

CHAPTER III  
**RESEARCH METHOD**

**A. Research Design**

In conducting this research the writer used experimental design. There were Control Group (CG) and Experimental Group (EG). To capture the initial differences between the groups, pre-test administered before the treatment. In this design, the experimental group received the special treatment while the control group did not. After the treatment, both groups had a post-test to find out the effectiveness of the treatment given. Next, both result compared, in order to find out the cause and effect of the treatment.

The research design that is used in this study is Randomized Control Group Pretest-Posttest. In this research the influence of the treatment was calculated on the different gain ( $T2 - T1$ ) between the experimental group and the control group (Luhut P. Panggabean, 1996:23).

Research design of Randomized Control Group Pretest-posttest

Sample	Pre-Test	Treatment	Post-Test
Experimental Class (e)	T1	X	T2
Control Class (c)	T1	-	T2

Explanation:

T1 = pretest

T2 = posttest

X = Using tourism brochures

- = Learning by conventional model

The different result between T1 and T2 or gain for each group was calculated  $(T2e-T1e)$  and  $(T2c-T1c)$ . Then the writer calculated the mean. Then both gains were tested whether there was significant difference for testing the hypothesis.

## **B. Population and Sample**

According to Suharsimi Arikunto (1998:115) population is a whole research subject. When a researcher analyzes all the elements that exist in the research area, then the research is a population research". In this study the population was third grade student of Madrasah Tsanawiyah (MTs) Assalafiyah Assirojiyah Cicalongkulon, Cianjur, 2006/2007 which consist of five classes.

The sampling technique used in determining the research sample was Cluster Random Sampling. Cluster Random Sampling is sample that is chosen from some groups of population. The random sampling that was used in this study was by raffling the five classes then took the two classes as the sample of the study. Appropriate with the research design, one class was an eperimental group, and the other class was a control group. The experimental group received the special treatment while the control group did not.

## **C. Process and Procedure of the Research**

There were some process and procedure that were administered during the research in order to find out a valid result in answering the research question.

a. Administering Pre-test

A pre-test was administered to both groups to ensure that the students had the same background and the same English proficiency before they received the treatment.

The pre-test was implemented in order to gain the data of students' knowledge especially in writing descriptive text of both group and to find out the homogenous group.

b. Conducting the treatment using tourism brochures

In this study the writer used some attractive tourism brochures as the media in teaching writing descriptive text. The writer found the tourism brochure from the local tourism area, such as Safari Garden, Sea World Indonesia, Megamendung Permai Hotel and Resort, Puncak Pass Restaurant, Cibodas National Park, and Taman Bunga Nusantara.

The treatment was carried out in seven meetings from November to December 2006. The treatment was included into the syllabus that is attached in the appendix.

c. Administering Post-test

Post-test was distributed to both groups at the end of the program to find out the result of the whole treatment. The procedure of doing post-test was similar to pre-test. The reason was to find out whether or not the students made progress in their writing ability.

#### D. Instruments

The instrument used in this research was intended to dig and elicit the whole relevant data. The instrument was the writing composition test.

The writing test made for the purpose of this research was in the form of writing text to make a descriptive text by using the tourism brochures. The tourism brochures were the media for the students to improve their writing ability especially in writing descriptive text.

Subsequently, the appraisal towards students' composition work was based on: content, organization, vocabulary, language use, and mechanics (range from 1-4).

Scoring Form of Students' Descriptive Writing

No	Scoring Aspect	Scoring Scale			
		1	2	3	4
1	Content				
2	Organization				
3	Vocabulary				
4	Language Use				
5	Mechanic				

Based on an analytical scale from Jacobs et al. (1981, in Hughes, 2003: 104), the description of the writing scoring system are as follow.

a. Content

It covered the students' knowledge of the subject, and the relevance of students' writing product to assigned topics.

(4) = knowledgeable; substantive; thorough development of thesis; relevant to assigned topic.

(3) = some knowledge of subject; adequate range; limited development of thesis; mostly relevant to topic but lack of detail.

(2) = limited knowledge of subject; little substance; inadequate development of topic.

(1) = does not show knowledgeable of subject; non-substantive; not pertinent; or not enough to evaluate

#### b. Organization

It covered clear statement of idea, fluent expression of ideas, and well-connected ideas.

(4) = fluent expression; ideas clearly stated/supported; succinct; well organized; logical sequencing; cohesive.

(3) = somewhat choppy; loosely organized but main ideas stand out; limited support; logical but incomplete sequencing.

(2) = non-fluent; ideas confused or disconnected; lack logical sequencing and development

(1) = does not communicate; no organization; or not enough to evaluate.

#### c. Vocabulary

It covered the effective use of choice of words (diction)

(4) = sophisticated range; effective word/idiom choice and usage; word from mastery; appropriate register.

(3) = adequate range; occasional errors of word/idiom form, meaning, and usage but meaning not obscured.

(2) = limited range; frequent errors of word/idiom form, choice, usage; meaning confused or obscured

(1) = essentially translation; little knowledge of English vocabulary, idioms, word form; or not enough to evaluate.

#### d. Language Use

It covered the effective use of complex or simple construction.

(4) = effective complex constructions; few errors of agreement, tense, number, word order/function, articles, pronoun, prepositions.

(3) = effective but simple constructions; minor problems in complex constructions; several errors of agreements, tense, number, word order/function, articles pronoun, prepositions but meaning seldom obscured.

(2) = major problems in simple/complex constructions; frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragment, deletion; meaning confused or obscured.

(1) = virtually no mastery of sentence construction rules; dominated by errors; does not communicate, or not enough to evaluate.

#### e. Mechanics

It covered the mastery of spelling, punctuation, and capitalization.

(4) = demonstrates mastery of conventions, few errors of spelling, punctuation, capitalization, paragraphing.

(3) = occasional errors of spelling, punctuation, capitalization, paragraphing but meaning not obscured.

(2) = frequent errors of spelling, punctuation, capitalization, paragraphing; poor handwriting; meaning confused or obscured.

(1) = no mastery of conventions, dominated by errors of spelling, punctuation, capitalization, paragraphing; handwriting illegible; or not enough to evaluate.

### **E. The Analyzing Technique of Research Instrument**

The success of this research was determined by the instrument used, because the data was used to answer the research problem and testing the hypothesis through the instrument. Research instrument was a tool that used by researcher in collecting data in order to get better result, more accurate, more complete and systematic so they could process their work easier (Arikunto, 1998 : 151).

### **F. The Technique of Processing Data**

#### **a. Processing data of students' test result**

Processing the data was conducted on test scores and gain score. The processing data on final test score was to find out the students' improvement in learning writing descriptive text by using tourism brochures, while the processing data on the gain value was to find out the effectiveness (the influence) of using tourism brochures in teaching writing descriptive text. The influence was seen on

the students' mastery or writing ability of descriptive text in both experimental class and control class.

The steps were used to process the data in this research were: scoring, determining the group's achievement index, testing the normality of distribution of the gain frequency, testing the homogeneity of the gain variance, and testing the hypothesis.

### ***1. Scoring***

When the first test and the final test score were collected, the quarrel of first test score and final test score was calculated for having the gain values, based on:

G = gain

T<sub>1</sub> = pre-test score

T<sub>2</sub> = post-test score

I<sub>s</sub> = ideal score

As Arikunto argued that the difference between pre-test and post test score is assumed as the effect of treatment (Suharsimi Arikunto, 1998 : 48).

Then the whole data such as pre-test score, post test score, gain value were tabulated in a table for lighting the calculation and analysis. From each score the writer measured the mean and standard deviation.

### ***2. Determining the group's achievement index***

According to Luhut P. Panggabean (1989:28) statement that students' learning achievement could be seen by interpreting on the group's achievement, in order to know more on students' mastery on the subject matter to be tested was by



finding out on group's achievement index. There were steps to determine the group's achievement index:

a. Calculating the mean of final test score with using formula:

$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$$

b. Determining the ideal maximum score (SMI)

c. Determining the score of group's achievement index (IPK: Index Prestasi Kelompok) with the formula:

$$IPK = \frac{\bar{x}}{SMI} \times 100 \%$$

d. Determining the categories of the score of group's achievement index.

**The Classification of Group's Achievement Index**

IPK Categories	Interprestation
90.00 – 100.00	Expert
75.00 – 89.99	Advanced
55.00 – 74.99	Intermediate
30.00 – 54.99	Low
0.00 – 29.99	Very Low

(Luhut P. Panggabean, 1989 : 29)

### 3. Testing the Normality of Gain

To know more whether or not the population based on the data was normal, then the research with normal test distribution was carried out. The test normality that carried out was chi-square test normality. The steps that were carried out:

a. Arranging the data of gain score from frequency distribution table, the formation based on interval class. For determining the number of interval class and class length, every interval used the Surges roles, they were:

- Determining the number of class (K)

$$K = 1 + 3.3 \log N.$$

- Determining the length of class (P)

$$P = \frac{R}{K} = \frac{\text{range}}{\text{numberofclass}}$$

b. Determining the top limit and bottom limit in every interval class. The top limit obtained from the tip of top class plus 0.5, while the bottom limit obtained from the tip of bottom class minus 0.5.

c. Determining the mean of scores for each class with using the formula:

$$\bar{X} = \frac{\sum X_i}{N}$$

$\bar{X}$  is mean scores,  $X_i$  is score from each student and N is number of students.

d. Calculating the standard deviation with the form:

$$S_x = \sqrt{\frac{\sum (X_i - \bar{X})^2}{N-1}}$$

e. Calculating z score of real limit form every interval class with the z form:

$$z = \frac{bk - \bar{X}}{S}$$

f. Calculating broad of the area of each interval class as follow:

$$I = |I_1 - I_2|$$

$I$  is the broad of interval class ,  $I_1$  is the broad of top limit of interval class,

$I_2$  is the limit of bottom area of interval class.

g. Determining the frequency of expectation:

$$E_i = N \times l.$$

h. Calculating the value of frequency by using Chi-Square form:

$$\chi^2_{obs} = \sum \frac{(O_i - E_i)^2}{E_i}$$

(Sudjana,1996 : 273)

$O_i$  is observation frequency,  $E_i$  is expectation frequency and  $\chi^2_{obs}$  is the value of chi-square from the number of calculation.

i. Consulting the value of  $\chi^2$  from the result of calculation with using Ch-Square table in certain degree in amount of the number of interval class minus three (df = k-3). When the value of  $\chi^2 < \chi^2_{table}$  obtained, in the real level of certain  $\alpha$ , then it could be stated that the distribution of the sample was normal.

#### **4. Testing the homogeneity of Gain Variance**

The testing of homogeneity for the level of  $\alpha$  significant was obtained for investigating whether or not the scores of research were homogeneous variance.

The steps were:

a. Determining the variance of gain score data.

b. Determining the degree of freedom (df) with the form:

$$df_1 = n_1 - 1 \text{ and } df_2 = n_2 - 1,$$

$$df_1 = 24 - 1 = 23 \text{ and } df_2 = 24 - 1 = 23.$$

c. Calculating F value (the degree or level of homogeneity)

$$F_{obs} = \frac{s_b^2}{s_k^2}$$

(Luhut Panggabean, 2000 : 151)

$F_{obs}$  is homogeneous value that looked for,  $s_b^2$  is variance in which the value is bigger and  $s_k^2$  is variance in which the value is smaller.

d. Determining the value of table homogeneity testing through interpolation.

When  $F_{obs} < F_{crit}$  then the distribution data was homogeneous.

### 5. Hypothesis Testing

When the normality testing and homogeneity testing were carried out, then writer define the kind of hypothesis testing for testing the hypothesis that formed. When the assumption of the normality was completed, then the hypothesis testing that will be used is t-test with small sample. Meanwhile, when one of or both statistic assumption (normality testing and homogeneous testing) were completed, the hypothesis testing will use Wilcoxon testing.

For testing the hypothesis with using the t-test with the big sample ( $n > 30$ ) in the significance level 0.5 with the test of one tail, the form that will be used is:

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

(Luhut Panggabean, 1996 : 100)

$M_1$  is the mean of gain score of experimental group,  $M_2$  is the mean of gain score of control group,  $N_1$  equal  $N_2$  is the number of students,  $\sigma_1^2$  is the variance of experimental group score, and  $\sigma_2^2$  is the variance of control group score.

The result consulted on the t distribution tail for testing one tail result.

The way to consult  $t_{obs}$  with  $t_{crit}$  was:

- a. Determining the degree of freedom (df) =  $N_1 + N_2 - 2$ .
- b. Looking at the distribution table for testing one tail in the certain significant level, for example in the level 0.05 or in reliability interval 95%, so the t value will be obtained form the t distribution table with the equality  $t_{table} = t_{(1-\alpha)(df)}$ . When in degree of freedom were not founded the result then the interpolation process must be carried out.
- c. The criterion of test result

The hypothesis proposed would be accepted when  $t_{obs} > t_{crit}$

For testing the hypothesis with Wilcoxon testing, the steps that must be taken were:

- a. Making the rank list with arranging the second score of sample. The number of rank starting from the difference of the smallest of both sample without paying attention on the sign.
- b. Calculating the value of W (wilcoxon)

The value of W is the smallest number from the number of positive rank or number of negative rank. When the number of positive rank equal with the number of negative rank, one of the W values would be taken.

- c. Determining the W value from the list:

When the number of students more than 20, the W value would be calculated with the form:

$$W = \frac{n(n+1)}{4} - X \sqrt{\frac{n(n+1)(2n+1)}{24}}$$

For significance level 0.01, the X value = 2.578 otherwise for significance level 0.05, the X value = 1.96

- d. Determining the criterion of hypothesis testing.

The hypothesis proposed would be accepted when the value of  $W_{obs} < W_{crit}$ .

