CHAPTER III
RESEARCH METHODOLOGY

This part includes the methodology of the research, which discusses the research method, research design, hypothesis, population and sample, instruments, the data collection, description of the data analysis, clarification of terms and concluding remarks.

3.1 Research Method

This study was conducted to investigate the effectiveness of Total Physical Response method in teaching vocabulary in one of elementary schools in Bandung. Therefore the experimental method was used to answer the research questions.

The experimental method is a systematic and scientific approach to research in which the researcher manipulates one or more variables and control, and measure any change in other variables. Therefore this study involved two groups: control and experimental groups.

During the experiment process, this study would use TPR treatment in the experimental group in order to prove the effectiveness of TPR method in teaching vocabulary in the third grade students of an elementary school.

This study used quantitative and qualitative approaches. A quantitative approach was used to answer the first question whether TPR method was effective or not. Besides, to observe the students’ responses toward TPR method this research used the interview method. The interview as a qualitative approach was used to obtain information on students’ perception about TPR method which had been given by the researcher during the treatment process.

3.2 Research Design

The study used a quasi-experimental non equivalent pre-test-post-test control design. As Brown (1988) states that a quasi-experimental study is a type of evaluation which aims to determine whether a program or intervention has the intended effect on a study’s participants. A quasi-experimental design is one of the experimental designs in which we compare means of groups’s performance. Neither the experimental nor the control group was randomly chosen because individuals naturally belong to one group or the other. A quasi-experimental design is also called ‘naturally occurring group design. The reason for choosing this design was the population did not consist of individuals but groups of individual or cluster, so that students were not randomly chosen and assigned to the group. Best (1981:73) states that the experimental non equivalent pretest-posttest control design is often used in classroom experiments when experimental and control groups were such naturally assembled group as intact classes which maybe similar. Through this design, the sample was taken from two available classes (intact), each class was assigned as experimental and control groups.
A pre-test and a post-test were administered to both group. After the pre-test was administered and there was no difference of mean statistically between two groups or equivalent based on the calculation by using t-test, this research conduct Total Physical Response method as a treatment in several meetings to the experimental group. The vocabulary materials given to both groups were similar. In the experimental group, the teacher used Total Physical Response method.

3.3 Variable

This study measured whether Total Physical Response method as independent variable was effective in teaching vocabulary to the third grade students of an elementary school or not. The effectiveness could be seen from the improvements of students’ vocabulary mastery in the experimental group.

The second variable was dependent variable. The dependent variable was the variable that the researcher would observe or measure. The Dependent variable in this research was the improvement of young learners’vocabulary mastery as measured by the scores from the pre-test and the post-test.

3.4 Hypothesis

This study used null hypothesis (H0) as its foundations. The null hypothesis means that there was no relationship between the independent variable and the dependent variable (Coolidge, 2000: 95). It means that there was no difference between the two classes’ means, experimental class and control class (Coolidge, 2000: 98). It was believed that the control group and the experimental group were similar.

Coolidge (2000) stated that if research uses the null hypothesis, two possibilities of the research can be shown as follows: (1) if the hypothesis is rejected, it means that the experiment works, (2) if the hypothesis is accepted, then the experiment does not work.

In conclusion, the hypothesis of this study: there was no difference of student’s vocabulary mastery between the students who receive experimental treatments and the students who did not receive any experimental treatments.

3.5 Population and Sample

3.5.1 Population

Population of this study was the third grade students of an elementary school in Bandung. This study decided to take the third grade students of an elementary school because they had learnt English and they were still learning basic vocabulary. In this stage, the students need guidance and learn language with appropriate method matches their cognitive stage. During
the implementation of the Total Physical Method, they learned in fun and easy way without being forced.

The characteristic of populations were:

1. The students were native Indonesian
2. The students study English as a local subject
3. The students’ age was around 8-9 years old
4. The students have never attended any English course
5. The students only learned English at school

3.5.2 Sample

Sample could be stated as a small group that is investigated. The sample of this study was the third grade students of an elementary school in Bandung. Sample that represented those characteristic above was selected through purposive sampling. Purposive sampling was a sample selected because the individuals have special qualification of some sort (Franklen and Wallen, 1990:84). The qualifications that researcher saw from the sample were the following: (1) they had learned English before, (2) they were accustomed to learning vocabulary through translation method and memory strategy, and (3) they only learned English at school. The sample of this research was two classes of the third grade; each of them consists of 20 students. 3A class was the experimental group which received experimental treatments and 3B was the control group which did not receive any experimental treatments. The research was conducted in early 2013.

3.6 Research Procedure

There were some procedures conducted in the research. The first step was preparing and organizing teaching procedure by using TPR method in teaching vocabulary to the experimental group. The main components in this step were material and activities that would be applied in the classroom. Those procedures were aimed to improve students’ vocabulary in the end of their learning process.

The second step was constructing and trying out the instrument to find out the validity and reliability of the test. The try out test was carried out in a class that was in the same grade with the control and the experimental groups. The instrument used in this research was vocabulary achievement test.
The third step was administering a pre-test to the experimental and the control groups to find out students initial ability. Fourth was organizing lesson plans in teaching vocabulary for the experimental class. Fifth was conducting a post-test to both groups to measure their abilities after treatment.

The last procedure was administering the interview to the experimental group to know students’ responses toward TPR method in learning English vocabulary. After all procedures were conducted, the data collected from the pre-test, the post-test and the interview were further analyzed. Reflecting from the result of data analysis, some conclusions and suggestions were then drawn.

3.7 Research Instruments and Data Collected

In the purpose of gaining data related to the research problems, there were two kinds of instruments used in this research, namely multiple choice test and interview. The multiple choice test was used to answer the first research question about the effectiveness of TPR method and the interview was used to support the data about students’ responses toward TPR method. The data collected from the try-out test, the pre-test, the treatment, the post-test and the interview would be elaborated further in the following sections.

3.7.1 Try Out Test

The try-out test was administered to examine the feasibility of the instrument before it was carried out for the pre-test and the post-test. The tests were validity and reliability. There were 30 questions related to subject and they were distributed to twenty students of the third grade of an elementary school in Bandung. The try-out test was conducted on January 9th 2013 before the treatment was applied. The students were selected from another school at the same level.

3.7.2 Pre-Test

A pre-test and a post-test of the research were conducted in the form of multiple choice. The tests were used to measure the effectiveness of Total Physical Response method in teaching vocabulary in the third grade of an elementary school in Bandung.

A pre-test was implemented in order to obtain the data of students’ vocabulary knowledge. It was used to measure the initial ability of young learners before they received any experimental treatment. The test was given to the experimental and the control groups without any information before.

The pre-test sheets consisted of 30 items measured student’s ability of using vocabularies related to the themes that would be taught. The researcher used multiple choice because it was easy to analyzed and suitable for students in the third grade of elementary school. Furthermore, some items were put together with pictures to avoid misunderstanding.

3.7.3 Treatment
The treatment for the experimental class used Total Physical Response as the teaching methodology. It also used some songs and pictures as the media in teaching vocabulary. However, the control group did not get any special treatment to learn the same material.

The treatment was conducted in five meetings. It took place from 23 February to 23 March 2013. The Duration of each meeting was 60 minutes. The topics were vocabulary about part of body, numbers, colours, fruits and things in the classroom.

3.7.4 Post-Test

After all treatments were conducted, the post-test was administered to the control and the experimental groups. The scores from the post-test were used to measure whether the implemented method influenced the experimental group or not. The test was conducted on March 2013. The post-test contained thirty multiple choices questions. Form and the indicators of the questions were similar to the pre-test questions.

3.7.5 Interview

The interview was aimed at finding the students’ response toward the implementation of the method. As Alwasilah (2006) states that the deep information that might not be acquired from documents could be obtained by interview. The data from students’ interview was used to strengthen the data taken from the scores of pre-test and post-test. The interview was conducted to 20 students in the experimental group. They were interviewed individually with some questions. The questions were whether they like English or not, their response about TPR method, the topics that students liked the most and their reasons whether they liked the method or not.

3.8 Data Analysis

3.8.1 Tryout Test

In order to make sure that the instrument was valid and reliable, items that would be used as the instruments research and the obtained data from tryout test should be analyzed. Therefore, instrument validity and reliability were very essential in the research.

a) Instrument Validity and Reliability

Validity was the most important idea to consider when preparing or selecting an instrument to use (Fraenkl and Wallen, 2006:150). Validity of a test is used as a measurement in order to figure out how a test runs as its function. A test is considered as valid if the content and the format of the test are familiar for the students, and the test measure what it should be measured. Moreover, this research used Pearson product moment correlation to determine the validity of each instrument items.

Reliability test is used to measure an instrument in order to figure out whether the instrument can be used as measuring tool or not whenever the instrument is used. In order to find how
reliable the test instrument was, this research used Spearman – Brown formula to investigate the reliability of the instrument.

b) Try-out Test Data Analysis

In attempt to measure the appropriateness of the pre-test in terms of validity and reliability, the try-out test was administered to a class different from the control group and the experimental group which was at the same level, on January 7th, 2013. There were 20 students who participated in try-out test. Thirty multiple choice questions were administered to the students.

Validity Test

Validity test was conducted on the try-out test to find out the characteristics of the instrument before administering the pre-test. After that, the data gathered from the tryout test were calculated by using SPSS 17 for windows.

The results showed that there was no difficulty during the try-out test. Students’ responses to the instructions were good and appropriate with expectation. Therefore, the try-out test was clear and appropriate for the pre-test.

The result showed that the raw score of validity was 0.043. The results from statistical computation on the try-out test showed that from 30 multiple choices questions, there were 25 questions valid and could be used as research instrument because their raw score was higher than 0.043. Meanwhile, the rest of 5 questions were not valid and could not be used as the research instruments because their raw scores were lower than 0.043.

Reliability Test

In present study, reliability of an instrument is analyzed by using Cronbach’s alpha formula in SPSS 17 for windows. Respondents’ correct answer was given one (1) score and the incorrect answer was given zero (0) score.

The reliability of the items from Cronbach’s alpha calculation was 0.884 with the total items 30. It can be assumed that the test items had a very high reliability and could be used as the research instrument since the level alpha was between 0.07-1.00.

3.8.2 Pre-Test and Post-Test Data Analysis

Before the data of the pre-test and the post-test were analyzed, the descriptive statistic analysis was conducted. The descriptive statistic analysis captures general information of the data such as mean and variance. SPSS 17.0 for windows was employed to compute the analysis.

A pre-test was held after the analysis of the instrument showed the result of feasibility. The pre-test was conducted in both the control group and the experimental groups. As the first
step in analyzing the pre-test data, normality distribution test is conducted. When the data analyzed are normally distributed, homogeneity of variance test is employed. From the homogeneity test, variance of both groups could be seen, whether they are homogenous or not. When the result is homogenous, independent t-test is employed. When the data are not homogenous, dependent t-test is conducted.

When pre-test data are not normally distributed, to find out the initial ability of the control group and the experimental group, a non-parametric test is conducted. When the result of Mann-Whitney U test shows the ability of both groups is equal, the raw score of the post-test can be analyzed. However, when the Mann-Whitney U test of pre-test data show the ability of students is not equal, the post-test score must be converted into the normal gain before it is analyzed.

The measurement of normality distribution test, non-parametric test, the homogeneity test, the independent t-test and the dependent t-test were administered by employing SPSS 17.0 for windows.

a) Data Analysis on Pre-Test

A pre-test was aimed to know the initial ability of students and the initial equality between the groups was measured by using Independent t-test formula.

Coolidge (2000: 143) assumed that there were three points that should be considered in using t-test:

1. The participant must be different in each group.
2. The dependent variable should be normal and the variance was homogenous.
3. The scores on the independent variable were continuous. Consequently, normality distribution test was conducted before calculated the data using t-test formula.

b) Calculation of the T-Test

Here are the steps of the t-test calculation:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test)
2. Finding t value using independent t-test formula.
3. Comparing the t-value with the level of significance for testing the hypothesis.
4. If the t value does not exceed the level of significance, the null hypothesis was retained. Therefore, the two group means were equivalent.

c) Data Analysis on Post-Test
Data Analysis on the Experimental and the Control Group Scores

Matched t-test formula was used to investigate the significance of the mean difference between pre-test and post-test means (Coolidge, 2000:156). Here were the steps:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test).
2. Finding t value using matched t-test formula.
3. Comparing the t value with the level of significance for testing the hypothesis.
4. If the t-value was bigger than level of significance, the null hypothesis was rejected. Therefore, there was significant difference between the pre-test and the post-test means.

3.9 Concluding Remarks

This chapter has presented the methodology used in this research, including the research method, the research design, hypothesis, population and sample, instruments, the data collection and description of the data analysis. A quasi experiment was employed as the research design and the data used in this research were collected from two classes known as the experimental and the control groups in the third grade of an elementary school in Bandung where this research was conducted. The data were analyzed by statistical computation using SPSS 17 for windows. The result of this chapter will be elaborated in chapter IV.