

CHAPTER III

RESEARCH METHODOLOGY

This chapter contains research design, data collection, which includes technique, instrument, procedure, and data analysis. The sections are as follows:

3.1 Research Design

This type of research is quasi experimental using a one group pre-test post-test design. In this study, we used a pretest and no classroom comparison to ensure that we could determine the effectiveness and scope of impact of using mind mapping. In this study, the subjects first carried out a pretest to determine the students' initial proficiency level before learning English using songs. After the first test, the students were treated to learning English through songs. After completing "Learning English through songs", all students took a final test (post-test) to find out how "Learning English through songs" affected their learning results and the development of their personalities (Harris, 2006). Briefly, the research design used can be described as follows.

O_1 ---- X ---- O_2

O_1 : *pre test*

O_2 : *post test*

X : Treatment (English learning using songs)

3.2 Research Subject

The subject of this research is the 2nd-grade students of junior high school at SMP Negeri 2 Karau Kuala, VIII class. The class consists of 30 students. The class was chosen as the subject of this research because the students experienced some problems in learning vocabulary. The research variables contained in this research are as follows:

- a) The independent variable is the use of songs to improve students' vocabulary
- b) The dependent variable is the results of learning English through songs for 2nd-grade junior high school students at SMP Negeri 2 Karau Kuala, VIII class, for the 2022/2023 academic year.

3.3 Data Collection

Data on student learning outcomes was obtained from written tests given in the initial and final tests. The first test was carried out to determine students' initial competency regarding English song material. Then, treatment was carried out in the form of learning English using songs. Meanwhile, the final test was carried out to determine the level of progress after treatment or the effectiveness of learning English vocabulary material using songs. The same test equipment is used for initial and final testing.

3.3.1 Technique and Instrument

Data collection includes the techniques, instruments, and procedures used in the research, which will be described below. This form of experimental design is

a further development of the old experimental design, which was challenging to implement. Although this design has a control group, it does not provide complete control over external variables that influence the conduct of the experiment (Harris et al.,2006). One way to minimize problems associated with the lack of a control or comparison group is to measure the same dependent variable on a group of participants before the treatment (pretest) and after the treatment (posttest). This type of research design (referred to as a single group pretest-posttest design) is used to measure scores before and after treatment and then calculate the difference between scores before and after the test. The advantage is that we can compare post-treatment and pre-treatment outcomes for the exact measurements in the same participants. The disadvantage is that the one-group design is still standard because it does not include an untreated control group or a non-disruptive comparison group. It is susceptible to many threats to internal validity, including threats associated with observing the same participants over time (e.g., effect testing and regression to the mean).

The three steps of quasi-experimental design are:

1. Measurement, dependent variable:

During this phase, the researcher pinpoints the specific problem or issue they wish to tackle and devises a strategy to resolve it. This encompasses establishing research inquiries, creating interventions, and outlining methodologies for data collection and analysis.

2. Treatment, quasi dependent variable:

During this phase, the researcher puts the plan into action and gathers data

on the effects of the interventions. This may involve deploying new teaching methodologies, altering the classroom setting, or putting into practice new policies or procedures.

3. Measurement, dependent variable:

During this phase, the researcher gathers data regarding the interventions' consequences and monitors their impact on teaching methodologies and student learning achievements. This process might encompass data collection through surveys, observations, or other relevant methodologies.

In this study the researcher used English songs as an instrument. The songs used can be described below

1. contain simple vocabulary that students can use in everyday life.
2. the songs chosen are interesting songs so that students are active in class.

Besides the techniques above, the necessary equipment includes observation sheets, assessment rubrics, lesson plans, cameras, laptops, and speakers.

Observation sheets are required to observe or ascertain students' responses and progress during the classroom learning process. Assessment rubrics are essential for grading students' tests. Lesson plans serve as guidelines for classroom activities. Cameras document classroom activities, while laptops and speakers play media or music.

3.3.2 Research Procedure

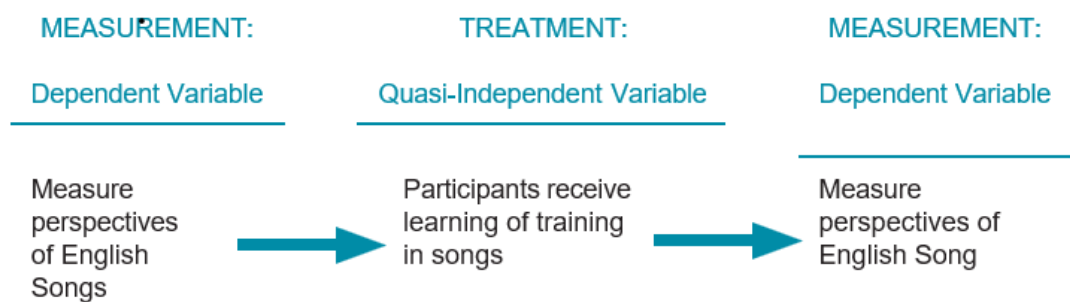
This type of research is quasi-experimental, using a group pretest-posttest design, which can be visualized in Table 2.

Table 2 Research Procedure (One Group Pretest posttest design)

Group	Pretest	Treatment	Post Test
Class	V	V	V

Step by step of quasi experimental research can be seen as follow :

Figure 13.3 The One-Group Pretest-Posttest Quasi-Experimental Design



This research focuses on class. In this study, there was only one group that served as the control group (before the introduction of the research treatment) and the experimental group (after the introduction of the research treatment). This type of research was chosen because it was not possible to obtain a control group. Data collected before treatment, whether test results or other data, is classified as control group data and data collected after treatment is classified as experimental group data. The control group data is often called the pretest, and the experimental group data is often called the posttest.

During the learning process, the researcher observed student and teacher activities. After the learning process is complete, a post-test is carried out at the end of the learning process with the aim of knowing (as an assessment) the student's

progress after being given treatment using songs.

3.4 Data Analysis

1. Preliminary Analysis

Preliminary analysis is a pre-treatment analysis that aims to determine student performance before treatment. The data used are the results of the pre-test. The contents analyzed are as follows: Normality This analysis aims to find out whether the data used is normally distributed.

The formula used to test the normality of this data is to use chi-square.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Information:

O_i = Observation frequency

E_i = Expected frequency

k = Number of interval classes

Criteria: Ho Reject if $\chi^2 \text{ Data} \geq \chi^2 (0.95) (k - 3)$ or χ^2 (confidence level, degrees of freedom 0.95 k-3). In other cases, Ho is accepted as. This means that the data tested is typically distributed (Sudjana, 2002).

2. Final analysis

The data analysis technique used is quantitative data analysis. The numerical data in this research comprises students' scores obtained from their pre-test and post-test, which are analyzed based on quantitative principles using SPSS Statistics, handling statistical figures. The success of the learning or teaching activity using English songs as a medium to teach vocabulary can be seen from

whether students can achieve the minimum passing grade (75) set. If there is an improvement in the test results, it indicates that songs are suitable for enhancing students' speaking ability.

First, to determine students' vocabulary proficiency, the researcher tries to obtain the average score of students' vocabulary per action in the cycle, explained by the formula:

$$\text{Average student score} = \frac{\text{Individual score}}{\text{Number of students}}$$

Second, this step is to obtain the percentage of students who achieve the minimum completeness criteria (KKM) based on English subject scores in accordance with school agreements, as explained below:

$$\text{Class percentage} = \frac{\text{Total percentage score}}{\text{Number of students}} \times 100\%$$

Third, the researcher identifies possible student scores that can improve, both in vocabulary comprehension scores from pre-tests and post-tests in cycles 1 and 2, as shown in the formula below:

$$\text{Student improvement percentage} = \frac{\text{Post-test} - \text{Pre-test}}{\text{Pre-test results}} \times 100\%$$