

CHAPTER III

RESEARCH METHODOLOGY

The methodology should be ‘appropriate and understandable so that other researchers could replicate the study if they wished’ (Fraenkel et al., 2012, p. 624). Drawing on the pertinent theoretical justification, this section presents an overview of the research process structure and the strategies guiding the methods when approaching the research questions.

3.1 Research Design

3.1.1 Experimental Research Design

Corresponding to the research questions of the study above, this study employed experimental research design, as a traditional way of conducting quantitative research (Creswell, 2012, p. 294). The purpose of this study is to determine the impacts of three different electronic feedback strategies on the second grade of senior high school students’ writing by using a design which compared: teacher feedback through the comment function on the students’ essay in the form of a word-processed text sent by email only, teacher feedback through the comment function on the students’ essay in the form of a word-processed text sent by email followed by online discussion and no electronic feedback condition. To compare student’s writing quality, students produced two essays; the first essay at the beginning of the study which then experienced two feedback and two revision segments and the second essay which was a new text at the end of the study. The second essay which was not given any feedback was compared with the first draft of the first essay to determine the impacts of different feedback strategies on a new piece of text.

The quantitative design in this study is experimental with one independent variable and one dependent variable. The independent variable in this study is teacher electronic feedback strategy. This variable comprised two different types namely, teacher feedback through the comment function on students’ essay in the form of a word-processed text sent by email only and teacher feedback through the comment function on students’ essay in the form of a word-processed text sent by email and followed by online discussion. The dependent

variables in this study is essay quality scores on Essay1 and Essay 2 which will be measured by the ESL Composition Profile developed by Jacobs et al (1981).

The design of the experiment of teacher electronic feedback treatment are presented below in Table 3.1

Table 3.1

Groups	Stages			
	Essay 1	Revised draft 1	Revised draft 2	Essay 2
Treatment I (Feedback through the comment function on students' essay in the form of a word-processed text sent by Email only)	X1	X1	-	-
Treatment II (Feedback through the comment function on students' essay in the form of a word-processed text sent by Email and followed by online discussion)	X2	X2	-	-
Control (Oral Feedback in the classroom)	-	-	-	-

3.1.2 The Variable

A variable is a characteristic of an individual or organization that can be measured by the researchers and also varies which has different value among different individuals or organizations (Creswell, 2012). Variables may be independent (e.g. practice trial), dependent (e.g. skill performance), moderator (e.g. sex), control (e.g. age, intelligence) and intervening

(e.g. learning) (Malik & Hamied, 2014). However, a common and useful way to think about the variables is to classify them as independent or dependent. Independent variables are those that the researcher chooses to study in order to assess their possible effect(s) on one or more other variables (Fraenkel, J. R. et al., 2012). An independent variable is a stimulus variable or input and it operates either within his environment to affect his behavior and it is that factor which is measured, manipulated or selected by the researcher to determine its relationship to an observed phenomenon (Malik & Hamied, 2014). Those are presumed to affect other variables called dependent variables. In other words, dependent variables are those that dependent on or influenced by the independent variables. The dependent variable is a response or output or an observed aspect of behavior of an organism that has been stimulated (Malik & Hamied, 2014). The most common dependent variable in education is achievement or learning (Malik & Hamied, 2014). Accordance to the explanation above, this study also classified the variables into independent and dependent variables.

1. Independent variable chosen was teacher electronic feedback technique which comprised two different types namely, teacher feedback through the comment function on students' essay in the form of a word-processed text sent by email only and teacher feedback through the comment function on students' essay in the form of a word-processed text sent by email and followed by online discussion. Teacher electronic feedback technique became the treatment or manipulated variable.
2. Dependent variable in this study was students' writing score on Essay 1 and Essay 2 which measured by Jacobs et al (1981) ESL Composition Profile. It became the outcome from independent variable.

3.2 Sample

The study took place at one senior high school in Bandung, West java, Indonesia. The research site was chosen for two reasons. First, it was a senior high school which was relevant to the context in which this study was conducted. Second, there was an easy access to the site (McMillan & Schumacher, 2001) since both the teacher and the students were cooperative

with the researcher; therefore, there was no difficulty in clarifying the obscure information from the participants. The sampling technique that used in this study was cluster random sampling technique. Cluster sampling was applied because there was difficulty in selecting the random sample of individuals due to the administrative of the school. In addition, Fraenkel, J. R. et al (2012) affirmed that the cluster random sampling can be used when it is difficult to select a random sample of individuals, besides, it is often easier to implement in school and also frequently less time-consuming.

Regarding to those explanations, this study took three classes randomly as sample. Each class consists of 32 students and researcher took 30 students as the sample for avoiding the absence of the students. Therefore, the participants of this study were one English teacher and 90 second-grade students enrolled in her class. The teacher that involve in this study was chosen because she provided written feedback on the students' compositions. Ninety students that involve in this study were considered enough to provide information needed for this study and recommended by the teacher as they are able to provide the important information needed in this study.

3. 3 Data Collection

In conducting this study, some instruments were used to collect the data and several steps have been taken in order to collect the data. The basic principles guiding data collection in quantitative research are that data is derived in a way that is independent of the expectations of the researcher and the data is true representation of a phenomenon under investigation (Maliek& Hamid, 2015)

3.3.1 Instrument

In acquiring the data and informational knowledge, writing test, including students' pretest and posttest, evaluation or assessment format and interview for students were applied in this study. Students' writing test and assessment format were used to find out the students' improvement in their writing quality. Student's written compositions were collected to analyze and investigate the students' writing quality which, measured by a scoring rubric as the assessment format developed by Jacobs et al (1981). This rubric was chosen to be used in

this study because it has been around since 1981 and has been widely used by many ESL/EFL teachers to grade students' essays (Meisuo, 2000; O'Sullivan & Chambers, 2006). It also facilitated the examination of writings at five important levels of writing qualities, namely, content, organization, vocabulary, language use and mechanic. However, this study was only focus on one of five levels of writing namely language use. In addition, a semi structured interview was applied in order to gain students' attitudes toward the implementation of teacher electronic feedback.

3.3.1.1 Writing Tests

This study administered two different types of writing test, pretest and posttest. The two experimental groups and one control group were given the same instructions and were scored using the same scoring rubric. The instruction covered the type of text, topic of the text, number of words required, time allocation, and the rule of how text should be collected. In this test, the students were asked to write a descriptive text for about 250 words referred to the stated topic.

The test for pretest was conducted to gather the data of students' initial writing quality and to ascertain that both groups have similar capability in writing skill before they receive the treatment. As Creswell (2012) noted that pretest provides a measure on some attribute or characteristic that researcher assess for participants in an experiment before they receive the treatment. Students were assigned to write a descriptive text with the topic "describing about yourself" (see appendix A). It was expected that the text included with the features of descriptive text along with the accurate language use aspect. This pretest texts were then analyzed using Jacobs et al (1981) analytic method of scoring.

The posttest was applied the same way with the posttest. It was conducted to measure the differences of students' score before and after treatment among the two experimental groups and one control group. Creswell (2012) reaffirmed that after the treatment, the researcher could take another reading on the attribute or characteristic and a posttest is a measure on some attribute or characteristic that is assessed for participants in an experiment after a treatment. Students were assigned to write a descriptive text with the topic "describing about your family" (see Appendix B). The data of this posttest were used to examine the

hypothesis of the study. The Jacobs et al (1981) scoring rubric was also applied to assess this posttest.

3.3.1.2 The Assessment Format

The assessment format used in this study was developed by Jacobs et al (1981). This format was chosen as the criteria of scoring represents the basic aspect of writing. They are content, organization, vocabulary, language use, and mechanics aspects. In this study the scoring only focuses on language aspect. This language use aspect within its description is presented in the following table.

Table 3.2

The Scoring Standard of ESL Composition Profile

Aspect of Writing	Range	Score	Criterion
Language Use	25-22	Excellent to very good	*Effective complex construction *Few errors of agreement, tense, number, word order/function, articles, pronouns and preposition.
	21-18	Good to Average	*Effective but simple constructions *Minor problems in complex construction * Several errors of agreement, tense, number, word order/function, articles, pronouns,

		prepositions but meaning seldom obscured.
17-11	Fair to Poor	<p>*Major problems in complex construction</p> <p>*Frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns and preposition.</p> <p>*Meaning confused or obscured.</p>
10-5	Very Poor	<p>*virtually no mastery sentence construction rules</p> <p>*dominated by errors.</p> <p>*does not communicate.</p> <p>*not enough to evaluate.</p>

Adopted from Jacob et al. (1981)

3.3.1.3 Interview

A semi structured interview session was conducted to the students from the two experimental groups in order to confirm the findings gathered through writing tasks. The interview questions cover what the students' attitudes toward the use of the teacher electronic feedback in their writing (see Appendix C). Meanwhile the students' interview was administered into three groups of students based on students' level of proficiency in writing; high, medium, and low. By conducting interview based on students' level of proficiency, the

present study expected to get the responses based on all students' level of proficiency. The interview for the students were written and asked in Bahasa Indonesia since the purposes of the interview session were not to test their English proficiency in speaking but to gather information on the issue.

The interview questions were also categorized into three big parts based on the affective, behavioral, and cognitive components. The first part related with cognitive component as the questions covering the thinking or belief that student has about the attitude object or in this case is about the teacher electronic feedback. The second part dealt with affective component and the questions related with the thoughts, feelings and emotions student has toward an attitude object such as teacher feedback and teacher electronic feedback techniques. The last part related with behavioral component and the questions provided try to reveal student's explicit events and reactions to the attitude object or teacher electronic feedback. These three components are all reflected in the semi structured interview as the instrument in gaining the data for discovering students' attitude toward the implementation of teacher electronic feedback.

3.3.2 Procedural Details

The procedures of this study were gained by several steps that can be described as follow:

- a. Trying out the research instrument by conducting the pilot study

The researcher conducted a pilot study to test instruments and procedures to ensure that the actual study would run as planned. Six high school students which divided into three groups were assigned to write an essay consisted of approximately 250 words. Experimental group 2 received teacher feedback through email and online discussion, experimental group 1 received teacher feedback through email only and control group did not get any electronic feedback. Both experimental groups were assigned to send their essay to their teacher email address and one day later each student would receive their essay with feedback written in it. For the experimental group 2, before revising their essay, they were signed up to *Edmodo* platform and were invited to join into the discussion lead by the teacher. The discussion was based on the common mistake made by the students in the first essay. After joining the

discussion, the experimental group 2 could directly send the revision to the teacher email. While the experimental group 1 did not need to join the discussion, and could revise their essay and directly send it back to the teacher email address.

Pilot test was conducted to the students at the same grade who were not included in both control and experimental groups. It was done to test instruments and procedures to ensure that the actual study would run as planned. Six high school students which divided into three groups were assigned to write an essay consisted of approximately 250 words. Experimental group 2 received teacher feedback through email and online discussion, experimental group 1 received teacher feedback through email only and control group did not get any electronic feedback. Both experimental groups were assigned to send their essay to the teacher e-mail address and one day later each student received their essay with feedback in it. For the experimental group 2, before revising their essay, they were signed up to *Edmodo* platform and were invited to join into the discussion lead by the teacher. The discussion was based on the common mistake made by the students in the first essay. After joining the discussion, the experimental group 2 could directly send the revision to the teacher email. While the experimental group 1 did not need to join the discussion, and could revise their essay and directly send it back to the teacher email address.

The students' writing on the pilot test was analyzed using The ESL Composition Profile (Jacobs et al., 1981) as the scoring system in evaluating students' writing. According to this scoring system, the assessment towards students' composition work was based on five aspects of writing: content, organization, vocabulary, language use, and mechanics aspects. The score for each aspect ranges differently each other and it is classified into some criteria, such as (1) content- the score ranging from 30 (the highest score or excellent) to 13 (the lowest score or very poor), (2) organization-the score is ranging from 20 (excellent) to 7 (very poor), (3) vocabulary-the score is ranging from 20 (excellent) to 7 (very poor), (4) language use-the score is ranging from 25 (excellent) to 5 (very poor), and (5) mechanic-the score is ranging from 5 (excellent) to 2 (very poor). However, this research only focused on evaluating students' writing in language use aspect. In this aspect, the students' scores were divided into four mastery level, (1) excellent to very good which ranging from 25 to 22, (2) good to

average which ranging from 21 to 18, (3) fair to poor which ranging from 17 to 11, and (4) very poor which ranging from 10 to 5. In this study, the calculation is done by multiplying the score with 4 (score x 4) as to get 20 as the lowest score and 100 as the perfect score.

In accordance with the result of students' writing on the pilot test, students in two treatment groups in general outperformed the control group which not given any feedback in terms of language use (word function, tense, articles, pronoun, preposition and subject-verb agreement) on the revised drafts compared to the first draft. The two experimental groups made improvement upon receiving teacher electronic feedback. The score in the experimental group 1 improved: student 1 from 68 to 88 and student 2 from 60 to 80 in essay 1 revised draft 2 and improved from 68 to 80 and 60 to 72 in essay 2. The score in the experimental group 2 improved: student 1 from 72 to 96 and student 2 from 68 to 92 in essay 1 revised draft 2 and improved from 72 to 88 and 68 to 80 in essay 2. These results may be clarified that there was a tendency that teacher electronic feedback could improve students writing especially in multiple revisions.

Furthermore, observation made from this pilot test provided the researcher with some useful input that could be applied to improve the procedures in the conducting the actual study. Here are some inputs gathered from pilot study: first, the use of *comments* feature in providing the feedback caused confusion for the students who opened the file through their phone because it can only be seen through computer or laptop. Second, the online discussion held through *Edmodo* could not run as planned when the teacher use English since students found difficulties to express their opinion freely using English. The last one, focus to be corrected from students' essay need to be decreased as language use covered more than 5 focuses (complex construction, subject-verb agreement, tense, number, word order/function, articles, pronoun and prepositions). Students were having overload input as they could not learn about particular aspects intensely. These inputs from pilot test were applied by researcher to improve the procedures in conducting study.

b. Conducting the study

After conducting the pilot test, the instrument was given to the three groups. Each group went through four stages of activities which consisted of writing two different essays. The first three stages involved writing the draft of the first essay (Essay 1), revising draft 1 (Revised Draft 1), and revising draft 2 (Revised Draft 2). Teacher feedback was applied to the draft of the first essay (Essay 1) and revised draft 1. The fourth stage is writing a new essay (Essay 2). At this stage, the teacher did not provide any feedback to the students. The online discussion was conducted right after the teacher feedback delivered through the email. There were two sessions of online discussion, before revising draft 1 and before revising draft 2. The steps of conducting study for every group are presented in the table 3.3 below.

Steps	Experimental group 1 (Email only)	Experimental group 2 (Email & <i>Edmodo</i>)	Control Group (no electronic feedback)
1 st	Students receive teacher's email consists of direction to write essay	Students receive teacher's email consists of direction to write essay and join <i>Edmodo</i>	Teacher asks students to write an essay in the classroom
2 nd	Students write their essay (Essay 1) and send it to the teacher email address	Students join <i>Edmodo</i> , write their essay (Essay 1) and send it to their teacher email address	Students write their essay (Essay 1) and submit the printed essay to the teacher
3 rd	Students receive their essay with feedback on it through email	Students receive their essay with feedback on it through email	Teacher praise their writing.
4 th	-	Teacher open discussion in <i>Edmodo</i> and students join the discussion	-
5 th	Students revise their essay (Revised Draft 1) and send it to their	Students revise their essay (Revised Draft 1) and send it to their teacher email	-

	teacher email address	address	
6 th	Students receive their essay with feedback on it through email	Students receive their essay with feedback on it through email	-
7 th	-	Teacher open discussion in <i>Edmodo</i> and students join the discussion	-
8 th	Students revise their essay (Revised Draft 2)and send it to their teacher mail	Students revise their essay (Revised Draft 2)and send it to their teacher mail	
9 th	Students write their new essay (Essay 2)	Students write their new essay (Essay 2)	Students write their new essay (Essay 2)

In providing feedback, teacher read students' essay and comment on their work by using *comments* feature from Microsoft word. By using the *comments* feature, teacher was able to provide both direct and indirect feedback as well as the corrective comments. The teacher was directed to focus on language use of the essay such as tense, article, pronoun, subject verb agreement and preposition.

Feedback was also delivered in the form of online discussion trough *Edmodo* platform. Teacher took several roles in this session, she opened the discussion by asking some questions related with the most common error gathered from students' essay, she guided the discussion and invited students' involvement in the discussion as giving the students chances to express their opinion. Since the layout of *Edmodo* is similar with *Facebook*, teacher could easily post the question as the topic to be discussed and students were asked to answer the question or even ask another question in the comment box. Before conducting the study, the researcher was assisted the teacher on how to provide teacher written feedback and directions on how to

provide feedback using Microsoft Word's *comments* features. The researcher was also assisted the teacher on how to use *Edmodo* as the media in facilitating the online discussion session.

The last step taken was randomly choosing the participant from the two experimental groups. The participants were taken based on their writing score in which each student will be categorized as low, medium and high. There were 12 students from both groups who got the chance to be investigated about their attitudes toward teacher electronic feedback. The interview session was carried out in order to answer the second research question about the students' attitudes of teacher electronic feedback strategies.

3.4 Data Analysis

The data taken from writing test and interview were analyzed using the procedures of both quantitative and qualitative data analysis. In details, the data analysis is presented as follows.

3.4.1 Analysis of Data from Students Writing Score

The major source of data for analysis in this study included the essay 1 and essay 2 of the students' writing. At first, to evaluate the effect of feedback on students writing, the first and second essays of students' writing were scored using the Scoring Rubric (Jacob et al., 1987). To maintain the validity of the study, there were two raters involved in evaluating the students' texts. All the two raters were English teachers who graduated from English Education Program. The selected two raters were then asked to evaluate the 90 students' essays by using the analytic writing rubrics proposed by Jacobs et al. (1981) to see students' writing quality. As there were two raters, to measure the reliability and agreement between the two raters on the scores given independently, an inter-rater reliability test was performed before running the One-Way ANOVA and paired-sample T-Test.

The students' scores gathered from pretest and posttest were then analyzed by using the statistical data computation SPSS version 20. There were two steps of statistical data analyses conducted in this study. The first one, to examine significant differences between the two experimental groups and one control group on each writing test, the one-way ANOVA test was performed. It was due to the fact that the study involved three groups into calculation.

The calculation of one way ANOVA test was aimed to examine whether at least mean score of one group is significantly different from mean score of two other groups. In the other words, it is conducted to examine whether there is an impact of teacher electronic feedback based on the result of students' writing score. This step was meant to compare how each group was different from each other on each of the writing test.

The second step of statistical data computation was done by using three paired-samples T-Test. The three paired-samples T-Test analysis was conducted to discover the differences from mean of writing quality scores of each group before and after treatments. The difference of ANOVA and paired sample t-test was on the comparison of each score of writing test across each group at the same time. ANOVA calculation provided the researcher with the result of each comparison between the score of pretest between experimental group 1 and experimental group 2, experimental group 1 and control group, and between the experimental group 2 and control group. In addition, the computations through paired sample T-Test were able to ease the researcher to compare the differences from each pair of pretest and posttest of each group without comparing the score with the other group.

3.4.2. Analysis of Data from Interview

The recorded data obtained from interview were first transcribed in order to make it precise and accurate. During the transcription process, the students' personal data were coded to protect their privacy. The data were then analyzed following framework of qualitative data analysis proposed by Creswell (2009).

The analysis was started by preparation, organization, sorting, and arranging of the data. This process involved data reduction then were displayed and read carefully to get the general meanings of the data. After the general-meaning had been gathered, the data were coded and classified into meaning units. The last step taken in analyzing the data from interview was drawing the interpretation of the whole data and relates the findings to the theoretical background of the study.

3.5 Concluding Remark

This chapter has discussed the methodology of the study that used experimental method research design. The data were collected through writing test and interview. The data were then analyzed under the theory of the implementation of electronic feedback and students' writing.