CHAPTER III

METHODOLOGY

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

3.1 Research Method
3.1.1 Research Design

This study titled "The effectiveness of peer feedback through cooperative learning to improve students' ability in writing narrative text" is a quantitative research. Sugiyono (2008, p.34) said that quantitative method is used when the study aims to test a hypothesis. Aliaga and Gunderson (2000) as cited by Muijs (2010, p.1) that "quantitative research is explaining phenomena by collecting numerical data that are analyzed using mathematically based method". In line with it, Banner (2005) also said that quantitative research shows the implementation of numeric approach toward data collection and analysis.

The design of this study is quasi experimental to get empirical data and investigated the use of peer feedback to improve students' ability in writing narrative text, or the non-equivalent pre-testpost design. "Quasi-experimental design are meant to approximate as closely as possible the advantages of true experimental design" (Muijs: 2010, p.23). As Sugiyono (2008, p.107) saidthat "quasi-experimental non-equivalent pre-test post design is used when the study wants to see the effect of treatment where experimental and control group are not chosen randomly".

Since the study used the quasi experimental design, two classes were involved in this research as the investigated groups. The first class was the experimental group and another class was the control group. The first group was

given treatment by using peer feedback technique, while the second group (the control group) was given self-corrective feedback as the treatment.

This study which used the quasi experimental design was conducted two kinds of test, those were pre-test and post-test. Both of groups were administered pre-test and post-test, however the treatment they got was different between two of them in teaching and learning process. The experimental group was applied the peer feedback technique as the treatment, while the control group was applied the self-corrective feedback as the treatment. Here, the study intended to find out whether students who used of peer feedback technique could get the score higher than other treatment. The following is the design adapted from Hatch and Farhady (1982, p.21).

Table 3.1

Quasi- Experimental Design

Groups	Pretest	Treatment	Posttest
Experimental	T_1E	X_1	T_2E
Control	T_1C	X_2	T_2C

Where;

T_1E : students' writing scores of the experimental group on pretest
T_1C : students' writing score of the control group on the pretest
X_1 : treatments using peer feedback technique for experimental group
X_2 : treatments using picture for control group
T_2E : students' writing scores of the experimental group on posttest
T_2C : students' writing scores of the control group on posttest

3.1.2   Variable

According to Coolidge (2005, p.15), independent variable is the variable which influences dependent variables; meanwhile a dependent variable is the variable that will be affected by independent variable. The variables used classified into independent and dependent variables:

1. Independent variable is peer feedback technique because this is the prominent method which is manipulated, and measured by researcher (Sukardi, 2008, p.179)

2. The dependent variable is student's score that is observed and measured to determine the effect of independent variable (Sukardi, 2008, p.179)

3.1.3 Population and Sample

The population of this study was whole students of tenth grade in one senior high school in Bandung. They are registered in academic year 2013/2014. The sample of this study was students from two selected classes. The first class is the experimental group and second group is the control group.Each class consists of 40 students. To anticipate the absence of research sample, the research only took 30 students from each class as the sample. As a result, the total fixed numbers of the sample was 60 students. The sample was chosen based on consideration that students in this level have enough experience in writing skill.

3.2 Data Collection

The purpose of using instruments in this study was to elicit and to capture the completely relevant data. This study involved two instruments in gaining the data. The instruments involved in this research were writing tasks and questionnaire.

3.2.1 Phase of Teaching

The phase of teaching was conducted for three weeks, from October 21, 2013 until November 6th, 2013; every Monday, Thursday and Friday for two learning hours (90 minutes). This phase of teaching were conducted for experimental and control groups. The detail schedule of the phase of teaching is described in the table of 3.2.

3.3 Research Procedure

3.3.1   Preparing the Lesson Plan

The lesson plan related to narrative text was designed to be implemented during treatments for experimental group and control group.The different point is only the used of peer feedback technique only for the experimental group.While for the control group, they have not peer feedback technique. The teacher designed lesson plan for five meetings, where the first and last meeting were allocated for pre and post-test, while the rest three meetings were allocated to implement the treatment.

3.3.2   Preparing the Material

The materials given were about narrative text taken from the book of Developing English Competencies for Senior High School, while narrative texts taken from some resources such as a story book and internet.

3.3.3   Administering the Pilot Test

The pilot test was administered to analyze whether students can understand the instructions of the writing test or not. After the test, students were asked about the writing test. Then if they have difficulties in understanding the writing test instructions, the writing test would be revised. The pilot test was conducted in October 21, 2013 and given for ten students in same level which were not included in experimental and control group.

3.3.4   Pre-Test

Pre-test was conducted to experimental and control group in the first meeting. This test was purposed to obtain the data of students' initial writing skill and to assured that students from two groups have same capability and English proficiency before they get treatment.

3.3.5 Treatment

Treatments were given after pre-test applied for experimental group.The treatment was the implementation of peer feedback technique to support students in writing narrative text. Time allocation for each meeting consisted of two hours instruction, each hour of instruction was forty five minutes. The description of the meeting will be elaborated as follows:

October 21th, 2013, the pretest was conducted in experimental group. The students were asked to write the story of narrative based on the available paper. The story was about TangkubanPerahu.

October 23th, 2013, the students were taught how to organize text. In this meeting, the story of *Arabian Nights* was analyzed by the students. From the text, the students were asked to organize the text well, how they stated the topic clearly, introducing paragraph, and how to presenting the generic structure of narrative.

October 25th, 2013, teacher trained the students to give feedback for their peers' writing. Furthermore, the students gave feedback to their peers' writing by using the feedback form that was given during the training process (see Appendix E). The aspect that was given comment by students was focused on organizing text. After the process of giving feedback was finished, the students were asked to revise their writing based on their peer's comment. Later, the writing draft and result had to submitted to the teacher to be checked and assessed.

October 30th, 2013, the students were taught about grammatical usage and mechanics. In this meeting, the story of *Little Red Riding Hood* was analyzed by the students. From the text, the students were asked to identify the tense that was used in the story. In the terms of mechanics, the students were taught to be more attentive in using punctuation, capitalization, and spelling.

October 8th, 2013, the students gave feedback to their peers' writing by using the feedback form, the aspect that was given comment by students was focused on

grammatical usage and mechanics. After the process of giving feedback was finished, the students were asked to revise their writing based on their peer's comment. Later, the writing draft and result had to submitted to the teacher to be checked and assessed.

November 1th, 2013, the story of *Monkey and Crocodile* was used by the teacher to identify the aspects of writing; organization text, vocabulary, grammatical usage, and mechanics. In this meeting, the students were asked to identify those aspects based on the experienced knowledge before.

November 4th, 2013, the students gave feedback to their peers' writing by using the feedback form, the aspect that was given comment by students was focused on those aspects. Later, the writing draft and result had to submitted to the teacher to be checked and assessed.

November 6th, 2013, the posttest was conducted in experimental group. The students were asked to write the story of narrative based on the available paper. The story was about TangkubanPerahu.

From the description above, it can be seen that each meeting has different theme of the narrative text. It aimed to make students do not feel bored, because there are several meeting in terms of teaching and learning narrative text. In addition, the students in experimental group had addition meeting for the session of giving feedback in peer, the teacher checked back the result of students' feedback.

For the control group, the description of time schedule as follows:

October 21th, 2013, the pretest was conducted in control group. The students were asked to write the story of narrative based on the available paper. The story was about TangkubanPerahu.

October 25th, 2013, the students were taught how to organize text. In this meeting, the story of *Arabian Nights* was analyzed by the students. From the text, the students were asked to organize the text well, how they stated the topic

clearly, introducing paragraph, and how to presenting the generic structure of narrative. Furthermore, the students were asked to write the story, then, they have to give feedback by themselves based on the feedback form that was given by the teacher. For the first, the teacher trained the students how to give feedback to their writing. After they gave feedback, they needed to revise their writing and submitted the draft and final writing to the teacher.

October 28th, 2013, the students were taught about grammatical usage and mechanics. In this meeting, the story of *Little Red Riding Hood* was analyzed by the students. From the text, the students were asked to identify the tense that was used in the story. In the terms of mechanics, the students were taught to be more attentive in using punctuation, capitalization, and spelling. Furthermore, the students were asked to write the story, then, they have to give feedback by themselves based on the feedback form that was given by the teacher. For the first, the teacher trained the students how to give feedback to their writing. After they gave feedback, they needed to revise their writing and submitted the draft and final writing to the teacher.

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November 4th, 2013, the posttest was conducted in control group. The students were asked to write the story of narrative based on the available paper. The story was about TangkubanPerahu.

For the control group, the students did the feedback for their writing by themselves in the same meeting. After they did feedback for their writing, the teacher checked the result of feedback. The score of writing of two groups actually was different, for experimental group with the treatments; they did high improvement as compared with the control group. Actually, the control group also did improvement, but it could not be concluded significant.

3.3.6   Post-Test

The study conducted post-test at the end of the research to measure students' writing skill after they got the treatment. To get the information about the differences between students' scores in two group, the post-test was distributed in experimental and control groups.

3.4 Data Analysis
3.4.1   Scoring Sheet for Writing Analysis

The result of students' writing were examined using rubric writingNarrative Grade 10 from West Virginia Education 2011.It was referred to the aspect of writing that was formulated by Brown (William, 2012, p.35). Rubric writing was chosen as the criteria of scoring represents the basic aspect of writing covered organization, development, vocabulary, word choice/grammar usage and mechanics. In this study, the scoring focused on examining only in four aspects, they are organization, vocabulary, word choice/grammar usage and mechanics. It was caused of the limitation of time and to make the students easier in assessing their friends' work in writing.

The aspects that was analyzed would be presented in the following, as an overview to elaborate its meaning. The organization assessed students' ability to introduce the beginning, established the connection and/or relationships between events, actions, and/or characters and brought closure to the writing. Meanwhile, the vocabulary usage assessed students' ability used varied and appropriate vocabularies. Grammar usage assessed students' ability used the correct diction, and appropriate grammar in writing narrative. As for mechanic; it related to

students' ability has control of end punctuation and capitalization, spelling and clarity.

Table 3.4

Writing rubric for assessing the students' writing narrative text

Scores of	(A) Organization	(B) Vocabulary	(C) Grammar Usage	(D) Mechanics
5	**Effective Organization** • Clearly stated topic • Clear and logical order • Introductory paragraph, supporting paragraphs and concluding paragraph • Purposeful transition within and between sentences, ideas and paragraphs	**Effective Vocabulary** • Includes a **wide variety** of vocabulary thatexpands the topic, butthere may be minor inaccuracies.	**Effective Word Choice/Grammar Usage** • Appropriate, precise/concise, clear meaning • Mostly consistent grammar usage ➢ Subject/verb agreement ➢ Singular/plural nouns ➢ Verb (tense and usage) ➢ Pronoun usage ➢ Adjective/Adverb	**Effective Mechanics** • Few errors ➢ Punctuation ➢ Capitalization ➢ Spelling • Needs some editing
4	**Adequate Organization** • Clearly stated topic • Some evidence of a logical order • Introductory paragraph, supporting paragraphs and concluding paragraph • Appropriate transition within and between sentences, ideas and paragraphs	**Adequate Vocabulary** • Includes a **variety** of vocabulary related to the topic.	**Adequate Word Choice/Grammar Usage** • Appropriate, specific • Somewhat consistent grammar usage ➢ Subject/verb agreement ➢ Singular/plural nouns ➢ Verb (tense and usage) ➢ Pronoun usage ➢ Adjective/Adverb	**Adequate Mechanics** • Some errors ➢ Punctuation ➢ Capitalization ➢ Spelling • Needs editing but doesn't impede readability
3	**Limited Organization** • Poorly stated topic • Limited evidence of a logical order • Introductory paragraph and concluding paragraph with limited supporting paragraphs • Repetitive use of	**Limited Vocabulary** • Includes **limited** vocabulary and/or most vocabulary is inaccurate or unrelated to the topic.	**Limited Word Choice/Grammar Usage** • Vague, redundant, simplistic • Several inconsistencies in grammar usage ➢ Subject/verb agreement ➢ Singular/plural nouns	**Limited Mechanics** • Frequent errors ➢ Punctuation ➢ Capitalization ➢ Spelling • Begins to impede readability

	transition		➢ Verb (tense and usage) ➢ Pronoun usage ➢ Adjective/Adverb	
2	**Minimal Organization/Minimal Response** • Lack of acceptable topic • Lacks evidence of a logical order • Lacks introductory paragraph, supporting paragraphs and/or concluding paragraph • Ineffective or overused transition	**Minimal Vocabulary** • Includes **minim**vocabulary and/or most vocabulary is inaccurate or unrelated to the topic.	**Minimal Word Choice/Grammar Usage/Minimal Response** • Inadequate, imprecise, repetitive • Frequent inconsistencies grammar usage ➢ Subject/verb agreement ➢ Singular/plural nouns ➢ Verb (tense and usage) ➢ Pronoun usage ➢ Adjective/Adverb	**Minimal Mechanics/ Minimal Response** • Consistent errors ➢ Punctuation ➢ Capitalization ➢ Spelling • Impedes readability
1	**Inadequate Organization** • Lacks stated topic • No logical pattern; difficult to follow • Inadequate paragraphing • Little or no transition	**Inadequate Vocabulary** • Includes **lack** vocabulary and/or most vocabulary is inaccurate or unrelated to the topic.	**Inadequate Word Choice/ Grammar Usage** • Rambling, inappropriate, incorrect, unclear • Distracting inconsistencies grammar usage ➢ Subject/verb agreement ➢ Singular/plural nouns ➢ Verb (tense and usage) ➢ Pronoun usage ➢ Adjective/Adverb	**Inadequate Mechanics** • Serious and consistent errors ➢ Punctuation ➢ Capitalization ➢ Spelling • Impedes understanding/communication

3.4.2 Data Analysis in Pilot Test

The pilot test aimed to seek the validity and reliability of instrument. Itwas conducted before the pre-testto check whether the instrument was valid or not, furthermore the instrument could be used for the pre-test. The criterion for successful instrument, the respondents were able to write based on the given instruction, so it could be concluded that the instrument can be used for pre-test and post-test.

3.4.3   Data Analysis on Pre-Test and Post-Test

In analyzing the data of pre-test and post-test that were given to both groups, dependent t-test was used to compare the means' difference between both tests. Hatch and Farhady(1982) mentioned that "the dependent t –test is used to investigate the significance of means between pretest and posttest score". A hypothesis was started with the alpha level at 0.05. The data gained through pre-test and post-test were computed one by one using IBM SPSS Statistics 20.0 for Windows.

However, before the output data will be analyzed in t-test, it should fulfill some following criteria as cited in Coolige (2000) :

1. The data should have a normal distribution
2. The variance of two groups must be homogenous
3. The participants must be different in each group

There are four steps were accomplished covering normality test, homogeneity variance, independent$t$-test,and dependent t-test.The details of statistical procedures were as follows:

3.4.3.1   Normal Distribution test

Normal distribution test was calculated before t-test. It intended to investigate whether the distribution of pre-test and post-test scores in groups were normally distributed.The statistical calculation of normality test used Kolmogorov-Smirnov by following four steps below:

1. Setting the hypothesis, H_0= the score between experimentaland control
    groupis normally distributed.
2. Setting the level of siginificance (p) at 0.05.
3. Analyzing the normality distribution using Kolmogorov-Smirnov test.
4. Comparing score between test result and level of significant value. If Asymp.Sig>0.05, the null hypothesis is not rejected which means the sample

score is normally distributed. In contrast, if Asymp.Sig<0.05, the hypothesis is rejected which means the score is not normal (Hatch and Farhady, 1982, p.88).

In addition, if the data is not normally distributed, Mann-Whitney test will be administered to test the hypothesis and SPSS 20.0 will be calculated the result.

3.4.3.2 Homogeneity Variance

The homogeneity variance test used Levene test in SPSS program. This step did after find out that pre-test and post-test score are normally distributed. The steps are as follows:

1. Setting the hypothesis, H_0=data between the two groups are homogeny
2. Setting the level of significance (α) at 0.05
3. Measuring the homogeneity variance using Levene's test
4. Comparing the result of Leven's test and alpha level of significant If Asymp.Sig.<0.05, the null hypothesis is rejected which means the two group are not equal. In contrast, if Asymp.Sig>0.05, the hypothesis is not rejected which means variance data of two group are equal or the data are homogenous (Hatch &Farhady, 1982, p.88).

3.4.3.3 Independent t-Test

Analyzing the difference between means of experimental and control group, the independent t-test was used to reveal it.In this research, the independent sample test was analyzed using computation with IBM Statistics 20.0.

There are some significant criteria in analyzing independent t-test, as follow:

1. The level of significant is $\alpha = 0.05$

2. Analyzing the independent t-test by using SPSS 20.0

3. Determining t-test hypothesis.

   a. $t_{obt}<t_{crit}= H_o$is accepted and there is no significant difference between both of groups in pretest mean.

b. $t_{obt} > t_{crit}$ = H$_o$is rejected and there is significant difference between both of groups in pretest mean (Hatch &Farhady, 1982, p.88).

3.4.3.4 Paired-sample T-tes

Paired t-test was used to find out the differences between pre-test and post-test in each group.In this research, the independent sample was analyzed using IBM SPSS statistics 20.0. The steps are as follows:

1. Setting the hypothesis, H0= there is no significant difference between students' writing score in pre-test and post-test score.
2. Setting the level of significance (α) at 0.05.
3. Calculating t-test score using IBM SPSS statistics 20.0
4. Comparing t-obtained and t-critical. If t-obtained > t-critical, it means that the null hypothesis is rejected, there is a significant difference between the scores before and after the treatment. In contrary, if t-obtained < t- critical, the hypothesis is not rejected; there is no significant difference between treatment score before and after the treatment, (Hatch &Farhady, 1982, p.88).

3.4.3.5 Effect Size

The effect size computation is conducted to check the level of effect of treatmentafter t-test calculation by using IBM SPSS Statistics 20.00 from independent t-test of post-test. The effect size is used to determine how significance the impact of treatment to the experimental group's score. Effect size has positive correlation to its value, the larger impact of treatment (Collidge, 2000). The formula of effect size:

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

r : effect size

t : independent t-test value

df : degree of freedom

Value of effect size is interpreted by following scale:

Table 3.5

Scale of effect size

Effect Size	r value
Small	.100
Medium	.243
Large	.371

This chapter has presented the methodology of the research including research method, population and sample, data collection, research procedures, data analysis. Then, the findings and the discussions of the data collected will be explained in more detail in the next chapter.