CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the researcher is going to explain some points related to the research methodology. It covers the research design, subjects of study, research instrument, the data collection technique, and the data analysis technique. Each point will be presented as follow.

3.1 Research Design

Before conducting the research, it is important to understand the purpose of research design. According to Creswell (2012: 20), research designs are “…the specific procedure involved in the research process: data collection, data analysis, and report writing”. In other words, research design is the researchers’ way to arrange the conditions for collecting the data, analyzing the data, and reporting the result of the research in written form. In this research, the researcher decided to use experimental design to investigate whether or not English pop songs affected students’ vocabulary mastery at SMP PGRI 2 BATU. According to Creswell (2012: 294), “an experimental design is the traditional approach to conducting quantitative research”. In other words, to accomplish a quantitative research, it is needed to use an experimental design.

When conducting an educational research, it is not always possible to select or assign subject at random. The use and applications of various experiments depend on the type of design used. In the case of this research, the researcher decided to use quasi-experimental research because the availability of participants were limited and the number of population in the school was appropriate with the number of sample expected by researcher. Moreover, the researcher decided to choose quasi experimental design because the participants were organized well in the class where
randomization was not possible. According to Creswell (2012: 309), “quasi-experiments include assignment, but not random assignment of participants to groups”.

In this research design, there were two intact groups of classes involved. The researcher gave different treatment to both groups, the first group was experimental group which used English pop songs, while the second group was control group which did not use English pop songs. The table of quasi-experimental designs could be illustrated as follows.

**Table 3.1 Quasi Experimental Design**

<table>
<thead>
<tr>
<th>Group</th>
<th>Test</th>
<th>Treatment</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>Pre-test</td>
<td>Experimental treatment</td>
<td>Post-test</td>
</tr>
<tr>
<td>Control Group</td>
<td>Pre-test</td>
<td>Common treatment used by teacher</td>
<td>Post-test</td>
</tr>
</tbody>
</table>

3.2 Population and Sample

3.2.1 Population

The next step of research process is to decide the subjects or students of the school to be included as the population and sample. According to Ary (2010: 148), population is defined as all members of any well-defined class people, events, or objects. Hence, the population in this research was all of the second grade students of SMP PGRI 2 BATU consisting of 62 students of three classes.

3.2.2 Sample
Sample is a portion of a population (Ary 2010: 148). It means that sample is a part of population that will be observed. The researcher used cluster sampling in the experiment. Cluster sampling is sampling which is not individual but a group of individuals who are naturally together (Ary. 2010: 154). The researcher took only two classes as the samples in this research. The first class was class A as the experimental group and class B as the control group. The two classes used by the writer have been representing the three existing classes. In addition, the researcher took only class A and B because based on the result of the test in that school, these two classes gained similar average achievements. In which the each class consists of 20 students. Class 8A was chosen as the experimental group which was taught using English pop songs while class 8B was chosen as the control group which was taught using non English pop songs.

3.3 Research Instrument

A proper instrument is important for a researcher in doing a research before collecting any data. According to Ary (2010: 200), “selecting appropriate and useful measuring instruments is critical to the success of any research study.” It means that appropriate and useful instrument is needed in doing a research. Moreover, the instrument itself will show whether it works well or not. In the case of this research, the researcher used test to be the instrument. According to Ary (2010: 201), “a test is set of stimuli presented to an individual in order to elicit responses on basis of which a numerical score can be assigned.” It means that a test is an instrument given by the teacher which aims to identify the students’ scores. In this research, the test was intended to investigate the effect of English pop songs on the improvement of students’ vocabulary mastery.
There were two kinds of test used in this research, they were pre-test and post-test. The purpose of giving pre-test is to investigate students’ vocabulary mastery and their score before applying the treatment. Meanwhile, post-test was used to find out the enhancement of vocabulary mastery and score of their vocabulary mastery after applying the treatment. In addition, both pre-test and post-test were in written form, the questions are in multiple choices and there will be questions about synonym, antonym, and (for detailed text items, see Appendix II).

3.4 The Data Collection Technique

To collect the obtained data based on the research instruments, there were some procedures as follows:

3.4.1 Pre-test

The pre-test was given to both experimental and control group in the first meeting. The pre-test was given by the researcher in order to determine or measure the intelligence level of students’ vocabulary mastery. The material of pre-test was in the written form, which contains some questions that need students’ mastery in vocabulary to answer the questions. Then, the result of pre test can show up after calculating the students’ score to identify their vocabulary mastery.

3.4.2 Treatment

In order to make the students understand well and also get new vocabulary as much as possible, the researcher gave the treatment only to the students of experimental group after the pre test was given. The treatment used in experimental group was English pop songs; the treatment was given three times during four meetings. The researcher picked Justin Bieber’s songs entitled “love yourself” from
the album “Purpose” (2016), also One Direction’s song entitled “drag me down” from the album “Made in the A.M” (2016), to be the materials. The vocabulary on the song’s lyric will be used as a new vocabulary. There were some procedures in doing treatment in experimental group such as:

First, the researcher gave the students song lyrics in paper that contained some questions about blank vocabularies, synonym and antonym. Second, the researcher played the song by using active speaker and asked the students to listen it. The students also could sing quietly while they were listening to the song. Third, the researcher asked them to answer the blank lyrics, antonym and synonym in the paper. After they finished the task, the researcher and students discussed it together. The students could also ask the difficult vocabularies on the song lyrics that they did not understand and looked for the meaning together.

In addition, the control group also was taught by the researcher but he did not use English pop songs. Different from the experimental group, the material was from teacher, but the vocabulary on the teacher’s material was changed with some of the words in the song lyrics. The researcher taught the students with conventional method, like asking the students to do the task from the material. Then, if there were some vocabularies that they did not know, the writer allowed them to open their dictionary individually. After they finished the task, the researcher and students discussed it together in order to make students understand the new vocabularies.

### 3.4.3 Post-test

After all of the materials have been taught, the researcher gave the post-test in the last meeting in order to know whether or not English pop songs enhanced students’ vocabulary mastery. The post-test was given to both experimental group and
control group. Moreover, the test was given in a written form. The students had to be able to answer the questions which contain some vocabularies that they learnt while the instruments were given. After the post-test was given, the scores from two groups were compared to determine they differ significantly.

3.5 The Data Analysis Technique

The gathered data used in order to figure out whether or not the experimental group achieved a good result than the control group on students’ vocabulary mastery of first grade at SMP PGRI 2 BATU. To deal with it, the researcher used statistic calculation through \( t\)-test formula in manual calculation and SPSS (Statistic Product and Statistic Solution). According to Ary (2010: 171), “the \( t\)-test for independent sample is a straightforward ratio that divides the observed difference between the means by the difference expected through chance alone.” There are several stages taken before calculating the data through \( t\)-test, it can be shown as follows:

1. Collecting the score of pre- test and post- test which is completed by students from experimental group and control group, then making a table score of them.
2. Determining the mean score from experimental group and control group. The formula is:

\[
\bar{X} = \frac{\sum X}{n}
\]

\( X \) : Mean  
\( \sum X \) : Variant Value  
\( N \) : Number of Individuals

3. Determining Standard of Deviation score from experimental group and control group. The formula form is:

\[
SD = \sqrt{\frac{\sum x^2}{n} - \left(\frac{\sum x}{n}\right)^2}
\]
Notes:

\( SD \) : Standard of Deviation
\( \Sigma x^2 \) : Variant Values
\( n \) : Number of Samples

4. Determining Standard of Error score from experimental group and control group.

The formula form is:

\[
SE_M = \frac{SD}{\sqrt{n-1}}
\]

Notes:

\( SE_M \) : Standard of Error
\( SD \) : Standard of Deviation
\( n \) : Number of Samples

5. Determining \( t \)-test. The formula form is:

\[
t = \frac{\bar{X}_1 - \bar{X}_2}{S\bar{x}_1 - \bar{x}_2}
\]

Notes:

\( \bar{X}_1 \) = Mean of Variable X (experimental class)
\( \bar{X}_2 \) = Mean of Variable Y (controlled class)
\( S\bar{x}_1 - \bar{x}_2 \) = Standard Error of different two means

6. Analyzing and explaining the result through calculation of \( t \)-test for independent samples.

7. Taking conclusion from the calculation of \( t \)-test independent samples to answer the statement problem.

The researcher’s assumptions of those hypotheses include:
a. If $t_o > t_{table}$, the null hypothesis (Ho) was rejected and alternative hypothesis (Hi) was accepted, it means that English pop songs enhanced students’ vocabulary mastery effectively for first grade students at SMP PGRI 2 BATU.
b. If $t_o < t_{table}$, the null hypothesis (Ho) was accepted and alternative hypothesis (Hi) was rejected, it means that English pop songs did not enhance students’ vocabulary mastery effectively for first grade students at SMP PGRI 2 BATU.

In conclusion, this chapter has already explained some points related to the research methodology, such as: research design, subject of study, research instrument, the data collection technique and the data analysis technique. The next chapter is about research findings and discussion. The researcher will answer the statement of problem that mentioned in chapter I.