CHAPTER III

RESEARCH METHOD

In this chapter presents the research design, population and sample, instruments, procedures of collecting data and procedure of data analysis. Each of them will be discussed separately in the following sections.

3.1 Research Design

In this study, the writer made the design of research in order to describe what the writer did in her research. In her research, two classes were taking as the sample of the research. One class as the experimental group and the other class as the control group. In the experimental group, the students were taught vocabulary by using songs while in the control group the students taught vocabulary without using songs. The classes were given the same topic, material, teacher, pre-test and post-test.

In doing her research, the writer gave several treatments to the experimental group while the control group got the lesson from the teacher as usual. In the treatment process, the writer gave vocabularies that related to colors, for example white, red, green, yellow, etc. in the treatment process, the writer gave 4 songs that related with the topic: colors. The songs were: All The Children of The World, Colors, Look Up High and Look Down Low, Planted Walls.

3.2 Population and Sample of the Research

the population of the research was the students of SDN Duyund Trawas Mojokerto. In this research, the writer chose the fourth year students. Because the fourth year students were the students who got English lesson first in elementary school level. There are one class and the class contains of 24 students. To decide which classes become the experimental and control group, the write uses random sampling. 12 students are treated as experimental group and 12 other students are treated as control group.

To find out the effect of using songs in increasing the students' mastery vocabulary of the fourth year students of elementary school, in this study the writer took the sample in randomized way. Therefore, this technique gave the same opportunity for each member of population to be a member of the sample.

3.3 Procedure of Collecting the Data

there were several steps that she did to collect the data in SDN Duyung Trawas Mojokerto. To collect the data, the writer gave the pre-test, the post test, and several treatments to the fourth year students of SDN Duyung Trawas Mojokerto.

The vocabulary tests are applied in the ore test and post test. There are included into:

a. Pre test

The pre test was containing 25 numbers items of multiple choice and the test must be done in 30 minutes. Before the students got treatments they had to do the pre test.

b. Post test

The number items of the post test were as much as the pre test items that is 25 numbers items of multiple choice. And the test must be done in 30 minutes. The post test was also given only one time for both classes, and it is given after the students got treatments.

c. The Treatments

The writer gave the treatments to the students after they did the pre test and before they did the post test. The treatments were done in 40 minutes for each meeting.

3.3.1 Validity

Arikunto (2006:169) divides validity into two types: external and internal validity. External validity is validity that is achieved when the data collected by the instruments are appropriate with other data. While internal validity is the validity which is achieved by analyzing the items.

In this study the writer found out that the validity of the test by using the formula of Arikunto (2006:170). The formula is:

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

r_{xy} = coefficient correlation between variable x and y

N = the number of students taking the test

X = the result of the test

Y = the teacher's rating of daily test

Criteria :

0.81 – 1.00 = very high

0.61 – 0.8 = high

0.41 – 0.6 = average

0.21 – 0.4 = low

0.0 – 0.2 = very low

The writer measured the validity with the criteria of average. It means that the result of validity is at least 0.45 – 0.86.

3.3.2 Reliability

Measuring the reliability of the test items use for the consistency of the result. To know the reliability of the test, the writer used the K – R.21 technique written by Arikunto (2006:189).

The formula as the follows:

$$r_{11} = \frac{k}{k-1} \quad \frac{1 - M(k-M)}{kVt}$$

Notes: r = instrument reliability

K = the number of item test

M = mean score

Vt = total variant

Because the writer chose this formula, then the first time the writer made the table K–R 21 to analyze the reliability of the test (see Appendix III).

Then the scores put into the r_{11} formula (Arikunto, 2006: 189)

$$r_{11} = \frac{k}{k-1} \quad \frac{1-M(k-M)}{kVt}$$

With : k = 25

M = 20.4

Vt = 9,4

From the calculation, the reliability of the test was 0,625. then the writer consulted to r table of product moment to find out whether the result of r product moment (0.625) is higher that r table (0.404). It means that the test could be accepted.

3.3.3 Index of Discrimination

Heaton stated that:

> The discrimination index of an items indicated the extent to which the item discrimination between the tester, separating the more able the tester from the less able (1975:173)

The index of discrimination is calculated by using the formula:

$$D = \frac{\text{Correct U} \quad \text{Correct L}}{N}$$

D = the index of discrimination power or index of discrimination

U = the number of the upper group who answered the items correct

L = the number of the lower group who answered the items correct

N = one half the total number of students taking the test

The criteria of index discrimination (Arikunto, 2005:218) is:

0.00 – 0.20 = poor (P)

0.21 – 0.40 = satisfactory (S)

0.41 – 0.70 = good (G)

0.71 – 1.00 = excellent (E)

Negative = omitted (O)

From the table (see Appendix VII) it could be seen that among 12 items there were 2 items in the range between 0.21 – 0.40, which considered satisfactory (S). Those were number 23 and 28. There were 17 items in range 0.41 – 0.70, which were considered as good items. Those were number 4, 5, 7, 8, 9, 10, 11, 12, 13, 16,18, 22, 25, 26, 27, 29, and 30. There were 11 items in the range 0.71 – 1.00, which were considered as excellent items (E). Those were number 1, 2, 3, 6, 14, 15, 17, 19, 20, 21 and 24.

3.4 Data Analysis Technique

After collecting the data of pre test and post test from the experimental group and control group in the form of score, from the pre test and post test at the experimental group by using statistical calculation. The formula of t-test which is used in the study is based on Hatch and Hossein (1982) are as following:

$$T = \frac{X_1 - X_2}{S(x_e - x_c)}$$

Where:

T : t value (t-test

X : Mean of experimental group

X : Mean of control group

S(x_e –x_c): The standard error of the differences between means