CHAPTER III

RESEARCH METHODOLOGY

This chapter includes the methodology of the research, which discusses the population and samples, instruments, steps and procedure of the research, research design and description of the data analysis.

3.1 Research Design

The researcher used experimental study, which is defined as a study that inspects the language behavior of groups under controlled condition (Brown, 1988). It means that some treatments were carried out to gain result of the research. The research design chosen was two-group pretest posttest design. In this design, there are two groups – an experimental group, which received the special treatment, and a control group, which did not. Before the treatment, a pretest was administered to both groups to detain the initial differences between the groups. After the treatment is given to the experimental group, a posttest was administered to both groups (Hatch and Farhady, 1982).

The research is stated as follows:

$$G1 \quad T1 \quad X \quad T2$$
$$\overline{}$$
$$G2 \quad T1 \quad \quad T2$$

Where :

G1   = experimental group

G2   = control group

T1   = pretest

T2   = posttest

X   = treatment

3.1.1 Variables

There were two variables involved in this research; they are independent variable and dependent variable. The independent variable is detailed reading strategy and the dependent variable is students' writing achievement.

3.1.2. Research Procedure

Before conducting the research, the writer prepared the materials used during the treatment period. The instruments used for testing students' writing achievement before and after the treatment were also prepared.

3.1.2.1 Materials and Instruments

3.1.2.1.1 Materials

During the treatment, the students were given a number of texts with a certain topic. The genre of the texts was varied from description to narrative but the texts are under the same umbrella in terms of the topic. Most of the materials for this treatment were taken from Interaction 1 and 2 A Reading Skill Book by Elaine Kirn Hartmann, others were taken from the internet.

3.1.2.1.2 Instruments

The instruments were used to gain data regarding the students' writing achievement before and after the treatment. The instruments are as follow:

- Pretest. This test was given to both experimental and control group before the treatment. The test consisted of instruction to write a narrative text with The United States of America as the main setting. The topic of the text was "Unforgettable Experience."

- Posttest. This test was given to both experimental and control group after the treatment. The test consisted of instruction to write a narrative text with The United States of America as the main setting. The theme of the text was "Scary Experience."

- Questionnaire was given only to experimental group at the end of the treatment period and after posttest was conducted.

3.1.2.2 Administering Try out Test.

The Try out test was conducted on Monday, 4th August 2008 to XII IPA 2 SMAN 20 Bandung. The test was in the form of writing where the students' were asked to construct a narrative text with the United States as the main setting and the theme was "Unforgettable Experience."

3.1.2.3 Administering Pretest, Posttest and Questionnaire

The research was conducted with two meetings each week. These are the steps in conducting this research:

1. At the beginning and the end of the course, all students from both control and experimental groups had a pretest and posttest on writing. The pretest was given to both groups on August 7. The posttest was given on September 17 2008.

2. During the course, the students belong to experimental group get some treatments. The treatment was conducted by giving them texts with certain topic and discussed the texts profoundly. The students scrutinized the texts in terms of its language style, diction, meanings implied, etc. This treatment was conducted on August 8 to September 11 2008.

3. Near the end of the course, a questionnaire investigating students attitude toward the treatment and other factors related was given to the experimental group.

3.1.2.4 Giving Treatments

The treatment was given only to experimental group. The treatment was conducted by giving the students a number of texts with different genres but with similar topic, which is United States of America. In each meeting, the students read one or two texts and discussed what the texts were all about.

In general, the research was conducted by the following schedule:

Table 3.1

General Schedule of the Research

No	Date	Material
1	August 7, 2008	Pretest
2	August 8, 2008	Text 1 : "Methods of Education: East versus West"
3	August 14, 2008	Text2 : "How Can I Get to the Post Office?"
4	August 15, 2008	Text3 : "My American Neighborhood"
5	August 21, 2008	Text4 : "Social Life in the United States: Two Views"
6	August 22, 2008	Text4 : "Social Custom: A Dinner Party"

7	August 28, 2008	Text6 : "The Urban Crisis" Text7 :"Workaholism"
8	August 29, 2008	Text8 :"The Mightiest of All"
9	September 4, 2008	Text9 : "The Night's Journey"
10	September 5, 2008	Text10 : "Life Is Beautiful"
11	September 11, 2008	Text11 : "A Hole in Your Stocking" Text12 : "The Smartest Animal"
12	September 12, 2008	Posttest

3.1.2.5 Conducting Document Study

The result of experimental group's pretest and posttest were analyzed by three different raters to investigate the improvement in the students' writing before and after the treatment. The analysis was also to support the data resulted from questionnaire. The analysis involved five writing aspects adapted from Jacobs at. al.'s (1981) scoring profile. The aspects are content, organization, vocabulary, grammar and mechanics.

3.2 Participants

The participants involved in this research were the students of one of the senior high schools in Bandung. The researcher chose it is because of the accessibility she has to reach the authorities since she is an alumnus of this school. The researcher decided to select the 3rd year students based on the consideration that students on this level had enough experience with reading and writing in English.

Class 12 IPS 1 was chosen as the control group, and class 12 IPA 1 as the experimental group. The control group consisted of 40 students and the experimental group consisted of 40 students. These classes were determined randomly as experimental and the control group with the consideration from the English teacher. To anticipate the absence of some students and other obstacles during the research, the researcher only took 35 students from each class as the sample. Thus, the definite number of the participants was 70 students.

3.3 Data Collection

As mentioned above, the instruments used by the researcher to collect the data for this research are in the form of writing test, questionnaire and document study.

3.2.1 Pretest and Posttest

There were two tests conducted in this research – pretest and posttest. Pretest was conducted to get the initial performance of each group and to identify the initial differences between control and experimental group. Posttest was conducted to get the result of the students' writing achievement after treatments were given and to identify the differences between both groups.

Since the best way to test people's writing ability is to make them write(Hughes, 1989), both pretest and posttest were in form of writing test. The tests required the students to write a narrative text based on the topic provided.

3.3.2 Questionnaire

The questionnaire in this research was given to the experimental group. The aim of giving this questionnaire is to see the prospect of using detailed reading strategy in improving students' writing achievement. The data resulted from the questionnaire provided information about how the students behave toward the treatment, and factors related to their background in reading and writing.

3.3.3 Document study

The documents meant were the students' writing that resulted from pretest and posttest. The documents were looked closely in terms of five aspects (content, organization, vocabulary, grammar and mechanics). The result provided the information about how the students' writing developed.

3.4 Data Analysis

3.4.1 Data Analysis on Try-Out Test

3.4.1.1 Validity

Validity refers to the extent to which the results of the procedure serve the uses for which they were intended (Hatch and Farhady, 1982). It means that a test can be judged valid if it measures what becomes the aim of the test itself. Therefore, it becomes necessary to try out the test and then compute the result with certain validity formula.

In analyzing the validity test, the correlation product moment formula was represented by Pearson was applied. The following is the detail of the formula:

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

Note:

r_{xy} = correlation coefficient between X and Y variables

X   = the item tested

Y   = total score of the sample

N   = the number of item tested

The number resulted from the calculation was then interpreted based on the criteria for the test validity formulated by Arikunto (2007) as follow:

0.800 – 1.00   = Very high

0.600 – 0.800   = High

0.400 – 0.600   = Moderate

0.2 – 0.400   = Low

0.00 – 0.200   = Very low

The result of the computation showed that the test was valid because the result was 0.602 which is between 0.600 – 0.800. It can be interpreted that the level of validity used in this research is high. (See appendix 2)

3.4.1.2 Reliability

Reliability, according to Hatch and Farhady, is the extent to which a test produces consistent result when administered under similar conditions (Hatch and Farhady, 1982).

Since the tests conducted in this research were in form of writing test, the reliability of the instruments were analyzed by using one of internal consistency methods, which is Cronbach Alpha formula, which are:

$$r_{ii} = \frac{k}{k-1}\left[1 - \frac{\sum \sigma_t^2}{\sigma_t^2}\right]$$

Note:

Rii   = instrument reliability

k   = number of aspects evaluated

$\sum \sigma_t^2$ = the numbers of scores variance

σ_t^2 = total variance

From the computation, it was acquired that the reliability of the material was 0.93. According to Hatch and Farhady (1982), the reliability of a test will be between 0 - 1, as a result it can be interpreted that the test is reliable. (See appendix 2)

3.4.2 Pre-Test and Post-Test Analysis

The data from pretest and posttest scores were used to categorize the students into three categories. They are high achievers, intermediate achievers, and low achievers. This categorization was used to find out the variation on the effect of detailed reading strategy in improving writing achievement in each category.

The categorizing of students' writing achievement can be described as follows:

Table 3. 2

Category of Students' Writing Scores

No	Interval	Category
1	$X \geq \overline{X}_{ideal} + 0{,}5 S_{ideal}$	High Achiever
2	$\overline{X}_{ideal} - 0{,}5 S_{ideal} \leq X < \overline{X}_{ideal} + 0{,}5 S_{ideal}$	Intermediate Achiever
3	$X < \overline{X}_{ideal} - 0{,}5 S_{ideal}$	Low Achiever

Note:

X_{ideal} = maximum score of students

$\overline{X}_{ideal} = \dfrac{1}{2} X_{ideal}$

$S_{ideal} = \dfrac{1}{3} \overline{X}_{ideal}$

(Solehudin and Cece Rahmat 1998; in Yulianti 2006, p. 54)

In this study, the data gained were as follow:

$X_{ideal} = 100$

$\overline{X}_{ideal} = 50$

$S_{ideal} = 33.33$

3.4.3 Testing The Hypothesis

3.4.3.1 Normality Distribution Test

In analyzing normality distribution, Kolmogorov-Smirnov test in SPSS 12 windows was used. The steps in analyzing the normality distribution were as follows:

- Stating the hypothesis and setting the alpha level at 0.05 (two-tailed).

- Analyzing the normality distribution using Kolmogorov-Smirnov test in SPSS 12 windows.

- Comparing the Asymp sig (probability) with the level of significance for testing the hypothesis. If the Asymp sig is more than the level of significance the null Hypothesis (Ho) is accepted, the scores are normally distributed.

3.4.3.2 Variance Homogeneity Test

The next step after knowing that the pretest and posttest were normally distributed was analyzing its homogeneity. To examine whether the data are homogenous or not, test of homogeneity of variance using Levene's test for equality of variance in SPSS 12 windows was used. The steps were as follows:

- Stating the hypothesis and setting the alpha level at 0.05 (two-tailed).

- Analyzing the homogeneity of variance using Levene's test for equality of variance in SPSS 12 windows.

- Comparing the Asymp sig (probability) with the level of significance for testing the hypothesis. If the Asymp sig is more than the level of significance the null hypothesis (Ho) is accepted, the scores are homogenous.

3.4.3.3 t-Test Computation

Independent t-test formula was used in this study. The test would be calculated by the assistance of SPSS 12. The steps of computing t-test were as follows:

- Stating the Null hypothesis (Ho: X1 = X2) and the Alternative hypothesis (Ha: X1 ≠ X2).

- Setting the alpha level at 0.05

- Finding the t value with independent t-test formula.

- Comparing t-obtained and t-crit. If t_{obt} is lower than t_{crit}, the result is not statistically significant at the 0.05 level, Ho is accepted; whereas if t_{obt} is higher than t_{crit} the result is statistically significant, then Ho is rejected.

3.4.3.4 Calculating Index Gain

In order to investigate the improvement of the experimental and control group before and after the treatment, index gain was calculated. Additionally, to find out to what extent detailed reading strategy improved the experimental group writing achievement, index gain for each writing aspect was also calculated. The formula used to calculate index gain is as follows:

$$g = \frac{\text{post test score } - \text{ pre test score}}{\text{maximum score } - \text{ pre test score}}$$

(Hake in Meltzer, 2003)

Afterward, the result of index gain was interpreted using the following criteria:

Index gain < 0,3 = low

0,3 < Index gain < 0,7 = medium

Index gain > 0,7 = high

(Hake, 1999)

3.4.5 Questionnaire Analysis

The questionnaire, which was distributed to the students belong to the experimental group at the end of the treatment, was analyzed to get the information about how the students behave toward the treatment, and factors related to their background in reading and writing. The questions in this questionnaire were in the form of open-ended questions. The data resulted from the questionnaire were analyzes by grouping and percentage method.

3.4.6 Document Analysis

Analyzing or taking a closer look into the documents was conducted to get detail information of how the students' writing developed. The analysis involved five aspects, which are content, organization, vocabulary, grammar and mechanics.