

## **Chapter Three**

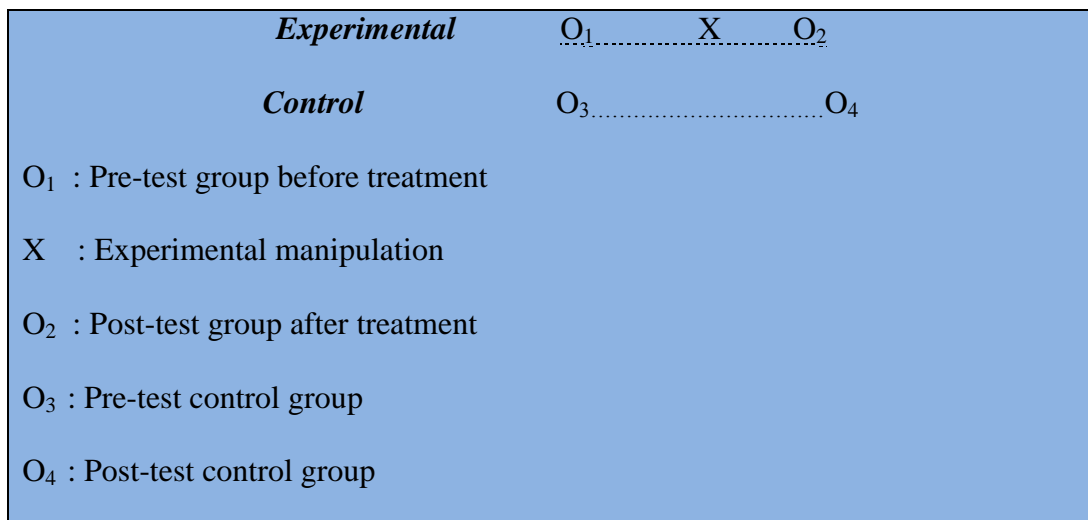
### **Research Methodology**

This chapter presented research method, research design, the population and the sample. This chapter also explained the instrument of the research. The researcher discussed the data collection and the technique of the data analysis.

#### **Research Design**

The researcher used an experimental research under quantitative approach. Cohen, Manion and Marrison (2011) stated that experiment design is making a change in the value of one variable. The researcher did an experiment because the researcher wanted to ascertain the use of English song in improving students' vocabulary and to know the differences of the results before and after the treatment. Besides, based on the researcher's observation in SMP Muhammadiyah 2 Yogyakarta, English teacher did not use English song as learning media. Thus, the researcher was eager to do the experiment in using English song in SMP Muhammadiyah 2 Yogyakarta.

The researcher chose quasi-experiment in this research. The quasi-experiment is usually used in education and social setting (Cohen et al., 2011). From the quasi-experiment, the researcher chose pre-test post-test non-equevalent group design. The researcher used pretest post-test non-equevalent group design because the researcher wanted to compare the experimental group and control group.



*Figure 2. Equivalent pre-post-test*

Based on the figure above, *Figure 2* is the illustration of pre-test post-test non-equivalent group according to Cohen, Manion and Morrison (2011). The researcher used two groups which are experimental group and control group. In this section the researcher gave a pre-test and post-test to the experimental and the control group. The pre-test was used to know the prior knowledge of students and the post-test was used to know the students' improvement. In experimental group, the researcher used English song as a treatment. The pre-test was conducted before the experiment and the post-test was conducted after experiment. In control group, there was no treatment, but the pre-test was distributed in the beginning of the lesson and the post-test was distributed at the end of the lesson.

### **Research Setting**

There are two reasons why the researcher chose SMP Muhammadiyah 2 as Yogyakarta. Firstly, the researcher taught English in internship program at SMP Muhammadiyah 2. Secondly, when the researcher taught in SMP Muhammadiyah

2, the researcher found that the students had sufficient vocabulary knowledge. That is why the researcher wanted to do experiment in SMP Muhammadiyah 2 Yogyakarta to help the students improve their vocabulary. Thirdly, due to the accessibility, the researcher already knew the English teacher there, so it made the researcher complete the research's procedure easily. Then, the researcher collected data on June-July 2017.

### **Population and Sampling**

The population includes people being studied in this research. In this research, the population were eight grade students of SMP Muhammadiyah 2 Yogyakarta. There are eight classes in eight grades in SMP Muhammadiyah 2 Yogyakarta. The researcher chose eight grades because the researcher only has access for the eighth grades.

In this research, the researcher used purposive sampling. According to Cohen et al. (2011), purposive sampling is chosen in specific purposes, for example, to achieve representativeness, to focus on specific, unique issues or cases. The researcher selected the samples using simple purposive sampling from target population who were students of eight grade class. In addition, the researcher chose VIII B class as the experimental group and VIII C class as the control group. The classes were suggested by English teacher in the school, the teacher thought that VII B and VII C need to improve their vocabulary. Experimental group was VII B class which consists of 25 students. Control group was VII C class which also consists of also 25 students. Therefore, the total of the samples were 50 students.

## **Research Instrument**

In this research, the researcher used vocabulary test as the research instrument. The test adopted from Suherman (2016). The objective of the test was to find out how well the students have mastered the vocabulary. The test includes noun test, adjective test and verb test but there is no adverb test. The test focused on content words because it is the basic part before learning grammar. Besides, the test was already used to test students' vocabulary at SMP Muhammadiyah 3 Bandar Lampung and has already checked the validity and reliability. Therefore, this test was used to obtain the effectiveness of using English song to improve students' vocabulary knowledge in eight grade of SMP Muhammadiyah Yogyakarta in experimental and control group.

## **Technique of Data Collection**

In this study, there were four steps in collecting the data. Those are regarding research permit, selecting participants, pre-test, and post-test. In this study the researcher did pre-test before giving a treatment. After giving the treatment, the researcher decided to do post-test. Then, the results from the pre-test and post-test were examined to see their level achievement after giving the treatment.

**Research permit.** Before the researcher did the experiment at SMP Muhammadiyah 2 Yogyakarta, the researcher needed research permits. There are three institutions that the researcher should ask permission. The first was from the researcher's university namely English Education Department of UMY, the second was from SMP 2 Muhammadiyah Yogyakarta and the last was from

*Pimpinan Daerah Muhammadiyah Yogyakarta (Yogyakarta Muhammadiyah Regional Office).*

**Pre-test.** The researcher gave pre-test to experimental and control group. Pre-test was the vocabulary test given to the students before treatment in experimental group in the first meeting. In control group, the pre-test was also conducted in the beginning of the meeting, but there was no treatment in control group. After that, the researcher obtained vocabulary test scores from experimental and control group.

**Treatment.** The treatment was held on June until July 2017. The researcher gave the treatment four times. The lyric song was used in the treatment and in the learning, but the word choices are different in the post-test. However, the word choices in the test were about noun, adjective and verb but had different words from the lyrics. Besides, there were four meetings to do the experiment. The researcher did the treatment in four meetings because the researcher thought that four time meetings were enough to see the students' improvement. From four meetings, the researcher used 90 minutes to teach English to the students in classroom. The researcher then prepared the lesson plan before teaching.

**Experimental group.** Based on the lesson plan, in the first meeting in experimental group, the researcher taught about 'noun' using English song. In the beginning, the researcher asked the students to listen to the song. After that, the researcher gave the lyrics on the paper. The students listened to the song while reading the lyrics. After listening to the song while reading the lyrics, the researcher asked them to circle which 'noun' words from the lyrics that they read

and listened. In the second meeting, the researcher taught about 'adjective'. The steps were the same that the researcher asked them to listen to the song and read the lyrics. The students searched 'adjective' words from the lyrics that they did not know the meaning. In the meeting third, the researcher taught about 'verb'. The researcher then gave a video lyric, so the students watched it in the screen. In the last meeting, the researcher reviewed the lesson from the first meeting. After that, the researcher gave a test to examine the students' vocabulary knowledge. Besides, the researcher gave exercises in every meeting after the researcher taught the subject.

**Control group.** In the first meeting in control group, the researcher taught the same subject about noun, adjective and verb. The difference was that there was no treatment using English song in this group. The researcher used a common method in teaching by giving the materials in a word list. In every meeting, the researcher wrote and explained the words in whiteboard and the researcher asked the students to memorize it. The researcher also gave the reviews in the last meeting and gave exercises in every meeting.

**Post-test.** After doing the treatment, the researcher did a post-test in experimental group. Control group also received a post-test. From the post-test, the researcher received vocabulary test scores from each group.

### **Validity and Reliability**

**Validity.** According to Oliver (2010), validity is a must requirement for a research. The test in this study was adopted from Suherman (2013). To achieve the validity, Suherman (2016) used content and construct validity. Suherman

(2016) used content validity to ascertain the test is sufficiently, representative and comprehensive. Suherman (2016) also used construct validity to measure the students' vocabulary achievement. Therefore, the researcher decided not to test the validity.

**Reliability.** Reliability according to Garson (2002) is to measure the extent of the item, scale or instrument which has a same score. In reliability, Suherman (2013) used Cronbach Alpha using SPSS program version 19 to estimate the reliability of the test. The result from reliability test was 0.98 which was categorised to 'highly reliable'. Since the reliability test was done by Suherman (2013), the researcher decided not to test the reliability as well.

### **Data Analysis**

In the recent research, the researcher used descriptive statistics and inferential statistics. In descriptive statistics, the researcher used the mean score to answer research question number one and two. In inferential statistics, the researcher used normality test, homogeneity test, and paired samples t-test.

**Descriptive statistics.** To answer the first and second research questions, the researcher used descriptive statistic. Descriptive statistics is a description of the data including frequencies, measures of dispersion, measures of tendency, standard deviation, cross-tabulation and standardized scores (Cohen et al, 2011). The researcher analysed the results from the vocabulary pre-test and post-test of control and experimental group by presenting the frequencies, percentages, mode, mean, minimum, and maximum of the data.

**Normality.** In inferential statistics, the researcher has to do assumption test which is normality test. Normality test was used to determine whether sample data has been drawn from a normally distributed population (Cohen et al 2011). The researcher then used Kolmogorov-Smirnov test to know whether the data are normally distributed. The researcher looked at the significance value ( $\alpha$ ). The data distribution will be normal if the significance value is higher than significance level ( $\alpha > 0.05$ ).

**Homogeneity.** Homogeneity is used to describe the properties of a dataset or several dataset. The researcher used One-Way ANOVA in a statistical package for the social sciences (SPSS) version 20 to know whether the data are homogenous. The researcher looked at the significance value ( $\alpha$ ). The data distribution is homogeneous if the significance value is higher than significance level ( $\alpha > 0.05$ ).

**Inferential statistics.** To answer research question three, the researcher used the t-test for related samples (paired samples t-test). Paired samples t-test is used to test the means of two variables in the same group. The variables are pre-test and post-test. In other words, the test is used to see whether the means of pre-test and post-test has significant difference. The researcher looks at the result of paired sample t-test by t-value and significance value. T-value should be higher than t-table, and the significance should be less than significance level ( $p < 0.05$ ). Then, hypothesis is accepted. These results indicate that there is a difference between experimental and control group.