

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter discusses methodology of the research, including research design, research subject, research instruments, research procedure, and data analysis.

#### **3.1 Research Design**

##### **3.1.1 The Experimental Design**

In conducting this research the quantitative research design was used as a basic framework since it was aimed to test a hypothesis through collecting and analyzing the numerical data. Sugiyono (2008) states that quantitative method is used when the study aims to test a hypothesis. It is also supported by Brannen (2005) who states that quantitative research shows the implementation of numeric approach towards data collection and analysis.

Quasi-experimental non-equivalent pre-test post-test design was applied in conducting this research since it aimed to investigate whether the peer feedback increases the students' descriptive writing skill or not. Creswell (2012, p. 310) states that essentially, the researcher takes two groups, they are experimental group and control group, then administers a pre-test to both groups, conducts the experimental treatment activities to the experimental group only in which using peer feedback as the treatment activities, then gives the post-test to both groups to find out the difference between two groups.

There were two classes involved in this research, one class as an experimental group, and another as a control group. The research was started with conducting a pilot test. This test aimed to test the instruments that would be used in the research. The pilot test was conducted to 30 students who came from the same grade as the participants. In this test, the 30 students were asked to make a descriptive text based on a picture given. They were given 30 minutes to write the

descriptive text for at least 150 to 250 words. It aimed to check whether or not they have learned the descriptive text before.

After conducting the pilot test, the research was continued by conducting pre-test for both groups. Then, a training of peer feedback process was conducted and only given to the experimental group, while the control group was not. It contained of two meetings training about the peer feedback process and the simulation of it. After that, giving the treatments activity were conducted, which was peer feedback activity. These treatments were only given to the experimental group, while the control group was not. The similar activities in the control group were conducted without any peer feedback activity at all. However, the researcher, as the teacher, still gave the two groups guidelines through the instructions to guide them in doing the exercise. Then, at the end of the research, post-test and questionnaires were applied to find out students' final score and responses toward the implementation of peer feedback in learning writing. The post-test were given to both groups, while questionnaires were only given to the experimental group.

The description of the quasi-experimental design which was applied in this research was like what has been described by Fraenkle J. R. et al (2012) as follows:

Treatment Group	M	O <sup>1</sup>	X	O <sup>2</sup>
Control Group	M	O <sup>1</sup>	C	O <sup>2</sup>

Notes :

- M = Matched subject
- O<sup>1</sup> = Students' writing score in pre-test
- O<sup>2</sup> = Students' writing score in post-test
- X = Treatments using peer feedback technique
- C = No treatment

### **3.1.2 The Variable**

According to Cresswell (2012, p. 112), variable is a characteristic of an individual or organization that can be measured by the researcher and also varies which has different value among different individuals or organization. The variables used in this research are classified into dependent and independent variables. Fraenkle J. R. et al (2012, p. 92) states that independent variables are those that researcher chooses to study in order to asses their possible effect(s) on one or more other variables. In the other hand, dependent variables are those which are persumed to affect other variables. In other words, dependent variables are those who can not stand alone, depend on or influenced by the independent variables.

1. Independent variable chosen in this research was peer feedback technique. Peer feedback technique became the treatment or prominent method which was manipulated.
2. Dependent variable in this research was students' descriptive score which is observed and measured by the researcher. It became the outcome from the independent variable.

## **3.2 Research Subject**

### **3.2.1 Population**

Population is the group which becomes the destination of the researcher in gaining the result of the research. It is supported by Fraenkle, J. R. et al (2012) that state that population is the group of interest as the destination that the researcher would like to generalize the result of the study. They further explain that in educational research, the population is usually group of persons (students, teachers, or other individuals) who process certain characteristics and in some cases it can be defined as a group of classroom, schools, or even facilities (2012, p. 92). Based on that reason, the population of this research was the whole

students of second grade in one Junior High School in Subang. They are enrolled in academic year 2013/2014.

The second grade of Junior High School in Subang were taken as population of this research since it is done to the fact that in curriculum 2006 descriptive text is taught and learned in the first grade of Junior High School. So, the researcher could make sure that those students have learned the descriptive text before.

### **3.2.2 Sample**

Sample are smaller group of population or the group on which the information is obtained in the research (Fraenkle, J.R. et al, 2012, p. 91). It is a subgroup of the target population and selected from individual who represents the whole population that was planned to conduct the research for generalizing about the target population (Creswell, 2012, p. 142).

This research used cluster random sampling technique in deciding the samples of the research. It is because there was difficulty in selecting the random sample of individuals due to the administrative of the school. The cluster random sampling can be applied when the researcher finds the difficulties in selecting a random sample of individuals (Fraenkle, J. R. et al, 2012, p. 96).

Regarding to those explanation, the samples of this research were two classes of the second grade of Junior High School which were randomly chosen since based on the curriculum 2006, descriptive text is taught in the first grade of Junior High School. Each class consists of 35 students, but the researcher only took 30 students as the samples for avoiding the absence of the students. The first class became the experimental group and the second class became the control group. As a result, the total numbers of the sample was 60 students.

### **3.3 Research Instruments**

Some instruments were used to collect the data. Fraenkle, J. R et al (2012, p. 111) state that the device (such as pencil, paper test, questionnaire, or rating scale)

which is used by the researcher to collect the data can be categorized as an instrument. The following instruments were based on the research questions as follow:

1. Does peer feedback increase students' descriptive writing skill?
2. What are the responses of the students toward the use of peer feedback in teaching a descriptive text?

Therefore, the following were the instruments used in the research:

a. Writing Tasks

Writing tasks were used to measure students' skill in writing descriptive text. It was used to answer the research question number 1, which is to find out the use of peer feedback in increasing students' descriptive writing skill. There were two pictures as the media used by the students to write descriptive text which include the media used for both pre and post-test. The topic raised in the pictures given to the students was about "House". At the beginning, all students were given the pre-test to measure their initial abilities in descriptive writing before given the treatments, which is the implementation of the peer feedback. The pre-test was about to write the descriptive text consists of 150-250 words based on the given picture. The picture used in the pre-test was similar with the picture used during the treatments process since the students made the revision based on their writings in the pre-test. In the end, after implementing the treatments, the students were given the different picture, however the topic raised in the picture was similar with the previous one. They were asked to follow the similar instruction in the post-test, which is to write the descriptive text consists of 150-250 words based on the given picture. It aims to see the final progress of the students after given the treatments.

b. Questionnaires

The questionnaires were distributed in order to answer the research question number 2, which is to find out the responses of the students towards the implementation of peer feedback in writing descriptive text.

Close ended type of questionnaire was used since the answers of the questions included in the questionnaires are limited to the stated alternatives. Based on Flatworld Solutions Pvt. Ltd (2002), it is stated that close format or close-ended questions contain of multiple choice questions, in which the respondents are required to choose among any of the given multiple choice answers. Furthermore, likert questions were contained in the questionnaires since it aims to elaborate how strongly the respondents agree to the statement written in the questionnaires. According to Trochim (2006), Likert Scaling or likert question attempts to measure on an interval level.

The questionnaires section in this research were conducted after the post-test. It is given to the experimental group only since the questions consist of the questions related to the implementation of peer feedback.

### **3.4 Research Procedure**

This research was guided by some steps of research procedure that can be described as follow:

#### **3.4.1 Preparing The Lesson Plan**

The lesson plan was designed as a guidance in conducting the treatments to the students. The material included in designing the lesson plan was descriptive text in which it was organized by five meetings. The first and the last meeting were prepared to conduct the pre-test and post-test, while the other three meetings were allocated to implement the treatments by using peer feedback technique.

#### **3.4.2 Trying Out The Research Instrument by Conducting The Pilot Test**

Before starting the pre-test, the pilot test was conducted. It was aimed to examine the validation of the writing test as the instrument. The pilot test was conducted to 30 students in similar grade, who were not included in both experimental and control group. The students who got this test were assumed that they have already learned descriptive text.

### **3.4.3 Conducting The Pre-test**

At the beginning, pre-test for both groups, experimental group and control group, was conducted. This test aimed to measure the ability of the students in descriptive writing before given the treatments from the researcher.

As the pre-test of this research, the students were asked to make a descriptive text for at least 250 to 350 words based on the picture given to the students. They were given 30 minutes to write the text.

### **3.4.4 Conducting the Training**

Before continued by some treatments, the training was conducted. It was only given to the experimental group. The experimental group was given two meetings training about the process of peer feedback, while the control group was not. The training was aimed to give understanding to the students toward the implementation of peer feedback. The students were given the simulation and role play about the process of peer feedback. Besides, they were also given the information about how to make a good feedback to their friends.

### **3.4.5 Conducting the Treatments**

The treatments were conducted after the students got the pre-test and training from the researcher. It was only given to the experimental group. “In an experiment, the researcher physically manipulates with interventions in one or more condition so that individuals experience something different in the

experimental condition than in control conditions.” (Creswell, 2012, p. 301). This research conducted three treatments. These treatments were implementing peer feedback technique. Each treatment is given in one meeting. Time allocation for each meeting consisted of two learning hours in which one learning hour is 45 minutes. Time schedule of this research can be described in the following table.

Table 3.1  
Time Schedule of The Research

<b>DATE</b>	<b>EXPERIMENTAL GROUP</b>	<b>CONTROL GROUP</b>
<b>May 12<sup>nd</sup>, 2014</b>	Pre-test (Describing Place)	Pre-test (Describing Place)
<b>May 19<sup>th</sup>, 2014</b>	Peer feedback training, peer feedback 1 and revised draft 1	Revised draft 1
<b>May 22<sup>nd</sup>, 2014</b>	Peer feedback 2 and revised draft 2	Revised draft 2
<b>June 2<sup>nd</sup>, 2014</b>	Peer feedback 3 and final draft	Final draft
<b>June 5<sup>th</sup>, 2014</b>	Post-test and Questionnaires	Post-test

In the first meeting, the pre-test was conducted to both control and experimental group. It was aimed to measure students’ descriptive writing skill before given the treatments. As the pre-test, the students were asked to make a descriptive text for at least 150-250 words based on the given pictures. The students were given 30 minutes for doing the pre-test. When the students finished the test, the students’ works were collected to be checked.



After doing the pre-test in the first meeting, it was continued by conducting a training of peer feedback process. This training was only given to the experimental group, while the control group was not. It contained of two meetings training and was aimed to make the students fully understand about the process of giving peer feedback to their peers and how to give a good feedback on the other's writings.

Then, the research was continues by giving the treatments. These treatments were conducted in three meetings and only given to the experimental group, while the students of the control group were only asked to revise their writings without any treatment. However, the researcher, as the teacher, still gave the two groups some instructions in order to guide them in doing the exercise.

The treatments that were conducted in this research were the activities which implemented peer feedback technique. The students were asked to read their friend's task, give some comment and feedback about the errors made, then give it back to the owner. In the other side, the students as the participants also got the feedback on their tasks from their friends. When they got their tasks back, they could revise their writing based on the feedback given.

The last meeting was completed by conducting the post-test for both experimental and control group. It was aimed to measure the students' skill in writing descriptive text after given the treatments and see the differences of the students' score between the experimental and control group. In this test, the students were given the new picture and had to make a descriptive text for at least 150-250 words based on that picture. They were given 30 minutes to do it. When the students finished the test, their tasks were collected to be check and measured.

After conducting the post-test, in the last meeting, it was continued with spreading the questionnaires to the experimental group. The questionnaires were only given to the experimental group since it was aimed to see the responses of the students to the implementation of peer feedback in learning writing descriptive text. The questionnaires were then collected and measured.

### **3.4.6 Conducting The Post-test**

After conducting the three treatments, at the end of the research, the post-test for both groups was conducted, experimental group and control group. It aimed to measure the students' skill in writing descriptive text after given the treatments. Besides, it also aimed to see the differences of the students' score between the experimental and control group. According to Creswell (2012), the researcher could take another reading on attribute or characteristic after the treatment and a post-test is a measure on some attribute or characteristics that is assessed for participants in an experiment after a treatment.

The post-test of this research was quite similar with the pre-test that has been conducted before. The difference was the students were given the new picture to be described. After getting the new picture, they have to describe it in a descriptive text for at least 250 to 350 words in 30 minutes.

### **3.4.7 Administering Questionnaires**

Fraenkel et al (2012) state that in questionnaires, the subjects respond to the questions by writing or marking and answer sheet. In addition, questionnaires can be distributed to the large number of people at the same time. In this research, questionnaires were distributed to the experimental group only, in which the peer feedback technique was implemented. It was aimed to find the responses of the students toward the implementation of the peer feedback in learning descriptive writing.

## **3.5 Data Analysis**

In this research, the data were collected from the pre-test, three treatments, and post-test. Besides analyzing the data from those tests and treatments, the data gathered was also analyzed from the questionnaires. The procedure of analyzing the data comprised some steps.

First, the data collected from students' writing performance in the pre-test, post-test and the treatments were analyzed by using analytic scoring in writing based on Wechsler Objective Language Dimension (2005), known as WOLD. It is a UK standardisation of the Wechsler Individual Achievement Test (WIAT-R) developed in United States (US). This assessment is an individually administered test of expressive language skill in children age 8-16 years (Dunsmuir, et. al., 2015).

The scoring guide chosen as the criteria of scoring represents the basic aspects of writing, they are spelling, punctuation, sentence and grammar structure, vocabulary, organization and overall structure, and ideas aspects. In addition, handwriting was added to the scoring criteria. It is because the surveys estimate that 13,9% of pupils to have difficulties with handwriting (Barnett, Stainhorp, Henderson, & Scheib, 2006). Besides, a large literature, which includes both correlational and experimental methods, supports that difficulties with handwriting are associated with higher level aspects of writing such as the quality and fluency of written expression (Dunsmur, et. al., 2015). It means that an individual who is fluent at handwriting has greater attentional capacity to devote to planning and composing when compared to an individual who has poor handwriting skills and must devote attentional resources to this aspect of writing. Based on these reasons, handwriting aspect needs to be considered.

In this research, the scoring is not only focused on the process of the writing, but the product itself based on the aspects mentioned before. After analyzing the data using WOLD (2005), second, the scores gained were calculated by applying the statistical analysis of T-test to determine how mean of the pre-test is different from the post-test score. Then, the significance of the test was calculated by using computer programme of Statistical Product and Service Solution (SPSS). The final step after calculating the data from pre-test, post-test and three treatments, was analyzing the questionnaires. The questionnaires were

analyzed based on the frequency of the students' answer, then the result was calculated and interpreted into percentage.

### **3.5.1 Scoring Sheet for Writing test**

Students' writing text was analyzed using the scoring standard which was adapted from analytic scoring in writing based on Wechsler Objective Language Dimension (2005), which contains of some aspects that have to be measured. Those aspects handwriting, spelling, punctuation, sentence and grammar structure, vocabulary, organization and overall structure, and ideas. The score for each aspect ranges similarly each other, the score 4 for the best and 1 for the worst. For more details, the analytic scoring in writing based on Wechsler Objective Language Dimension (2005) was put on the appendix

### **3.5.2 Pilot Test Data Analysis**

The pilot test was the test that is conducted before doing the pre-test to the students. It aimed to measure the validity and reability of the instrument used in this research. This pilot test was conducted to 30 students in similar level who were not included to both experimental and control group. If the students were able to complete the test based on the instructios given with good scores, then it could be concluded that the instrument could be used as the pre-test and post-test.

### **3.5.3 Pre-test and Post-test Data Analysis**

The pre-test and post-test were given to both experimental group and control group in the same procedures. It aimed to know the use of peer feedback in increasing students' descriptive writing skill. Alpha level at 0.05 started a hypothesis, and the data collected in this research were computed using IBM SPSS Statistics 15.0 for Windows. Since the result of both experimental group and control group were used to know the use of peer feedback in increasing students' descriptive writing skill, it meant that the researcher aimed to find

causative relationship between the independent variable and the dependent variable.

There were three steps that have been fulfilled in this research, they are normality test, homogeneity variance, and independent t-test.

### **3.5.3.1 Normality of Distribution Test**

Normal distribution was calculated before t-test was conducted. It was in purposed to investigate whether or not the distribution of pre-test and post-test scores in groups were normally distributed. Shapiro-Wilk test formula in SPSS 15.0 was used for Windows to analyze the normality of distribution. The steps were as follows:

1. Setting the hypothesis and the alpha level at 0.05 (two tailed t-test)
2. Analyzing the normality distribution using Shapiro-Wilk test formula in SPSS for Windows.

$H_0$  = the scores of the experimental group and control group are normally distributed.

$H_1$  = the scores of the experimental group and control group are not normally distributed.

3. Comparing score between the result and the level of significant value. If the Asymp Sig. (probability) is more than the level significance (0.05), then the null hypothesis is not rejected, which means the sample score is normally ditributed. In contrast, if Asymp Sig. is less than the level significance (0.05), the hypothesis is rejected, which means the score is not normally distributed.

#### **3.5.3.1.1 Normality Distribution Test of Pre-test**

Listya Marianti , 2015

*THE USE OF PEER FEEDBACK IN INCREASING STUDENT'S DESCRIPTIVE WRITING SKILL*

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

The normality distribution test was used to find out whether or not the scores of the students are normally distributed. As the first step, the researcher tested the normality of the pre-test score which is stated the hypothesis as follows:

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

The next step was computing the normality test. The normality test was conducted by using Shapiro-Wilk test at level of significance (0.05). The Shapiro-Wilk Test was used since it is appropriate for small sample sized (<50 samples), but can also used for the large sample as large as 2000. Hence, this reasearch uses the Shapiro-Wilk test as the numerical means of assessing the normality.

Based on the result of the computation based on Shapiro-Wilk, it shows that the Asymp.sig of experimental group is 0.315 and the control group is 0.281 which are higher than the level of significance (0.05). In the other words, the pre-test score in the control and experimental group was normally distributed. For this reason, the null hypothesis was accepted.

#### **3.5.3.1.2 Normality Distribution Test of Post-test**

The normality distribution test was taken as the first step. It was conducted by using Shapiro-Wilk test. In addition, there is a hypothesis stated before doing the calculation. The hypothesis proposed was null hypothesis.

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

Based on the computation of the Shapiro-Wilk test computation, it shows the Asymp sig of the experimental group is 0,176 and the control group is 0,191 which are higher than the significance level (0.05). In the other words, the data from post-test was normally distributed and the null hypothesis was accepted.

### 3.5.3.2 Homogeneity of Variance Test

The variance homogeneity test was conducted to examine whether or not the score of the research was homogeneous. In this research, the statistical calculation of variance homogeneity test used ANOVA Lavene test formula in SPSS for Windows by following these steps:

1. Setting the hypothesis and the alpha level at 0.05 (two tailed t-test).

$H_0$  = the scores of the experimental group and control group are homogenous.

$H_1$  = the scores of the experimental group and control group are not homogenous.

2. Analyzing the normality distribution using Lavine formula in SPSS for Windows.
3. Comparing the result of Lavine test and alfa level of significance. If the Asymp Sig. (probability) is more than the level significance (0.05), then the null hypothesis is not rejected, which means the variance of the experimental and control group are homogeneous. In contrast, if Asymp Sig. is less than the level significance (0.05), the hypothesis is rejected, which means the variance of the experimental and control group are not homogeneous.

#### 3.5.3.2.1 Homogeneity of Variance Test of Pre-test

The homogeneity of pre-test score in both control and experimental groups was tested using Levene's test computation. In testing the homogeneity score, the hypothesis was stated as follows:

$H_0$  : the variance of control and experimental group are homogeneous.

After the hypothesis stated in the first step, then the homogeneity of variance of the score was computed. Later, the result of homogeneity test was compared with the significance level at 0.05.

From the result of statistics calculation of Levene's test computation, it shows the significance value of the test is 0.374. It can be concluded that the pre-test score in both control and experimental groups are homogeneous since the value of significance is higher than the level of significance (0.05). In addition, the null hypothesis of the pre-test score which has been stated before can be accepted in which the variance of the score in both groups were equal.

#### **3.5.3.2.2 Homogeneity of Variance Test of Post-test**

Homogeneity of Variance test was used in order to know whether or not the score of the experimental and control group are homogeneous. Homogeneity of variance test on the post-test score were analyzed by using Levene's test computation. The hypothesis was stated as follows:

Ho = the variance of the control and experimental groups are homogeneous.

H1 = the variance of the control and experimental groups are not homogeneous.

At first, the alpha level was set at 0.05. If the probability  $> 0.05$ , it means that Ho is accepted. In contrast, if the probability  $< 0.05$ , H1 is accepted.

The result of the Shapiro-Wilk calculation shows that the significance value is 0.76 and it is higher than the level of significance (0.05). In short, the null hypothesis is accepted. The data of the post-test from both control and experimental groups was homogeneous.

#### **3.5.3.3 T-test Calculation**



In this research, the independent t-test in SPSS for windows was used to analyze the difference between means of experimental group and control group.

The steps were as follows:

1. Setting the hypothesis and the alpha level at 0.05 (two tailed t-test).

$H_0$  = there is no significant difference between pre-test mean for experimental group and control group.

$H_1$  = there is significant difference between pre-test mean for experimental group and control group

2. Calculating t-test score using SPSS statistics.
3. Comparing t-obtained and t-critical. If t-obtained is more than t-critical (t-obtained > t-critical), it means that the hypothesis is rejected; there is significant difference between two groups. In contrast, if t-obtained is less than t-critical (t-obtained < t-critical), it means that the hypothesis is not rejected; there is no significant difference between two groups.

#### **3.5.4 Data Analysis on Questionnaire**

At the end of the research, the questionnaires were distributed to the experimental group. It aimed to clarify the information and elaborate the data concerning the research question about the students' responses toward the implementation of peer feedback in increasing students' descriptive writing skill.

The data collected from the questionnaires were classified into two major aspects, they are students' responses toward writing subject and students' responses toward the use of peer feedback technique in writing descriptive text. The data gained from the questionnaires were analyzed based on the frequency of students' answer. The result will be calculated and interpreted into percentage.

The formula of percentage used is as follow:

$$P = \frac{F}{n} \times 100$$

P = percentage

F = frequency  
n = the sum of the sample  
100 = constant

(Sudjana & Ibrahim, 2010:129)

This chapter has presented the methodology of the research including research design, research subject, research instrument, research procedures, and data analysis. Then, the finding and discussions of the data collected will be explained in more detail in the next chapter.