CHAPTER III

METHOD OF THE RESEARCH

This chapter presents about design of the research, population and sample, instrument of the research, , data collection, and data analysis.

3.1 Design of The Research

In this research, the writer will conduct an experimental study. The subjects of this research experimental class, the writer will use the approach was quantitative. It will explain the result of pre-test and post-test. Variable is the object of research or something that become the concern of research. In this study there are two variables.They are Independent Variable (x) and Dependent Variable (y) :

1. The independent variable (x) in this research the use of English song.
2. The dependent variable (y) in this research the vocabulary mastery of the eleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year.

In conducting this research, the writer will define into 3 steps. First, the writer will give pre-test. Then, the writer will give treatment by using English Song and the last the writer will give a post-test.

The pattern of the design above is describe as follow:

| T1 | → | X | → | T2 |

T1   : Pre-test

X   : Treatment

T2   : Post-test

The writer will conduct this research to the eleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year.

3.2 Population and Sample

The population in this research is the eleventh grade students at SMA NU Al ma'ruf Kudus in 2019/2020 academic year, there are 5 classes of social program (XI IPS 1, XI IPS 2, XI IPS 3, XI IPS 3, XI IPS 4, XI IPS 5) that consist of 175 students. They have same material on the syllabus in studying English. So, the population of this research is homogenous. The participants or the subjects of the research are the eleventh grade students at SMA NU Al ma'ruf Kudus in 2019/2020 academic year. There are 1 class (XI IPS 1) that consist of 36 students.

In this case, the writer use cluster random sampling technique to take the sample. Cluster random sampling technique is randomly selects groups, not individuals.

3.3 Instrument of the Research

Instrument of the research is a series of activities to explore the accurate data. Ali (1984: 101) argues that instrument of the research is a way or method of collecting data. Thus, instrument of the research as the way used by the writer to collect the data in order to make the research process easily, clearly and completely. In order to get the data needed, the test is given to the eleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year. The test used pre-test and post test. The pre-test is intended to investigate the students' prior knowledge on English vocabulary before giving treatment, while the post-test is given to measure the students' on English vocabulary mastery after the treatment has been given. There are 20 items in the test, so the score of the students are obtained by multiplying the correct number by 5. Therefore, the highest score will be 100 and the lowest score will be zero. The data description of the students score will be classified into five criteria. The data description of the students score can be described on the table below.

The criteria of measuring score of the test is as follow:

Table 3.1: The Criteria of English Vocabulary

Score	Criteria	Notes
86-100	A	Excellent
76-85	B	Good
56-75	C	Sufficient
36-55	D	Low
0-35	E	Poor

3.3.1 Validity

Validity is the accuracy stage of an instrument to test the things in a certain group. To measure the test validity, the writer uses content validity, in which the test is made based on the specification on the English curriculum.

The test that will be use should fulfill the reliability and validity to get the data accurately. So, before doing the test, the researcher will do a try out test to another class to make sure that the test is reliable. Furthermore, the questions of the test will be compiled based on the syllabus to make sure the test is valid.

3.3.2 Reliability

Reliability means the stability of test to measure certain task that can be everywhere and every place. In additional, to make sure that the test will be called reliable, before using the test item for the pre-test and post-test will be tried out, firstly, the eleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year get the themes of the material that has been taught before, and the subject is XI IPS 1. The researcher uses multiple choice test with 20 items. Material is used in the test is vocabulary. Then the writer calculates the result of the try out to find the test reliability by using formula as stated as follow:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X^2)\}\{N \sum Y^2 - (\sum Y^2)\}}}$$

Notes :

r_{xy} : items of test reliability

N   : the number of sample

$\sum_X$: the sum of X score

$\sum_Y$: the sum of Y score

$\sum_{XY}$: the sum of the scores X and Y scores for each students

$\sum_X{}^2$: the sum of X scores of X square

$\sum_Y{}^2$: the sum of X scores of Y square

The result of the computation is applied into "Spearman-Brown" formula to estimate the reliability of the entire test. The formula is:

$$r\,11 = \frac{2.\,rxy}{1 + rxy}$$

Notes :

r_{11} : the reliability of the whole test

r_{xy} : the result of the calculation using r product moment.

The criteria of reliability score can be seen as follows:

Table 3.2: The Criteria of reliability

Reliability	Notes
0.00-0.20	Not Reliable
0.21-0.40	Low Reliable
0.41-0.60	Fairly Reliable
0.61-0.80	Highly Reliable
0.81-1.00	Perfectly Reliable

3.4 Data Collection

In collecting the data, the writer use test as the instrument of this research. The test here use to measure of vocabulary mastery of the eleventh grade students at SMA NU Al Ma'ruf Kudus before and after being taught by using English song. The procedure in collecting the data as follows:

1. Getting for permission to the Dean FKIP to hold the research on SMA NU Al Ma'ruf Kudus

2. Getting permission from the principle of SMA NU Al Ma'ruf Kudus to conducted the experiment.

3. Getting permission from the English teacher of SMA NU Al Ma'ruf Kudus permission for holding to conducted the experiment.

4. Giving pre-test to explore the data of the student in vocabulary mastery before being taught by using English Song.

5. Giving the English Song in teaching vocabulary mastery to increase of the eleventh grade students as a treatment.

6. Giving post-test for the students to find out the result data of the student achievement in mastering the vocabulary after get the treatment / after being taught by using English Song.

3.5 Data Analysis

To analyse the data of vocabulary of theeleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year, the researcher will use the statistic calculation. The researcher will use descriptive statistical formula to count mean and standard deviation based on Ali (1984:181-182) as follows:

3.5.1 The mean formula

$$\overline{x} = \frac{\sum fx}{N}$$

Notes :

$\bar{x}$ = Mean

$\sum$fx   = The sum of frequency times mean result

N   = The number of students or sample

3.5.2 The standard deviation formula

$$S= i \sqrt{\left(\frac{\sum fx'^2}{N}\right) - \left(\frac{\sum fx}{N}\right)^2}$$

Note :

S   = Standard Deviation

I   = Interval

$\sum fx'^2$ = The sum of score

N   = The number of students

3.5.3 Doing hypothesis testing by using five steps

To test whether is there a significant difference the vocabulary of the eleventh grade students of SMA NU Al Ma'ruf Kudus before and after being taught to use English song, the hypothesis testing is done by using a five steps model:

Step 1. Making Assumptions and Meeting Test Requirements

Model : Random Sampling

Level of measurement is interval-ratio

Sampling distribution is normal

Step 2. Stating the Null Hypothesis

$$H_0 : \mu_1 = \mu_2 \qquad\qquad H_a : \mu_1 \neq \mu_2$$

Note :

H_0 : there is no significant difference the vocabulary mastery of the eleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year before and after being taught by English Song.

H_a : there is significant difference the vocabulary mastery of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year before and after being taught by English Song.

μ_1 : the mean score of the vocabulary mastery of the eleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year before and after being taught by English Song.

μ_2 : the mean score of the vocabulary mastery of the eleventh grade students of SMA NU Al Ma'ruf Kudus in 2019/2020 academic year before and after being taught by English Song.

Step 3. Selecting the Sampling Distribution and Establishing the Critical Region

Sampling Distribution = t distribution

$$\alpha = 0.05 \text{ two-tailed test}$$

$$df = (N\text{-}1) = 36 - 1 = 35$$

$$t \text{ (Critical)} = \pm 2.042$$

Step 4. Computing the Test Statistic

$$t_o = \frac{\overline{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}}$$

Formula of calculating t (obtained)

Note:

t_o = the t value for dependent (correlated) means

$\overline{D}$ = the mean of the differences

D = the difference between the paired score

$\sum D^2$ = the sum of the squared difference scores

N = the number of sample

Step 5. Making a decision and Interpreting the Result of the Test

a. Reject H_0 and accept H_α, if t_0 falls in the critical region.

b. Accept H_0 and reject H_α, if t_0 does not fall in the critical region.