

## **CHAPTER III**

### **METHODOLOGY**

#### **A. Research Design**

In conducting the research, the researcher uses quantitative method, basically on experimental research. The primary data will be collected by conducting tests (pre and post).

This study is aimed at identifying the effectiveness of using “games” in teaching English at elementary school to improve students’ vocabulary. Experimental research is a procedure carried out to verify, refuse, or validate a hypothesis. Therefore the researcher did treatment in experiment class, but not in control class. Pre test and post test were given to know the different score of the two groups.

There are two research variables involve in this research, namely dependent variable and independent variable. Independent variable is the use of games. Dependent variable is the students’ ability in English vocabulary. Knowing the variables, it is expected whether or not the independent variable influences the dependent variables.

#### **B. Research Setting**

The setting of this research was conducted at SDN Kebun Raya 1 Kintap years 2016/2017 in Jl. Pangeran Antasari (Desa Kebun Raya) Blok. D, Kintap. The researcher chose

this school to do the research because the students assumed that English was difficult to understand also, the teacher rarely gives and uses games for teaching and learning process.

### **C. Research Population and Sample**

#### **1. Research Population**

The population of this research was the students who have learned English. They are the 5<sup>th</sup> students of state elementary (SDN) Kebun Raya 1 Kintap, there are 42 students in this grade.

In this research, they were chosen based on the result of pre and post test that done to 5<sup>th</sup> graders at SDN Kebun Raya 1 Kintap. Those two classes become experimental group (class VA) and control group (class VB).

#### **2. Research Sample**

Because the members of population were small (42 Students), no sample was taken, but it was called the total sample as shown in the following table:

**Table 3.1: The Sample of the Research**

Classes	Number of students
Beginner English Class 5 A	20 Students
Beginner English Class 5 B	22 Students
Total	42 Students

### **D. Research Instrument**

There were three instruments applied in this research: Test (pre test and post test), observation and documentary. The test was used to collect the primary data, observation for secondary data. The primary data as the main source were used to see the effectiveness of using games, the secondary data were used to support the research study.

There were two kinds of test, pre test and post test.

### 1) Pre Test

Pre-test was held to know the subject's vocabulary ability prior to treatment of experiment. Besides, it also to make sure that the experimental and control group have or no significant differences in their vocabulary ability.

In pre test, all of 5<sup>th</sup> grade students at SDN Kebun Raya 1 Kintap control class and experiment class answered 12 questions about part of body (vocabulary). The right answers were marked 8,3 points and wrong answer would marked 0 point. If the students could answer all of the items correctly they will get 100 points (the higher score). It means the researcher wants to know their ability before the teacher uses games in teaching and learning process. Their answers were classified into 5 categories as follows:

- Assessment Rubric

**Table 3.2: The Category of Students' Mastery in Vocabulary**

<b>Test Score</b>	<b>Class Performance</b>
80 – 100	Excellent
70 – 79	Good
60 – 69	Fair
50 – 59	Poor
0 – 49	Very Poor

To know the students' mastery, the writer then used mean score as follows:

#### a. Mean Score

$$M = \frac{\sum x}{N}$$

M = Mean Score

$\sum x$  = Accumulative Score

N = Number of Respondents

b. Result Score

$$R = CA \times M$$

R = Result Score

CA = Correct Answer

M = Mean Score

2) Post Test

Post-test was administered after the two groups have undergone the teaching and learning process. The time allotment provided for the students both experimental and control group was 70 minutes. Observation was also used during treatment time. The primary and secondary data will be then analyzed.

In post test, all of 5<sup>th</sup> grade students at SDN Kebun Raya 1 Kintap in control and experiment class would answer 16 questions about part of body (vocabulary). The right answer was marked 6,25 points and wrong answer was marked 0 point. If the students answered all of the items correctly, they would get 100 points that is the higher score. It is aimed to know the students' mastery on vocabulary after the teacher used games, and the effectiveness of teaching and learning process between two classes.

## E. Data Collection Procedure

To collect data in this research, the researcher used some techniques consist of:

a. Test

This research used pre test to know the students' achievement and their first knowledge, and used post test to know the students' achievement after treatment by using games and not

using games. The tests are used to measure the effectiveness of using homework on students' achievement.

b. Documentary

This technique is aimed at looking for all written responds or documents that keep some detailed data.

## **F. Data Analysis Procedure**

Before analyzing the data, the researcher processed them by using some techniques:

1. Technique of Data Processing

In processing the data, the researcher uses some technique such as:

a. Editing

Editing is an activity that is performed after investigator finished collecting data or it can be called checking stage. This technique is used in the purpose of examining all the collected data to make sure whether the data are already completed or not.

b. Coding

After editing, the next step is coding, coding is process of identify the data. The researcher makes certain code on all collecting data to classify them into each certain category.

c. Scoring

This technique is used to compose and put the data into table and count the right answer's frequency. In scoring started ranging from very good criteria until very poor criteria.

d. Tabulating

The researcher composes and puts the data into a table and then counts its percentage by using the following formula:

$$P = \frac{F}{N} \times 100$$

P = Percentage

F = The frequency of answer from respondents for each item

N = Number of respondents

#### e. Data Interpretation

The data are described by the researcher's interpretation without changes means of data. This technique can help the researcher to answer the research problem systematically.

#### 2. Data Analysis

To conduct an analysis of the first formulation of the problem, that is the students' English between students taught by using games and students taught without using games, the research uses analytical techniques comparative test "t" (students' test) by the formula of Anas Sudijono (2009):

$$T = \frac{M1 - M2}{SE M1-M2}$$

Description:

T = Test are being sought

M1 = Mean students taught by using games

M2 = Mean students taught without using games

SE M1-M2 = Standard error difference in mean students who are taught by using games and taught without using games.

This technique is used to analyze right or wrong about hypothesis of the research. If the result of the test ( $t_o$ ) is same or higher than  $t_{table}$  ( $t_t$ ), then zero hypothesis ( $H_o$ ) is rejected, but if the result of test ( $t_o$ ) less than  $t_{table}$  ( $t_t$ ) then, zero hypothesis ( $H_o$ ) is accepted.

The application way to use student “t” or test “t” or (t) code formula:

1. Looking for mean variable I by using the following formula:

$$M_x \text{ or } M_1 = \frac{\sum x}{N_1}$$

$M_1$  : Mean of the control class of SDN Kebun Raya 1 Kintap.

$\sum x$  : Accumulative of the total score of the control class of SDN Kebun Raya 1 Kintap.

$N_1$  : Number of subject of the experiment class of SDN Kebun Raya 1 Kintap.

2. Looking for mean variable II by using the following formula:

$$M_y \text{ or } M_2 = \frac{\sum y}{N_2}$$

$M_2$  : Mean of the experiment class of SDN KERA 1 Kintap

$\sum y$  : Accumulative of the total score of the experiment class of SDN KERA 1 Kintap

$N_2$  : Number of subject of the experiment class of SDN KERA 1 Kintap

3. Looking for standard deviation for variable I by using the following formula:

$$SD_x \text{ or } SD_1 = \frac{\sqrt{\sum x^2}}{N_1}$$

$SD_1$  : Standard deviation for the control class of SDN KERA 1

$\sum \times^2$  : Accumulative of the quadrat deviation of the control class of SDN KERA 1 Kintap

4. Looking for standard deviation for variable II by using the following formula:

$$SD_{\gamma} \text{ or } SD_2 = \frac{\sqrt{\sum y^2}}{N_2} \quad \text{on of the experiment class of SDN KERA 1 Kintap}$$

$\sum y^2$  : Accumulative of the quadrat of deviation of experiment class of SDN KERA 1 Kintap

5. Looking for standard error for mean variable I by using the following formula:

$$SD_{M_x} \text{ or } SE_{M1} = \frac{SD_1}{\sqrt{N_1 - 1}}$$

$SE_{M1}$  : Standard error of the control class of SDN KERA 1 Kintap

1 : Value of constant

6. Looking for standard error for mean variable II by using following formula:

$$SD_{M_{\gamma}} \text{ or } SE_{M2} = \frac{SD_2}{\sqrt{N_2 - 1}}$$

$SE_{M2}$  : Standard error of experiment class of SDN KERA 1 Kintap

1 : Value of constant

7. Looking for standard error for comparative mean variable I and mean variable II by using the following formula:



$$SE_{M1-M2} = \sqrt{SE_{M1} + SE_{M2}}$$

$SE_{M1-M2}$  : Standard error for comparative mean of control class and experiment class of SDN KERA 1 Kintap

$SE_{M1}^2$  : Quadratic result of standard error of mean of the control class of SDN KERA 1 Kintap

$SE_{M2}^2$  : Quadratic result standard error of mean of experiment class of SDN KERA 1 Kintap

8. Looking for t, by using the following formula:

$$T \text{ test} = \frac{M_1 - M_2}{SE_{M1-M2}}$$

T : Value of t observation

9. Giving interpretation for “t” with consulting (“t”table):

- a. Looking for degree of freedom :

$$Df / db = (N_1 + N_2)$$

$N_1$  = Number of subject of the control class of SDN KERA 1 Kintap

$N_2$  = Number of subject of the experiment class of SDN KERA 1 Kintap

2 = Value of degree of freedom for two variables

- b. Consulting score of “df/db” with “t table”

Ttable = value of critic “t”

- In significant degrees t *table* 5%

- In significant degree  $t$  table 1%
- c. Making hypothesis interpretation :
- $H_0$  (Zero Hypothesis) : there is no significant difference
  - $H_a$  (Alternative Hypothesis) : there is a significant difference
  - Consulting " $t_o$ " with " $t$  table"

If the value of " $t_o$ " is higher than the value of  $t$  table"  $H_0$  is rejected,  $H_a$  is accepted.

If the value of " $t_o$ " is lower than the value of  $t$  table"  $H_0$  is accepted,  $H_a$  is rejected.