CHAPTER 3
RESEARCH METHODOLOGY

This chapter describes the methodology applied in the study. The explanations are as follow: research questions, research design, hypothesis, data collection, procedures of the study and data analysis of the study.

3.1 Research Question

This study mainly attempt to find out the effectiveness of series of pictures in teaching recount text in senior high school. Therefore, this research proposed the only research question as follow:

Is the use of series of pictures in teaching recount text effective to improve students' writing ability?

3.2 Research Design

The design of the study was quasi-experimental design, specifically the non-equivalent control group design. There were two groups involved; experimental group and control group. The experimental group received series of pictures in teaching writing as its treatment; while the control group received direct instruction. Furthermore, pre-test and post-test were given to the experimental and control group. The experimental design is described as follow:

Group	Pre-test	Treatment	Post-test
A	01	X	02
B	03		04

A01 : pre-test for experimental group

A02 : post-test for experimental group

AX : treatment for experimental group

B03 : pre-test for control group

B04 : post-test for control group

This study has some parts which are called variables. Moreover, there are two variables, namely independent variable and dependent variable. Sugiyono (2011) states that independent variable is a variable that influences the dependent variable. On the other hand, dependent variable is a variable which is influenced by the independent variable. In this study, the use of series of pictures is the independent variable and students' writing ability is the dependent variable.

3.3. Hypothesis

Regarding Coolidge (2000) hypothesis are stated as follows:

Ho :μ1 = μ2 = there is no significant difference between the two population's means

Ha :μ1 ≠μ2 = there is significant difference between the two population's means.

Specifically, this study was aimed at accepting the alternative hypothesis (Ha) namely there is a significant difference in mean adjustment level between those who receive treatment by using series of pictures and those who are not.

The hypothesis is stated as follows:

Ha :μ1 ≠μ2 = there is significant difference between the two population's means.

(Coolidge, 2000)

3.4 Data Collection

3.4.1 Population and Sample

This study was conducted in a senior high school in Bandung. According to Arikunto (2002) population is a whole research project. The population in this study were students of 10th grade of Class IBB (IlmuBahasadanBudaya) and MIA 1 (Matematikadan IPA) which were chosen because recount text material was given in the 10th grade.

Moreover, Coolidge (2000) states that sample is a smaller group of scores selected from the population scores. The samples of the research were two classes. The first class would be treated as an experimental group and the other would be treated as a control group. The selection of the sample was not chosen randomly, since the population technique was applied in this study.

3.4.2 Research Instruments

According to Sugiyono (2011), instrument is a tool that is used to measure the data. In addition, Sugiyono (2011) states that in the quantitative study, the quality of the instrument can be determined from the validity and reliability of the instrument, whereas the quality of gathering the data in line with the appropriate technique used. In quantitative research, instrument can be a test, interview, observation and questionnaire (Arikunto, 2012).

In this study, there were three instruments that used in collecting the data; pre-test, post-test and questionnaire. First, pre-test was administered to identify the students' ability in both groups; experimental group and control group before giving the treatment. Second, post-test was administered to know whether the series of pictures improve the students' ability in writing recount text or not. Post-test was held in the end of the research and after 4 times treatments in experimental group. The post-test was

also administered to the both groups. The last, questionnaire was delivered to class IBB only as the experimental group to know students' responses toward the use of series of pictures during the teaching and learning process. The questionnaire was delivered after gaining the data from pre-test and post-test.

3.5 Research Procedures

3.5.1 Administering the Pilot Test

The pilot test was conducted to measure the validity and reliability of the instrument and to know whether or not the instruments are appropriate for the experimental and control group. In this study, the pilot test was held to the students in Class IBB (IlmuBahasadanBudaya).

The test was in written form which included five topics complemented by its series of pictures. The students were asked to write a recount text based on the topic chosen by them. In addition, the scoring rubric proposed by Brown (2004) which consists of four criteria was used. The criteria which are being assessed in this test are: content, vocabulary, generic structures and language features.

3.5.2 Administering Pre-test

As the first step of the study, pre-test was given in the beginning before the treatment. It was performed to both groups; experimental and control group. This activity was done to measure the students' ability in writing recount text. Besides that, it was also done to investigate whether the students from both groups were equal in this skill and had similar ability before receiving the treatment.

3.5.3 Conducting Treatment

The treatment was employed four times to the experimental group. The experimental group received treatment once a week. This is because the school policy only gave the researcher once a week to give the treatment to class IBB, so that the researcher might have to give the treatment very fast and effectively. This group was taught writing recount text by using series of pictures as the media during the treatment.

On the other hand, the control group was taught by using direct method. There were four procedures during the teaching and learning activities in experimental group. First, the teacher asked students to make a group of four and then distributed an example of recount text complemented by its series of pictures to each group. Second, the teacher gave a general view of recount text, such as the definition of recount text, the purpose and the generic structure. Third, the students were asked to discuss about the pictures which were given by the teacher. The last, the students were asked to write another recount text based on another series of pictures given by the teacher.

Treatments were applied in the experimental group through series of pictures. The topics were including a happy birthday, leisure time, vacation, horrible experience, my little brother and flight for the first time. Treatment schedule are shown as:

Table 3.1 Time Schedule of Treatment

No.	Experimental Group		Control Group	
	Date	Material	Date	Material
1.	February 18th, 2014	Pre-test	February 22nd, 2014	Pre-test
2.	February 25th, 2014	Treatment 1: Introduction to Recount Text and Series of Pictures	March 1st, 2014	Treatment 1: Introduction to Recount Text
3.	March 4th, 2014	Treatment 2: Social Function of Recount Text	March 8th, 2014	Treatment 2: Social Function of Recount Text
4.	March 11th, 2014	Treatment 3: Generic Structures	March 15th, 2014	Treatment 3: Generic Structures

		of Recount Text		of Recount Text
5.	March 18th, 2014	Treatment 4: Language Features of Recount Text	March 22nd, 2014	Treatment 4: Language Features of Recount Text
6.	March 25th, 2014	Post-test & Administering Questionnaire	March 29th, 2014	Post-test

3.5.4 Administering Post-test

The post-test were conducted when the whole treatments were completed. This activity was aimed at finding the differences between students' score of both groups after the treatment. Furthermore, the form of post-test was almost similar to the pre-test.

3.5.5 Administering Questionnaire

Questionnaire was employed after conducting pre-test and post-test. It was given to the experimental group to investigate their responses toward the use of series of pictures. The close-ended questionnaire was used in this research.

In arranging the close-ended questionnaire, the writer used *Likert Scale*and the students were asked to choose one of the options. This scale was used to determine people attitude, perception, and opinion. The options have the following scale:

Table 3.2 Scores of Questionnaire Response

Category of Response	Strongly Agree	Agree	Disagree	Strongly Disagree
	(4)	(3)	(2)	(1)

This form of questionnaire consists of 12 statements with the framework as follow:

Table 3.3 The Framework of Questionnaire for the Students

No	Aspects	Basic Theory	Item Number	Total
1.	Response to the implementation of using series of pictures	Sudjana and Rivai (2009), there are several benefits of media; those are; first, media make students easier to catch the material given by the teacher. Media can be used by the teacher to make teaching materials easier and clearer. Thus, the students can receive the materials delivered by the teacher easily. Second, various and interesting media make students enjoy and fun in learning process. Third, by using media, both students and teacher can do more activity in teaching learning process.	1, 2, 3	3
2.	Response to the importance of learning recount text using series of pictures	Byrne (1995) also argues that the use of visual media in writing is potential to be used as media for writing activities as source of idea. Sudjana and Rivai (2009) also state that teaching learning process will be more effective if the objects or events in the teaching materials are visualized realistically to be similar with the real condition.	4, 5, 6, 7, 8, 9	6
3.	Response to the lesson content given in learning recount text using series of pictures	Wright (1994) states that specifically pictures contribute to some points, such as interest, motivation, a sense of the context of the language, and a specific reference point of stimulus. Hornby (1973, as cited in Maulida 2008) proposes that colorful and funny pictures presented will come up students' interest and stimulate them to talk and to write upon a definite subject presented by pictures.	10	1
4.	Response to the role of the teacher in teaching and learning recount text using series of pictures	Sudjana and Rivai (2009) state that one of the techniques which are considered effective as supporting means to achieve the objective in language learning process is the use of visual media as teaching media. Wright (1994), there are three roles of pictures in writing. First, pictures can motivate the students and make them pay attention and want to take part in learning process. Second, pictures contribute to the context in which	11, 12	2

		the language is being used. In other word, they bring the world into the classroom. Third, pictures can stimulate and provide information to be referred to in conversation, discussion and story telling.		
Total				12

3.6 Data Analysis

3.6.1 Scoring Technique

To acquire valid scores that define students' writing ability, there were scores and criteria which were settled to give brief explanation for every score given in assessing students' writing ability. Thus, the research adopts the rubric proposed by Brown (2004). The criteria are involving content, vocabulary, generic structure and language features.

Moreover, the details of the writing scale are sown in the following table:

Table 3.4 Scoring Aspects

Aspect	Score	Criteria
Content	1.	The content is not relevant with the topic at all.
	2.	There are many confusing things; many contents are not relevant with the topics, so that the meaning cannot be easily comprehended.
	3.	The content that is not relevant still exist but it is understandable and it is not too bad.
	4.	There are several words that are used irrelevantly but do not influence the intended meaning much.
	5.	The topic and the content are very relevant.
Vocabulary	1.	Poor and irrelevant words; they do not fit the sentences meaning related to the topic and the situation given.
	2.	There are still lots of words used inappropriately.
	3.	The words have already been related with the topic and situation; however, they do not have any variation yet.
	4.	The words are generally relevant with the situation and have enough variation,

		but sometimes there are inappropriate words, which do not change the meaning of the sentences.
	5.	The words used are selected and have variation; they are relevant with the situation and condition so the meaning makes sense.
Generic Structure	1.	The generic structure of the content is very bad and it does not often consist of orientation and resolution.
	2.	So many disorderliness are found in the content of the writing, but those do not make the readers confused yet.
	3.	The generic structure of the writing is not either too good nor too bad.
	4.	The generic structure of the writing is not in good, but this is actually not too principle.
	5.	Every part of the writing is in good order, either in orientation, complication, or resolution.
Language Features	1.	There are many irrelevant uses of descriptive languages, many errors in using verbs, tense, and linking words.
	2.	There are some irrelevant uses of descriptive languages, some errors in using verbs, tense, and linking words.
	3.	There are a little bit irrelevant but do not change the whole meaning. Generally, it is still acceptable.
	4.	Generally accurate; the use of descriptive languages, verb, tense, and linking words.
	5.	No errors on the use of descriptive languages, verb, tense, and linking words.

3.6.2 Data Analysis on Pilot Test

Pilot test was investigated to check the validity and reliability of the instrument. Hatch and Farhady (1982) defines validity as the extent to which the results of the procedure serve the use for which they were intended. In calculating the validity value, the result of students' writing ability test on pilot test was calculated by using Pearson Product Moment.

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

(Arikunto, 2002)

Additionally, to know the scale of validity result of the instrument, the final result was confirmed to the criteria of the coefficient correlation. The table is as follow:

Table 3.5 The Criteria of Coefficient Correlation

Coeeficient Interval	Interpretation
0.00 -- 0.199	Very Low
0.20 -- 0.399	Low
0.40 -- 0.599	Fair
0.60 -- 0.799	High
0.80 -- 1.000	Very High

(Sugiyono, 2011)

After calculating the validity value, we also have to calculate the reliability from the instrument. Reliability can be defined as the extent to which a test produces a consistent result when administered under similar condition (Hatch and Farhady, 1982). The Spearman-Brown formula was used to compute data. The formula is as follow:

$$r_{II} = \frac{2 \text{ x } r_{xy}}{1+r_{xy}}$$

(Arikunto, 2002)

The criteria of the discrimination index of reliability are described in the following table:

Table 3.5 The Criteria of Discrimination Index of Reliability

Coeeficient Interval	Interpretation
r ≤ 0.20	Very Low
0.20 r ≤ 0.40	Low
0.40 r≤ 0.70	Fair
0.70 r ≤ 0.90	High
0.90 r ≤ 1.00	Very High

(Guilford: 1956, cited in Devi 2010)

3.6.3 Data Analysis on Pre-test and Post-test

Pre-test and Post-test were given to both group; experimental group and control group. The data analysis of pre-test and post-test was employed exactly the same steps as in the pilot data analysis. In addition, the data was calculated by using SPSS.

To find out the effectiveness of series of pictures in improving students' ability in writing recount text, the independent t-test formula was used in this study. Coolidge (2000) states that there are some specific assumptions that has to be fulfilled in using independent t-test appropriately. First, in each group, the participants have to be

different. Second, the scores are normally distributed in each group. Third, the variances of two groups' score are equal.

The calculation covers normality distribution test, homogeneity test, and independent t-test. The procedures are as follow:

3.6.3.1 Normality Distribution Test

The statistical calculation of normality test used Kolmogorov-Smornov test by following three steps below:

1. Setting the level of significance (p) at 0.05 and establishing the hypothesis as follows:

   Ho: the scores of the experimental and the control group are normally distributed.

   Ha: the scores of the experimental and control group are not normally distributed.

2. Analyzing the normality distribution with Kolmogorov-Smirnov test

3. Comparing the Asymp.sig with the level of significance (p). If the Asymp.sig is higher than the level of significance (0.05), the null hypothesis is not rejected, while the alternative hypothesis is rejected. It means the score are normally distributed.

3.6.3.2 Homogeneity of Variance

According to Coolidge (2000), variance homogeneity test was conducted to find out whether the two groups in independent t-test are equal or approximately equal. The homogeneity of variance test used Levene test in SPSS program. The steps are described as follows:

1. Setting the level of significance (p) at 0.05 and establishing the hypothesis as follows:

   Ho: the variances of the experimental and the control group are homogenous.

   Ha: the variances of the experimental and the control group are homogenous.

2. Analyzing the homogeneity of variance by using Levene test in SPSS

3. Comparing the Asymp.sig with the level of significance (p) for testing the hypothesis. If the Asymp.sig is more than the level of significance (0.05), the null hypothesis is not rejected, while the alternative hypothesis is rejected. It means the score are homogenous.

3.6.3.3 Independent t-test

Independent t-test was used to see whether there is a significance difference between the experimental and control groups' means. The procedures of testing the independent t-test were as follows:

1. Setting the level of significance (p) at 0.05 and establishing the hypothesis as follows:

   Ho: there are no differences between students' score of experimental and control group.

   Ha: there are differences between students' score of experimental and control group.

2. Analyzing the independent test by using SPSS.

3. Comparing the Asymp.sig with the level of significance (p) for testing the hypothesis. If the Asymp.sig is more than the level of significance (0.05), it can be concluded that there is no significant difference between the means of these two samples; on the other hand, the null hypothesis is accepted.

3.6.4 The Calculation of Effect Size

Effect size was used to find out the effect size in the independent t-test of the research. Furthermore, calculation of the effect size is important to be administered to determined the effect of the influence of independent variable upon the dependent variable (Coolidge, 2000). The formula is:

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

where:

r = effect size

t = t observe from the calculation of independent t-test

df = degree of freedom

(Coolidge, 2000)

After the value of the effect size was calculated, the score was matched with the following scale:

Table 3.7 Effect Size Value

Effect Size	*r* Value
Small	0.100
Medium	0.243
Large	0.371

(Coolidge, 2000)

3.7 Data Analysis of Questionnaires

In this study, questionnaires were purposed to investigate the students' responses on the use of series of picture during the teaching of recount text to improve their ability.

The data gained from questionnaires were calculated by using the following formula:

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

(Harris, 2010)

Where:

P = percentage

fo = frequency observed

n = the number of sample