CHAPTER III

METHODOLOGY

This chapter discussed the method of this research. Further, this chapter consisted of method of research, population and sample, research procedures, research instruments, data collection, and data analysis.

3.1 Method of Research

In order to get empirical data, quantitative method was employed. Likewise, since the purpose of the research is to find out whether the mean of experimental class is higher than the mean of control class, the method was an experiment method. Quasi experimental design was used in this study to investigate the effectiveness of using series of pictures in teaching narrative writing.

According to Hatch and Farhady (1982) quasi experimental designs are practical compromises between true experimentation and the nature of human language behavior which we wish to investigate. It was decided due to the reason that there is limited time, and the population did not consist of individual but group of individual. Thus, the researcher was not required to assign students randomly from each class available. The pretest-posttest design which is the subset of quasi experimental design was conducted. The design is represented below:

$$\begin{array}{l} G_1 \quad T_1 \quad X \quad T_2 \\ \hline G_2 \quad T_1 \quad \quad T_2 \end{array}$$

Where:	G1	: experimental group
	G2	: control group
	T1	: pre-test
	T2	: posttest
	X	: treatment

Moreover, there were two variables which would be investigated, namely independent variable and dependent variable. In this study, the independent variable was series of pictures used to teach narrative writing. Since it is the major variable, it is selected, manipulated, and measured by the researcher. On the other hand, the dependent variable was students' narrative writing score as this is the variable which is observed and measured to determine the effect of the independent variable (Hatch and Farhady, 1982: 15).

3.2 Population and Sample

3.2.1 Population

Population is a set of all elements possessing one or more attributes of interest (see Arikunto, 2002: 108). In this definition, the population of this study was all the second grade of SMAN 1 Cilegon students. The second grade of SMAN 1 Cilegon consists of nine classes, and divided into two majors, science class and social class. Each class consists of 44 students, so the total population was about 400.

The choice of population was based on the consideration that the second grade students had learned narrative text in their first grade, and it was being

taught again in their second grade. Therefore, it is expected that they will have basic knowledge about narrative text, and they will get an easier way in learning writing narrative text by using series of pictures.

3.2.2 Sample

Sample is a subset of a population. It should be representing the population. The researcher used random sampling to determine the sample. This technique was employed to gain two classes that represent the population. After conducting the technique, there were two classes selected as sample that were XI IPA 6 and XI IPA 5. These classes were determined randomly as experimental group and control group with a consideration from the English teacher. Class XI IPA 5 was as the experimental group and class XI IPA 6 was as the control group. Each class consists of 44 students. To anticipate the absence of some students during the research, the researcher only took 40 students from each class as the sample. Thus, the fix number of the sample was 80 students.

3.3 Research Procedure

In this study, series of pictures were used as treatment for experimental group. Due to the limited time, the researcher conducted the treatment in five meetings. Before doing the research, the researcher followed the procedures of the research described below:

- Preparing series of pictures for teaching and learning process during the treatment.

- Organizing teaching procedures for treatment by using four stages of learning applied in genre based approach. The learning activities used in the teaching procedures was based on learning activities for genre based approach proposed by Emilia (2007) (see in chapter 2).
- Organizing the research instrument for pretest and post test, in this case writing test.
- Trying out the research instrument for pretest and post test.

  The Try out test was conducted on Tuesday, 29th April 2008 to XI IPA 1. The test was in the form of writing where students were asked to construct the narrative text based on the series of pictures given. The series of pictures used in this test taken from *Relay Students Book.*

Furthermore, in general the research was conducted by following the research schedule below:

Table 3.1

General Schedule of the Study

No	Experimental Group		Control Group	
	Date	**Material**	**Date**	**Material**
1	5th May 2008	Pretest	5th May 2008	Pretest
2	6th May 2008	Topic: Memorable Experience 1	6th May 2008	Topic: Memorable Experience 1
3	19th May 2008	Topic: Memorable Experience 1	19th May 2008	Topic: Memorable Experience 1
4	26th May 2008	Topic: Memorable Experience 2	26th May 2008	Topic: Memorable Experience 2
5	27th May 2008	Topic: Memorable Experience 2	27th May 2008	Topic: Memorable Experience 2
6	2nd June 2008	Review of the whole meetings	2nd June 2008	Review of the whole meetings
7	3rd June 2008	Posttest	3rd June 2008	Posttest

3.4 Research Instruments

To gain the data, some instruments are needed to be involved.

3.4.1 Tests

Tests, which consist of pretest and posttest, were given in the form of a written test. Pretest was administered to find out that the two observed group, which were experimental and control group, have the same level of writing skill. Whereas, posttest was carried out to examine that there were significant difference of students writing in the two group skill after one of the groups were given the

treatment. Moreover, posttest was administered to find out whether the use of series of pictures in teaching narrative writing is effective or not.

Written tests were carried out to measure students' writing skill and its improvement after treatments. Students were required to write a narrative text using series of pictures with personal experience as its topic. It was carried out at the beginning of the lesson as pretest, and conducted at the end of the research as posttest. Hence, their writing were analyzed by using the scoring sheet.

3.4.2 Questionnaire

Since this study attempts to find out the advantages and the disadvantages of using series of pictures in teaching narrative writing, questionnaire is carried out in the last program to observe students' response about the method. The closed-opened questionnaire was used in this study. It was submitted to students who were in the experimental groups.

The questions of questionnaire were based on the teaching process using series of pictures that was conducted in class. It observed students' understanding of narrative text structure using series of pictures, students' response to the use of series of pictures in their writing, and students' response to the use of series of pictures as media in writing class.

3.4.3 Interview

Interview was used to gain deeper information which was not available in questionnaire. In addition, interview was not only collected from students who were in the experimental groups, but also from teacher to find out teacher's

opinions and perceptions about the model of teaching suggested by the researcher. The questions of the interview were based on the following aspects:

- Students' experience in learning narrative writing through series of pictures
- Teacher's experience in teaching narrative writing through series of pictures.
- The difficulties faced by students in their learning using series of pictures.
- The difficulties faced by teacher in their teaching using series of pictures.
- Students' opinion about series of pictures used in their leaning.
- Teacher's opinion about series of pictures used in her teaching.
- Students' feeling toward the learning writing using series of pictures.
- Teacher's feeling toward the teaching writing using series of pictures.

3.4 Data Collection

In order to collect the data, there were some steps that were taken as follow.

3.5.1 Testing Validity and Reliability of the Test

A significant result of the study depends on whether or not the data is accurate, while, an accurate data depends on whether or not the instrument is accurate. Therefore, to get an accurate data the instruments must be tried out beforehand in terms of validity and reliability. Try out test was in the form of written test, which required students to write a narrative text based on the pictures given.

3.5.1.1 Validity

One of the important things to consider when researcher prepares or selects an instrument to use is validity. (Freenkel, 1993: 139). Hatch and Farhady (1982: 251) states that:

> "Validity refers to the extent to which the results of the procedure serve the uses for which they were intended. Validity refers to the results of the test not to the test itself. Also validity is a matter of degree. It is not an all-or-nothing trait. We talk about high validity, moderate validity, and low validity rather than absolute validity."

In other words, a test can be considered valid if it measures what becomes an objective of the test to know whether or not the test is valid; it is necessary to try out the test and then compute the result with certain formula of validity.

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

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

Note:

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

X = the item tested

Y = total scores of the sample

N = the number of tested

The result of the calculation was then interpreted based on the criteria for the test validity formulated by Arikunto (2002) as follow:

0.800 – 1.00 : Very high

0.600 – 0.800 : High

0.400 – 0.600 : Moderate

0.200 – 0.400 : Low

0.00 – 0.200 : Very low

From the computation, it was found that the test was valid because the result was 0.70 which is between 0.600 – 0.800. It means that the instrument used in this research had high validity (see appendix 2).

3.5.1.2 Reliability

Another important thing in preparing the instruments is reliability that is defined as to what extent a test can be reliable. Consistency of results is the basic concept of reliability of a test. Therefore, any instruments should be calculated its reliability. Sine the instrument score of this research was not between 1 and 0 or in the form of essay, the instruments were analyzed by using one of internal consistency methods, namely Cornbach Alpha formula, which are:

$$r_{11} = \left[\frac{k}{k-1}\right]\left[1-\frac{\sum\sigma_i^2}{\sigma_t^2}\right]$$

Note:

r_{11} = instrument reliability

k = number of questions items

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

σ_t^2 = total variance

The reliability of the material was 0.95. According to Hatch and Farhady (1982) the reliability of a test will be between 0-1, so the result is reliable (see appendix 2).

3.5.1 Conducting the Pretest

Pretest was given to both of groups, experiment and control, its validity and reliability. It was administered to find out the initial equivalent between the two groups. Pretest was conducted on May, 05, 2008 to class XI IPA 5 and XI IPA 6.

3.5.2 Giving the Treatment

The treatment was conducted to the experimental group, XI IPA 5, in five meetings due to the limited time. Series of pictures were given as treatment in the process of teaching narrative writing. Finally, they have to do posttest at the end of the treatment with the same question given in the pretest.

3.5.3 Conducting the Posttest

Similar to pretest, posttest was given to both groups, XI IPA 5 as the experimental group and XI IPA 6 as the control group. It was carried out after whole treatments had been conducted on June, 03, 2008. The posttest was conducted to measure the influence of the treatment, whether there was significant difference in students' narrative writing scores or not. The written test in the posttest was similar to the written test in the pretest.

3.5.4 Administering Questionnaire and Interview.

Questionnaire and interview were distributed to the experimental group find out their response toward the use of series of pictures in their learning writing

narrative text after the pretest and posttest was held to. In addition, the interview was given to both the teacher and the students to get deeper and more information about the study.

3.5.5 Counting the Data using t-test

After the data was collected, it was calculated using t-test formula with the assistance of SPSS 15 system.

3.6 Data Analysis

3.6.1 Data Analysis of Pretest and Posttest

The collected data of pretest and posttest, then, were analyzed. Since the data of pretest and posttest were in the form of written test document, it would be analyzed by using scoring sheet. Since the purpose of this study was to find out the effectiveness of using series of pictures in teaching narrative writing, the criteria of scoring based on narrative structure should be included in the scoring sheet. Thus, the aspects of writing formulated by Brown (1994: 356-358) were adapted to be a scoring guide in examining students' narrative writing. The adapted scoring sheet consisted of five aspects; those were content, generic structure, language features, vocabulary, and mechanic.

Lastly, the data would be analyzed by using t-test formula. Since it compare the means of two groups, the t-test are used to determine whether the means of two groups are differ to a statically significant degree (Kranzel and Moursund, 1999). More narrowly, the pretest and posttest will be statistically analyzed by the Independent Group t test because the two groups, experimental

and control group, are not paired in any way or in other words they are independent of each other. Normality and homogeneity test were done before the data were calculated by using t-test formula.

3.6.1.1 Normality Distribution Test

Kolmogorov-Smirnov test in SPSS 15 windows was used to analyze the normality distribution. The steps of 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 15 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.

3.6.1.2 Variance Homogeneity Test

After knowing that the pretest and posttest were normally distributed, the next step 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 15 windows was used. The steps of analyzing the homogeneity were as follow:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed).
2. Analyzing the homogeneity of variance using Levene's test for equality of variance in SPSS 15 windows.

3. 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.

3.6.1.3 t-test Computation

Independent t-test formula was used in this study. The t-test would be calculated by the assistance of SPSS 15. The steps of computing t-test described below:

1. Stating the Null hypothesis (Ho: $X_1 = X_2$) and the Alternative hypothesis (Ha: $X_1 \neq X_2$)
2. Setting the alpha level at 0.05
3. Finding the t value with independent t-test formula.

The formula for a t test between two different groups of scores is as follows:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\left[\frac{\sum X_1^2 - \frac{(\sum X_1)^2}{N_1} + \sum X_2^2 - \frac{(\sum X_2)^2}{N_2}}{N_1 + N_2 - 2}\right]\left[\frac{1}{N_1} - \frac{1}{N_2}\right]}}$$

Note:

$\overline{X}_1$ = the mean of the score of the experimental group

$\overline{X}_2$ = the mean of the score of the control group

$\sum X_1^2$ = the sum of the squares of the experimental group

$\sum X_2^2$ = the sum of the squares of the control group

$\left(\sum X_1\right)^2$ = the square of the sum of the squares of the experimental group

$\left(\sum X_2\right)^2$ = the square of the sum of the squares of the control group

N_1 = the total number of scores in the experimental group

N_2 = the total number of scores in the control group

4. 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; While, If t_{obt} is higher than t_{crit} the result is statistically significant, then Ho is rejected.

3.6.1.4 Questionnaire and Interview Data Analysis

The formula of percentage was used to analyze the questions. The data will be interpreted based on the frequency of the students' answer. The formula was described as follow:

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

Furthermore, the data that are collected interview were analyzed by considering each item that is informed to support the statement from the questionnaire.