

CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses the research methodology. In detail, it presents research question, research design, hypothesis, population and sample, data collection and data analysis.

3.1 Research Questions

The research questions of this research are:

1. Can portfolio improve students' vocabulary mastery?
2. How is the use of portfolio perceived by students?

3.2 Research Design

This research used quasi-experimental design because the sample was chosen purposively. In line with that, this research deals with the most of complicated human behaviors, language learning and language behaviors as variables that could not be controlled (Hatch and Farhady, 1982:23).

There were two variables investigated in this research, they are; variable X and variable Y. Variable X is using portfolio as independent variable and variable Y is the students' vocabulary mastery as dependent variable. This research is designed as follow:

Table 3.1
The Experimental research

Group	Pre-test	Treatment	Post-test
Experimental group	Y ₁ E	X	Y ₂ E
Control	Y ₁ C	-	Y ₂ C

Where

Y₁E : The pre-test of experimental group.

Y₂E : The post-test of experimental group.

X : The treatments (Using portfolio)

Y₁C : The pre-test of control group.

Y₂C : The post-test of control group.

3.3 Hypothesis

Null hypothesis was used in this research. The null hypothesis is stated as:

$$H_0: \mu_{\text{experimental}} = \mu_{\text{control}}$$

Since the actual population means would not be used, the null hypothesis is stated in terms of the sample means:

$$H_0: \bar{x}_1 = \bar{x}_2$$

(Coolidge, 2000:98)

The null hypothesis is: There is no significant difference between the posttest means of experimental and control groups after treatments. It is chosen because there is no specific research which discussed about the use of portfolio in improving students' vocabulary mastery.

3.4 Population and Sample

The population in this research was the students of tenth grade of one of Senior High School in Bandung which consists of ten classes from X-A until X-J. However, the sample was one class as experimental group and one class as control group. The sample was selected purposively due to the limited time and cost.

Class X-F was the experimental group, while class X-H was the control group. Both groups were selected based on the result of pretest that showed homogeneity and distributed normally. Moreover, both classes were chosen based on teacher's suggestion about students' characteristics and ability in learning English that showed similarities. Class X-F consists of 34 students while class X-H consists of 35 students. However, there were only 30 students who were selected as sample from each class because some other students did not take pretest.

3.5 Data Collection

The data in this research were gathered by administering some instruments. The instruments that have been applied were adjusted based on research needs in order to answer the research questions. However, before making pretest and posttest questions as the first instrument, try out test was made and administered first. It was done in order to get valid and reliable questions for pretest and posttest (Arikunto, 2008:64).

Try out test was done twice to 70 students in the tenth grade besides experimental and control group. It was done on Monday, April 19th 2010 and

Monday, June 21st 2010 to some students in public senior high school in Bandung and Tasikmalaya. Try out test question could be seen in Appendix 1.1. The assistance of ANATES V4 was used in calculating the data of try out test. The calculation of try out test could be seen in Appendix 5.1.

After getting the valid and reliable questions from try out test, pretest and posttest questions were decided. Pretest was administered to 60 students in two classes on Thursday, October 14th 2010 before deciding experimental and control group. The questions of pretest could be seen in Appendix 1.2. After conducting pretest and the result for both classes were homogeneous and normally distributed, then both classes could be decided as experimental group and control group.

Moreover, after deciding experimental and control group, the treatments were held only to experimental group by implementing portfolio during teaching and learning process. The treatments were held from October 15th 2010 to November 12th 2010. It was done twice a week that consisted of 90 minutes per meeting on Thursday and 80 minutes per meeting on Friday. The treatments had been planned and it was realized in form of lesson plans. The lesson plans could be seen in Appendix 2.1. The treatments that had been done were as follow:

Table 3.2
Treatments schedule

No.	Experimental Group	Date	Control Group	Date	Topic
1.	First meeting (First treatment by applying portfolio)	Friday, October 15 th 2010	First meeting (Conventional method)	Tuesday, October 19 th 2010	Let's write the story! (Narrative text)
2.	Second meeting (Second treatment by	Thursday, October	Second meeting (Conventional	Thursday, October	Knowing narrative

	applying portfolio)	21 st 2010	method)	21 st 2010	story from Indonesia. (Narrative text)
3.	Third meeting (Third treatment by applying portfolio)	Friday, October 22 nd 2010	Third meeting (Conventional method)	Tuesday, October 26 th 2010	Local and abroad narratives. (Narrative text)
4.	Forth meeting (Forth treatment by applying portfolio)	Friday, October 29 th 2010	Forth meeting (Conventional method)	Tuesday, November 2 nd 2010	Let's have writing workshop! (Narrative text)
5.	Fifth meeting (Fifth treatment by applying portfolio)	Thursday, November 4 th 2010	Fifth meeting (Conventional method)	Thursday, November 4 th 2010	Offering something to somebody. (Procedure text)
6.	Sixth meeting (Sixth treatment by applying portfolio)	Friday, November 5 th 2010	Sixth meeting (Conventional method)	Tuesday, November 9 th 2010	Becoming a chef. (Procedure text)
7.	Seventh meeting (Seventh treatment by applying portfolio)	Thursday, November 11 th 2010	Seventh meeting (Conventional method)	Thursday, November 11 th 2010	Let's express the imperative! (Procedure text)
8.	Eighth meeting (Eighth treatment by applying portfolio)	Friday, November 12 th 2010	Eighth meeting (Conventional method)	Tuesday, November 16 th 2010	Let's listen to make something! (Procedure text)

During class session, students were asked to make portfolio. It consisted of collection of their works which were made per meeting. Each meeting, they were asked to do at least one assignment. Peer correction was done to check those assignments. The assignments were various. It was appropriated with the material given per meeting.

In addition, portfolio made by students also consisted of learning journal. It was made by them after the class session. On learning journal they wrote their experiences during teaching and learning process, gave comment on teaching and learning process, gave suggestion for the next meeting, reviewed last lesson, and practiced to write new vocabularies. They made learning journal in a book which was covered by the same wrapping paper book.

Moreover, name tag was also a part of students' portfolio. They made big font triangle name tag with their names on it. By name tag, teacher recognized who gave participation actively in class during class session. Furthermore, at the back of it, students had list of participation. Thus, they could write their participation on it. In the end of each meeting, students got signature from the teacher as a proof that they participated actively in class.

Additionally, students also wrote about what document included in portfolio and what assignments that had been done on list of document content. It was aimed in order to note and take into account anything that had been done.

Furthermore, students also had self assessment in portfolio. In self assessment, they should draw happy face on stars if they agreed with the statements given. However, they should draw sad face on stars if they did not agree with the statements given. Then, they wrote new vocabularies they got during class session on the list of vocabulary in self assessment form. They were provided 25 numbers of vocabularies that should be written. Thus, students were motivated to remember and review what new vocabularies that had been conveyed in class. The vocabularies were focused on action verbs.

Moreover, in the end of treatment, students filled best work form. On this form, students wrote about what best thing they have ever done or made during making portfolio. The example of students' portfolio could be seen in Appendix 7.

In addition, during class session, students were observed. The observation was done in order to get additional information about students' interaction during class session and how portfolio works. The result of observation in form of field note could be seen in Appendix 5.6.

After holding treatments, the next step is administering posttest. It was given to experimental and control group. Posttest questions were the same as pretest questions. It was given to both groups on Thursday, November 18th 2010.

Posttest was held in order to see whether or not the treatments in experimental group by using portfolio give progress to students' vocabulary mastery in writing skill, cause them to have higher scores than the control group. The questions of posttest could be seen Appendix 1.3.

The second instrument that was used to gather data from the research was questionnaire. It was administered only to the students in experimental group who had received the treatment. The questionnaire consists of 28 items which divided into five categories, those are; Students' Expectations toward English learning, Students' Expectations toward vocabulary learning, Students' Expectations toward Writing Skill, Students' Responses toward Portfolio Assessment and Students' Responses on Applying Portfolio in Improving Students' Vocabulary Mastery in Writing Skill.

Questionnaire was given to students in experimental group on Thursday, November 18th 2010. Items of questionnaire could be seen in Appendix 1.5.

The last instrument used in this research was interview. It was used in order to gather additional information to complete the data collected. By having interview, respondents or students could add information about their experiences during the implementation of portfolio in class.

The interview was conducted on Friday 19th of November 2010. It was done informally to 30 students who became the sample of the research in groups. The students were divided into 6 groups that consist of 5 students. The interview questions could be seen in Appendix 1.6.

3.6 Data Analysis

In this part, the data gathered from pretest, posttest, questionnaire, and interview will be discussed further. The data were analyzed and interpreted as the result of the research.

The first data gathered from pretest and posttest instruments. The result of pretest was calculated to find homogeneity of variance and normality distribution. Moreover, after finding homogeneity of variance and normality distribution *t*-test for pretest was calculated. Then, both group tested by pretest declared as equal group and chosen as experimental and control group. Meanwhile, posttest were analyzed by using *t*-test formula after homogeneity of variance and normality distribution met. Homogeneity of variance and normality distribution should be calculated first before conducting *t*-test computation. SPSS version 16.0 for

windows was also used as assistance to do the calculation. The Kolmogorov-Smirnov test in SPSS version 16.0 for windows was used in analyzing the normality of data distribution. Meanwhile, the Levene's test for equality of variance in SPSS version 16.0 for windows was also used in analyzing the homogeneity of variance. Data analysis for pretest could be seen in Appendix 5.2, while for posttest in Appendix 5.3. In addition, dependent *t*-test of experimental group was also calculated in order to compare the mean scores of the same group before and after treatment (Fraenkel and Wallen, 1990:230)

The second data gathered by observation. It was done in order to get additional information about students' interaction during class session and how portfolio works (Fraenkel and Wallen, 1990:440). The result of observation was analyzed by using theory of portfolio proposed by Dellinger (1993).

The third data gathered from questionnaire. It was calculated and interpreted into percentage. Moreover, it was analyzed by comparing the result of questionnaire with the theory from Dellinger (1993) which states that portfolios increase the quantity as well as the quality of writing and contribute to students' cognitive development. The theory is also supported by O'Malley and Pierce (1996) which stated that portfolio makes use of students' prior knowledge, experience, and interests and supports active construction of knowledge. It also provides meaning and purpose for learning and engages students in social interaction to develop both oral and written language. Data analysis for questionnaire could be seen in Appendix 5.5.

The forth data gathered from interview. The data were compared to the result of questionnaire. Then, they were analyzed by using theory from Dellinger (1993) which states that portfolios increase the quantity as well as the quality of writing and contribute to students' cognitive development. The result of interview could be seen in Appendix 5.6.

