CHAPTER III

RESEARCH METHODOLOGY

This chapter contains research questions, research design, population and samples, research procedures, research instruments, data collection, and data analysis.

3.1 Research Questions

As mentioned in the previous chapters, this research focused on these following research questions:

1. Does cooperative learning improve students' skill in writing recount text?
2. How is cooperative learning perceived by the students?

3.2 Research Design

The research employed experimental design that dealt with the effect of independent variable, the use of cooperative learning, towards students' skill in writing recount text. Research design that was used is quasi-experimental design in which it controlled some but not all of the sources of internal validity (Tuckman, 1972). Internal validity is the extent to which the outcome of the research results of the factor that have been selected rather than the result of other factors that have not been controlled (Tuckman, 1972; Hatch & Farhady, 1982).

This research used quasi-experimental design because the true experimental design could not be established. As Tuckman (1972) states that this research design exists when the true experimental is difficult or impossible to

happen. It is because the education world consists of limitation that affects researcher in assigning sample randomly. Besides that the variables in the research which deal with human behavior, language learning and language behavior are difficult to be controlled (Hatch & Farhady, 1982). The research design is as follows:

Table 3.1
Quasi-experimental Design

Sample	Pretest	Treatment	Posttest
Experimental Group (G_1)	T_1	X	T_2
Control Group (G_2)	T_1	-	T_2

T_1 : students' writing skill in pretest

X : treatment

T_2 : students' writing skill in posttest

This research involved two groups, those were experimental and control groups. Pretest was conducted to find out the initial skills of both groups (T_1). Then, the experimental group was given specific treatment (X) using cooperative learning, while the control group was given conventional method. Then, posttest was administered to find out the final results of the two groups (T_2).

3.3 Population and Samples

According to Sugiyono (2009, p. 80), population is "a general area that consists of subject or object that has certain qualities and characteristics determined by researcher to be studied then drawn into conclusion." The

population of this research was the tenth grade students of a public senior high school in Bandung that consisted of eight classes from X-1 to X-8.

The sample was selected based on nonprobability sampling because it did not involve random sample selection. There were some circumstances in which the probability sampling was not feasible and practical (Trochim, 2006. Retrieved from: http://www.socialresearchmethods.net/kb/sampnon.php). The sample selection was based on teacher's suggestion about students' equal abilities and characteristics of samples that was alike. Both classes consisted of 41 students with equal composition of male and female students and the ages ranged from 14 to 15 years old.

There were two classes taken as the samples; the first class was X-8 as the experimental group and the second one was X-7 as the control group. However, there were only 36 students from each class who became the samples because there were some students who did not take the pretest.

3.4 Research Procedures

There were some procedures conducted during this research. First, designing lesson plans for implementing cooperative learning method in teaching writing skill. The main components in this step were material delivery by the teacher, group task, then individual task. During the treatment, students were asked to practise their writing skill hence at the end of research they were expected to produce better composition.

Second, constructing then trying out the instrument to find out validity and reliabity of the test. The try out test was carried out in one class that was in the same grade as control and experimental groups. Third, administering pretest to the two groups to find out their initial writing abilities. Fourth, teaching writing recount text using cooperative learning to the experimental group.

Fifth, conducting posttest to both groups to find out their abilities after treatment. Sixth, administering questionnaire to experimental group to figure out information about students' opinions towards cooperative learning. Seventh, analyzing the results of the data collected from pre-posttest and questionnaire. Eight, drawing the conclusion then proposing suggestion for further study.

3.5 Research Instruments

There were two kinds of intruments used in this research, namely writing test and questionnaire. Writing test was used to answer the first research question whether cooperative learning improved students' skill in writing recount text. On the other hand, questionnaire was administered to answer second research question to support the data in explaining how students perceived the cooperative learning.

3.5.1 Pretest and Posttest

Pretest was administered to find out students' initial writing skill before getting treatment. The test was writing a recount text based on context given (see Appendix 1). Posttest was also administered to both groups to investigate whether

there was a significant difference between students' posttest and pretest means after the treatment.

The results of those tests were submitted and assessed by two examiners (researcher and the English teacher) based on scoring rubric. In this research the criteria of writing scoring system was adapted from Jacob et al.'s scoring profile (1981, cited in Weigle, 2002). The aspects assessed covered content, organization, vocabulary and language use. The rubric is presented as follows

Table 3.2
Writing Scoring Rubric

ASPECT	SCORE	CRITERIA
CONTENT	30-27	EXCELLENT TO VERY GOOD: knowledgeable*substantive*through development of story*relevant to assigned topic
	26-22	GOOD TO AVERAGE: some knowledge of subject*adequate range*limited development of story*mostly relevant to topic, but lacks detail
	21-17	FAIR TO POOR: limited knowledge of subject*little substance*inadequate development of topic/story
	16-13	VERY POOR: does not show knowledge of subject*non-substantive*non-pertinent
ORGANIZATION	25-20	EXCELLENT TO VERY GOOD: fluent expression*story flows clearly*well-organized (orientation, events and reorientation)*chronological order*cohesive
	19-15	GOOD TO AVERAGE: somewhat choppy*loosely organized but main ideas stand out*limited support*chronological but incomplete sequencing
	14-11	FAIR TO POOR: non-fluent*ideas/story confused or disconnected*lacks chronological sequencing & development
	10-7	VERY POOR: does not communicate*no organization
VOCABULARY	20-18	EXCELLENT TO VERY GOOD: sophisticated range*effective word/idiom choice & usage*word form mastery*appropriate register
	17-14	GOOD TO AVERAGE: adequate range*occasional errors of word/idiom form, choice, usage but meaning not obscured
	13-10	FAIR TO POOR: limited range*frequent errors of

		word/idiom form, choice, usage*meaning confused or obscured
	9-7	VERY POOR: essentially translation*little knowledge of English vocabulary, idioms, word form*or not enough to evaluate
LANGUAGE USE/SYNTAX	25-22	EXCELLENT TO VERY GOOD: effective complex constructions*few errors of agreement, the use of simple past tense, pronouns.
	21-18	GOOD TO AVERAGE: effective but simple constructions*minor problems in complex constructions*several errors of agreement, the use of simple past tense, pronouns, but meaning not obscured
	17-11	FAIR TO POOR: major problems in simple/complex construction*frequent errors of agreement, the use of simple past tense, pronouns, *meaning confused or obscured.
	10-5	VERY POOR: virtually no mastery of sentence construction rules*dominated by errors*does not communicate

Adapted from Jacobs et al.'s (1981) Scoring Profile (cited in Weigle, 2002)

3.5.2 Questionnaire

Colton and Covert (2007) states that questionnaire is used to obtain factual information, support observations, or assess attitudes and opinions. In addition, Tuckman (1972) states that questionnaire gives information about person's values and preferences.

Likert response scaled questionnaire was used for answering the second research question. It was intended to collect information about how students in experimental group perceived the use of cooperative learning.

There are fifteen questions that covers students' responses toward writing lesson, students' responses toward cooperative learning, students' responses on cooperative learning in improving their writing recount skill and social skill.

3.6 Data Collection

3.6.1 Try Out of Instrument

Before conducting pretest, the instrument was tried out to find out the validity and reliability of the test instrument. According to Tuckman (1972), "the validity of test represents the extent to which a test measures what it purports to measure." As the instrument of this research was a writing test, the test was considered valid if it measured students' skill in writing recount text.

In addition, Hatch and Farhady (1982) states that reliablity is defined as "the extent to which a test produces consistent results when administered in similar conditions." In this case, reliability was concerned with scoring criteria that should be applied consistently to all participants and similar scores should be given to the same papers by different scorers (White, 1994 cited in Weigle, 2002, p. 90).

The try out test was administered to one class that was in the same grade as control and experimental classes consisted of 34 students at a public senior high school in Bandung. It was conducted on 19 July 2010. The test was in form of writing a recount text based on the context given (see Appendix 1).

3.6.2 Pretest

Pretest was conducted in experimental and control groups to find out students' initial skill in writing recount text. The test was done on 23 July 2010.

3.6.3 Treatments

The treatments were conducted by applying cooperative learning during learning writing recount text. It took place from 29 July to 21 August 2010 every twice a week which consisted of 90 minutes per meeting.

At first, the treatment would be carried out for six times, but because of school schedule that reorganized suddenly, it only conducted for five times.

3.6.4 Posttest

The posttest was carried on after conducting the treatments to the experimental group on 24 August 2010. It was aimed to find out students' skill in writing recount text after the treatments. It was also done to figure out whether there was a significant difference between posttest means in the control and experimental groups.

3.6.5 Questionnaire

Similar to the posttest, questionnaire was also administered after the treatments to the experimental group on 24 August 2010. There were fifteen questions in order to gather additional information about students' responses towards cooperative learning method.

3.7 Data Analysis

3.7.1 Test Instrument Analysis

Try out test was carried out to find out whether the instrument was valid and reliable. The validity and reliability of the test was figured out by assessing students' writing and analyzing the results using Pearson Product Moment test and Cornbach's Alpha formula with assistance of SPSS version 15.0 (Arikunto, 1993 cited in Muhidin & Abdurrahman, 2009).

3.7.2 Pretest Data Analysis

3.7.2.1 Normality Distribution Test

Normality distribution test was conducted to find out whether or not the data of both groups normally distributed. The Kolmogorov-Smirnov test in SPSS version 15.0 was used in analyzing the normality of data distribution.

The steps of analyzing the normality distribution are as follows,

(1) Stating the hypotheses and setting the alpha level at 0.05 (two-tailed)

H_0 : the samples of the control and experimental groups are normally distributed.

H_1 : the samples of the control and experimental groups are not normally distributed.

(2) Analyzing the normality distribution using Kolmogorov-Smirnov in SPSS version 15.0, then

(3) Comparing the Asymp. sig (probability) with the level of significance (0.05) for testing the hypothesis. If the Asymp. sig. is more than the

level of significance, then the null Hypothesis (H_0) is retained. If the Asymp. sig. is less than the level of significance, then the null Hypothesis (H_0) is rejected (Hatch & Farhady, 1982: 88).

3.7.2.2 Homogeneity of Variance Test

The homogeneity of variance test was conducted to find out whether or not the variances of scores in control and experimental groups were equal. The Levene's test for equality of variance in SPSS version 15.0 was used in analyzing the variance homogeneity.

The procedures of testing homogeneity of variance were also similar to normality distribution test, namely

(1) Stating the hypotheses and setting the alpha level at 0.05 (two-tailed)

H_0 : the scores of the control and experimental groups are homogeneous.

H_1 : the scores of the control and experimental groups are not homogeneous.

(2) Analyzing the homogeneity of variance using Levene's test for equality of variance in SPSS version 15.0, then

(3) Comparing the Asymp. sig (probability) with the level of significance (0.05) for testing the hypothesis. If the Asymp. sig. is more than the level of significance, then the null Hypothesis (H_0) is retained. If the Asymp. sig. is less than the level of significance, then the null Hypothesis (H_0) is rejected (Hatch & Farhady, 1982: 88).

3.7.3 Posttest Data Analysis

The procedures of posttest data analysis were similar with the pretest. The assistance of SPSS version 15.0 was also used as a tool for analyzing the data.

3.7.4 *t*-test Computation

When the data of this research was normally distributed and homogeneous, then the assumptions of using parametric test was achieved. In order that, the independent *t*-test is used to find out whether there is a significant difference between the means of experimental and control groups.

The steps are as follows,

(1) Stating the null hypothesis and the alpha level at 0.05 (two-tailed),

H_0 : there is no significant difference between the means of control and experimental groups.

H_1 : there is a significant difference between the means of control and experimental groups.

(2) Finding the significance value with independent *t*-test formula using SPSS version 15.0,

(3) Comparing significance value and level of significance. If significance value is lower than level of significance, the result is statistically significant at the 0.05 level, then H_0 is rejected; meanwhile, if significance value is higher than level of significance, the result is not statistically significant, then H_0 is retained (Hatch & Farhady, 1982: 88).

Besides the independent *t*-test, the paired *t*-test was also conducted to calculate the significant difference between the pretest and posttest means of the both groups. The first step is stating the hypotheses and the level of significance at 0.05 (two-tailed):

H_0 : there is no significant difference between the means of control and experimental groups.

H_1 : there is a significant difference between the means of control and experimental groups.

Then, paired *t*-test was carried out to find significance value. If the significance value is lower than 0.05, then H_0 is rejected. On the other hand, if the significance value is higher than 0.05, then H_0 is retained (Hatch & Farhady, 1982: 88).

3.7.5 Normalized Average Gain Computation

Normalized gain or normalized average gain was used to measure the effectiveness of the independent variable (Hake, 1999). It is a much better indicator of the extent to which a treatment is effective than is either gain or posttest (Hake, 2002). In this research, the normalized gain measured the effectiveness of cooperative learning in improving students' skill writing recount text. The formula is as follows:

$$g = \frac{\%\ gain}{\%\ gain_{max}} = \frac{(\%posttest - \%pretest)}{(100 - \%pretest)}$$

which:

g = normalized average gain

% gain = actual average gain

$\%\ gain_{max}$ = maximum possible actual average gain

(Hake, 1999)

There are three The use of cooperative learning improves students' writing skill if the value of normalized average gain of experimental group is higher than control group.

3.7.6 Questionnaire Data Analysis

After delivering the questionnaire, the data was calculated into percentage. Then, it was interpreted based on the frequency of the students' answers. The formula for calculating the questionnaire percentage is:

$$P = \frac{Fo}{n} x100\%$$

where:

P = Percentage

F_o = Frequency observed

n = Number of sample

100 = Constant

Table 3.3
Percentage of Respondent Criterion

Percentage of Respondent Criterion	Categories
0%	None of the students
1 – 25%	Small number of the students
26 – 49%	Nearly half of the students
50%	Half of the students
51 – 75%	More than half of the students
76 – 99%	Almost all of the students
100%	All of the students

(Kuntjaraningrat, cited in Savitri 2009)