CHAPTER III

RESEARCH METHODOLOGY

This chapter discussed several things such as research design, population and sample, hypothesis, instrument to collect the data, data collection technique, and data analysis procedure.

A. Research Design

This study used quantitative qualitative approach. Quantitative approach is used for analyzing the statistic data that is students' pre-test and post-test score. By that score, the researcher could analyze whether "Slap the Word" game influence students' vocabulary mastery. This method used quasi experimental research. Experimental is the best of the quantitative designs which is used to decide probable cause and effect.[1] Experimental research is the way to find a causal relationship (relationship clause) in determining cause and effect.

Experiments are always done with the intent to see a treatment.[2] In this research, there were two variable. So, the researcher used quasi experimental design. The researcher used two classes; they were experiment and control class. Experiment class was a class that was given treatment by using the game and

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[1] Creswell, John W. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (Boston: Pearson Education, Inc.,2012) p.295

[2] Suharsimi Arikunto. *Prosedur Penelitian: Suatu Pendekatan Praktek* (Jakarta: Rineka Cipta.1998) p.38

control class was a class that was given treatment but without using the game. One of the most commonly used quasi-experimental designs in educational research could be represented as:

$$O_1 \qquad X \qquad O_2$$
$$O_1 \qquad\qquad O_2$$
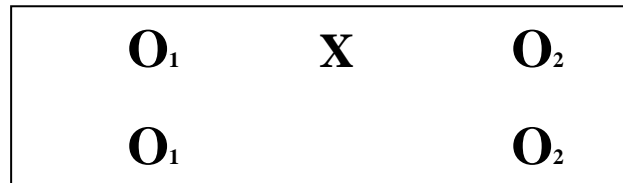
Where :

1. O_1 = pre-test score (before given treatment), it means pre-test was held by the researcher in order to measure students' vocabulary ability before giving "Slap the Word" game.

2. X = treatment, it means the researcher would give treatment to the research's subject using "Slap the Word" game.

3. O_2 = post-test (after given treatment), it means the researcher would give post-test to the students in order to know the influences of giving treatment and measure score after giving "Slap the Word" game as a treatment.

In experimental research, there were two variables that had correlation each other. Variable was an object of study that became important points in research. In this research there were two variables:

1. Independent variable

   In this research, the independent variable is "Slap the Word" game

2. Dependent variable

   Dependent variable was observed or measured to determine whether a change or variation in the independent variable causes or effects a change in the dependent variable[3]. In this research, the dependent variable was students' vocabulary mastery.

While qualitative research focused on understanding social phenomena from the perspective of the human participants in natural setting.[4] It was used for analyzing the students' answer in questionnaire by interview.

B. **Population and Sample**

Population is a set (or collection) of all elements processing one or more attribute of interested.[5] The population of this study was at seventh grade of

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[3] http://castle.eiu.edu/~lhelsel/tec5143/activities/variables.pdf
[4] Donald Ary, et.al., *introduction to research in education* (Canada: Wadsworth, 2010)p. 22
[5] Suharsimi Arikunto, *Prosedur Penelitian*, (Jakarta PT. Rieneka Cipta: 1998) p. 339

SMPN 2 Jatirejo, Mojokerto. It was divided into five classes (A, B, C, D, E classes), and there also differentiation of level.

Based on the English teacher, A class and B class were students who had good intelligence even though A class was the most intelligence class. Therefore a researcher took sample by researching two classes that had good intelligence. The researcher chose B class as an experimental class and A class as a control class.

This sample of this study was using cluster random sampling. It means that students' selection of first grade of SMPN 2 Jatirejo was by knowing the level and considering well.[6] This technique was based on the explanation of the examination score by the teacher.

C. **Hypothesis**

Ho = There is no influence after applying "Slap the Word" game on students' vocabulary mastery at SMPN 2 Jatirejo, Mojokerto.

Ha = There is influence after applying "Slap the Word" game on students' vocabulary mastery at SMPN 2 Jatirejo, Mojokerto.

Where the criterions were:

Ho accepted if t-value < t-table

Ha accepted if t-value > t-table

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[6] Ibid.,p.130

D.   Instrument to Collect the Data

The study was quasi experimental, pre-test and post-test would use pre and post-test that were given to both control and experimental group. The score from the pre-test were used to see that the initial ability of both groups was similar before conducting the treatment. On the other hand, the scores from post-test were used to measure whether the implemented game influence the experimental group or not. As instruments to collect data, the collect data were the scores obtained from:

1. Interview guide

    The interview guide that would be used by the researcher was questionnaire which was answered by the student. It had function to complete the data which could not be found in questionnaire. The researcher would interview three students. The first student was students who got better score after treatment. Second student was student who did not have progress score after treatment. The third student was student who got worse score after treatment.

2. Worksheet

    Worksheet was an instrument to collect the data trough test that would be hold in students. In applying the instruments, the researcher needed to

analyze the validity of this instrument. For this research, the validity that would be used is:

a. Content validity

Content validity could be compiled using points instruments that were usually include variables to be studied and indicators to measure.[7] In this research, the researcher would take the questions from *The Bell* worksheet. *The Bell* was the worksheet that was used by the English teacher when teaching seventh grader in academic years 2011/2012. It was to make the questions that would be used for the test could fulfill the content validity. The types of question in worksheet that would use in pre-test were translation and gap-filling. In post-test, the types of question are definition of the thing and gap filling.

3. Questionnaire

The researcher used a questionnaire as a tool to study the response of students to the "Slap the Word" game. Through this instrument, the researcher would ask the students about their difficulties in learning English which covered their difficulty in learning vocabulary and their responses after applying "Slap the Word" game. The researcher used this instrument as a tool to know whether this game influenced students' vocabulary mastery.

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[7] Sugitono, *Statistika Untuk Penelitian* (Bandung:Alfabeta, 2011)p.353

E.   Data Collection Techniques

1. Interview

In this stage, there would be an interview with some students. This interview was for some students after they had answered the questionnaire. The interview would be used by the researcher to be clarified the students' answer on the questionnaire. It was used to complete the data about the response of the students concerned to the application of "Slap the Word" which could not be found in questionnaire.

2. Test

In this study, test was the most important instrument to collect the data. It was used to know the influence of "Slap the Word" game on students' vocabulary mastery. This research would be organized like this:

a. Pre-test

The data would be collected through pre-test in both classes in order to know the difference between the two classes that taught by "Slap the Word" game and traditional method. Pre-test was held in both classes to measure the students' vocabulary mastery before the treatment.

b. Post-test

After the researcher applied the game then the post-test would be given. Then, the result of the test was scored and calculated.

The result of each test was formulated through the formula below:

$$value = \frac{result\ score}{10} \times 100$$

3. Questionnaire

Questionnaire was useful to know about the students' responses toward the influence of this game in their vocabulary mastery. The researcher used questionnaire to get specific data that could not be done by interviewing all the students. Questionnaire that would be used by the researcher was a questionnaire which was adapted from Chusnul Fatimah's questionnaire on her thesis[8].

F.   Data Analysis Procedures

After collecting the data, pre-test and post-test from the experimental group and control group, then the researcher measured the score differences from pre-test and post-test of experimental group and control group by the statistical calculation. In this study, the researcher used t –a test formula to

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[8] Chusnul Fatimah, *Using Comic to Increase Students' Vocabulary at SMPN Bilingual Terpadu Krian-Sidoarjo.* (Thesis:IAIN.2009)

find out whether the mean differences between them were significant or not, with the steps below:

a. The first step was the researcher put the scores of the pre-test and post-test of experimental and control groups.

b. Second, the researcher calculated the mean from overall each scores of post-test of both groups. To calculate the mean in central tendency with the following formula:

$$Me = \frac{\Sigma x}{n}$$

Where:

M = mean

Σx = total of the test

N = total of students

c. Third, the researcher calculated standard deviation with the following formula:

$$S = \sqrt{\frac{\Sigma\left(x_1 - \frac{}{x}\right)^2}{(n-1)}}$$

Where:

S = standard deviation

x = mean of post-test score

x_i = post-test score

n = many data

d. Fourth, the researcher would use homogeneity test in order to know whether experimental and control group have same variants, with the following formula:

$$F \; hit = \frac{S_1^2}{S_2^2}$$

Where,

S_1^2 = the biggest variance

S_2^2 = the smaller variance

e. Fifth, the researcher would analyze the data through t- test to find out whether the difference of the scores between them was significant or not. Through the following formula:

$$t = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where:

$\overline{X_1}$ = mean score sample 1

$\overline{X_2}$ = mean score sample 2

n_1 = many of sample data 1

n_2 = many of sample data 2

$S_1{}^2$ = sample variants 1

$S_2{}^2$ = sample variants 2

f. After calculating all of the scores, the researcher calculated the number of degree of freedom by adding the individual of each group, then subtract of two. The formula as follows:

df = N1+N2-2

Where:

df = degree of freedom

N1 = number of subject in experimental class

N2 = number of subject in control class

Standard of significance[9] = 0,025

g. After doing those steps, the researcher concluded the result of the research by test the hypothesis.

h. To answer the second research question, the researcher counted the percentage of the questionnaire result. The researcher needed to calculate it through the following formula:

$$P = \frac{n}{N} x 100\%$$

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[9] Suharsimi Arikunto, *Prosedur Penelitian*, (Jakarta PT. Rieneka Cipta: 1998) p. 310

P   = percentage

n   = the number of respondents who choose certain option

N   = the number of all respondents

i. The last, after counting the result of questionnaire, the data would be compiled with supporting data from interview. So, it would be qualitative data.