1)	Not appropriate with the model text given
	Diction	(5)	vocabulary appropriate for the grade level
		(4)	a satisfactory use vocabulary for the grade level
		(3)	There are few errors in vocabulary but still understandable
The minimum score is 5		(2)	the errors in vocabulary make it difficult, but not impossible, to understand the student's meaning
		(1)	The use of vocabulary is so flawed that it is not possible to understand the student's meaning
	Grammar	(5)	Good sentence structure
		(4)	Good sentence structure (e.g., all sentences are complete) but adequate style: Sentences may be somewhat choppy
		(3)	Adequate sentence structure (e.g., most sentences are complete)
		(2)	Weak sentence structure; incomplete sentences or poorly structured sentences (e.g., comma splices, fused sentences)
		(1)	Overall lack of proper sentence structure
	Mechanics	(5)	No mechanical errors
		(4)	May have a few minor mechanical errors that do not interfere with comprehension
		(3)	Some mechanical errors: Problems with spelling, punctuation, etc. do not interfere with comprehension
		(2)	Many mechanical errors that may interfere

			with comprehension
		(1)	Gross mechanical errors that may be very difficult to decipher

Adopted from F. M. Newmann, W. G. Secada, and G. G. Wehlage (1995)

3.5.2 Questionnaire

Questionnaire was used to obtain students' response toward the interactive writing. The questionnaire contains two kinds of question, eight close questions with Likert scale and two open questions. In this research the close questions has four responses category; they were *Sangat Setuju (SS), Setuju (S), Tidak Setuju (TS)* and *Sangat Tidak Setuju (STS).* The students were expected to choose the answer related to their responses toward the technique. The researcher consulted the questions of the questionnaire before it was given to the respondents.

3.6 Data Collection

To gain some information, the researcher collected the data. The data analyzed were obtained from the result of the pre-test and last writing draft which was held to the control group and experimental group.

3.6.1 Pre-test

Pretest was taken from the control group and experimental group in the first meeting of the research. The pretest was held at October 15th 2008. The students were asked to write a narrative text based on the explanation and the example given. Because of the limited of time, the students were asked to write narrative text assignment in 150-200 words which was held in 60 minutes with free topics.

3.6.2 Treatment (Writing Tasks)

The interactive writing technique in feedback was given to the experimental group whereas the control group was given the directive feedback from the researcher. The experimental group is XI Sains 2 and the control group was the XI Sains 1. The time schedule of the research held both in control group and the experimental group is described as:

Table 3.2

Time Schedule of the Research

Control Group	Activities	Experimental Group	Activities
Oct, 15th 2008	Pre Test: The students were asked to write narrative text with free topics based on the explanation given	Oct, 15th 2008 (2 x 45 minutes)	Pre Test: The students were asked to write narrative text with free topics based on the explanation given
Oct, 21st 2008	The teacher gave directive feedback to students' writing	Oct, 19th 2008 (2 x 45 minutes)	Interactive writing session: Writing workshop or in class writing
Oct, 22nd 2008	The teacher gave directive feedback to students' writing	Oct, 22nd 2008 (2 x 45 minutes)	The students who had presented their writing collected their revision Interactive writing session: Writing workshop or in class writing
Oct, 28th 2008	The teacher gave directive feedback to students' writing	Oct, 26th 2008 (2 x 45 minutes)	
Oct, 29th 2008	The students' writing which had been corrected by the teacher were returned to the students and the students were asked to revise their writing	Oct, 29th 2008 (2 x 45 minutes)	The students who had presented their writing collected their revision Interactive writing session: Writing workshop or in class writing

Nov, 4th 2008		Nov,2nd 2008 (2 x 45 minutes)	
Nov, 5th 2008		Nov,5th 2008 (2 x 45 minutes)	The students who had presented their writing collected their revision Interactive writing session: Writing workshop or in class writing
Nov,11th 2008		Nov,9th 2008 (2 x 45 minutes)	
Nov,12th 2008		Nov,12th 2008 (2 x 45 minutes)	The students who had presented their writing collected their revision Interactive writing session: Writing workshop or in class writing
Nov,18th 2008	Post Test: The students were asked to collect the narrative text which had been returned by the teacher	Nov,16th 2008 (2 x 45 minutes)	
		Nov,19th 2008 (2 x 45 minutes)	The students who had presented their writing collected their revision • Last Interactive writing session: Writing workshop or in class writing (75 minutes) • The writing final draft were collected and the questionnaire were distributed (15 minutes)

3.6.3 Last Writing Draft

The last writing draft was taken from the control group and experimental group. In the control group the last writing draft was the revised edition from the first draft which had been corrected in directive feedback. Whereas, in

experimental group, the last writing draft was the revised edition from the first draft which had been presented in interactive writing session.

Meanwhile the questionnaire was distributed in experimental group only, to figure out the students' responses toward interactive writing implemented in the classroom.

3.7 Data Analysis

After achieve the pre-test and the last writing draft data, the data were analyzed with these several steps:

A. Hypothesis Testing Analysis

1) Data Normality Test

To verify the normality, the researcher tests the data normality obtained from pre-test and last writing draft, not only in the experimental group but also in control group. Since the data are obtained in the ordinal form, the researcher operated Kolmogorov-Smirnov Test, which is formulated as:

$$D = \max \{F_0 (X) - S_N\}; S_N(X) = k/N$$

Notes: $F_0 (X)$: distribution of cumulative frequency based on the H_o/ the sum of expected with same to N or less than X

$S_N (X)$: distribution of sample cumulative frequency of N observed

k : the sum of same observed or less than X

The result of the computation is comparing the value of D_{obtain} with D_{table}. The significance is $\alpha = 0.05$, if $D_{obtain} > D_{table}$, H_o is rejected. It means that the data do not have normal distribution. Nevertheless to easier the data analysis, the researcher determined to operate SPSS 12.0 for windows.

2) Homogeneity of Data Variance Test

To determine the t-test formula which is operated in the research, the researcher tests the homogeneity of data variance obtained from pre-test and last writing draft both in control group and experimental group. If the data have homogenous variance, the researcher will use t-test formula. If the data do not have homogenous variance, the researcher will use t′ formula. The F test is used to test data homogeneity of variance which is formulated as:

$$F = \frac{Va}{Vb}$$

Notes: Va : the biggest Variance

Vb : the smallest Variance

If the F_{obtain} less than F_{table}, H_o is accepted. It means that the data have homogenous variance. However to easier the data analysis, the researcher determined to operate SPSS 12.0 for windows.

3) T- Test

If the data have normal distribution and homogenous variance, the t-test formula is used to test the hypothesis. This testing is operated to the pretest and

last writing draft both to the experimental group and control group. The hypothesis is formulated as:

H_o: $\mu_1 = \mu 2$

H_1: $\mu_1 > \mu_2$

Notes: H_o : null hypothesis

H_1 : alternative hypothesis

μ_1 : means of experimental group

μ_2 : means of control group

If the data have normal distribution and have homogenous variance, the researcher will operate t-test formula, to test the hypothesis of difference between two means which is described below:

$$t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{S1^2}{n1} + \frac{S2^2}{n2}}}$$

Whereas if the data have normal distribution and do not have homogenous variance, the t' test formula will be worked to test the hypothesis, which is formulated as:

$$t' = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}\left[\frac{1}{n_1} + \frac{1}{n_2}\right]}}$$

Notes: $\overline{X}_1$: mean of sample 1

$\overline{X}_2$: mean of sample 2

S_1^2 : variance of sample 1

S_2^2 : variance of sample 2

n_1 : sum of sample 1

n_2 : sum of sample 2

Nevertheless if the data do not have normal distribution, the *Mann-Whitney* test will be operated to test the hypothesis which is formulated as:

$$U1 = n_1 n_2 + \frac{n_1(n_1+1)}{2} - R_1$$

$$U2 = n_1 n_2 + \frac{n_2(n_2+1)}{2} - R_2$$

Notes: n_1 : sum of sample 1

n_2 : sum of sample 2

U_1 : sum of first grade

U_2 : sum of second grade

R_1 : sum of grades of n_1

R_2 : sum of grades of n_2

The U value which operated to the formula is the smaller value. Then the U_{obtain} compare to the U_{table}. Even so to easier the data analysis, the researcher determined to operate SPSS 12.0 for windows.

B. Questionnaire Data Analysis

The questionnaire is given to experimental group only. The procedures of analyzing the data obtained are:

1. Data Selection

The data analyzed is the data which all the questions is answered by the respondents.

2. Data Display

The data displayed in the form of table in order to gain the frequency of each alternative answer and to make the data easier to interpret.

3. Data Analysis

The data taken from questionnaire is analyzed by using Likert scale and descriptive analysis. Each answer is given score. According to Suherman (1990: p. 236-237) the score used to transfer the qualitative scale into quantitative scale are:

For favorable statement:

SS is scored 5	TS is scored 2
S is scored 4	STS is scored 1

Whereas for unfavorable statement:

SS is scored 1	TS is scored 4
S is scored 2	STS is scored 5

The score of each subject is calculated. If the score more than three, the subject has positive response toward the technique implemented in the classroom. If the score less than three, the subject has negative response toward the technique implemented in the classroom. Furthermore if the score is three, the subject has neutral response toward the technique implemented in the classroom.

The percentage of the subject which has positive, negative or neutral response toward the technique in the classroom can be calculated as:

$$P = \frac{h}{n} \times 100\%$$

Notes: *h*: students' number who shows positive/negative/neutral response

n: students' number of experimental group

Whereas the percentage criterion of the students' response computation would be classified as the table follows:

Table 3.3
The Percentage Criterion of Students' Response

The Percentage	The Classification
0%	None
1-25 %	Small number of
26-49 %	Nearly half of
50 %	Half of
51-75	More than half of
76-99 %	Almost of
100 %	All of

(Kuntjaraningrat in Setiawandi 2006)