

CHAPTER III

THE RESEARCH METHOD

A. The Research Design

This research is a kind of experimental research which use the observation and questionnaires motivation. It consists of two variables namely independent variable (x) as the use of Snakes andLadders game and dependent variable (y) as students' motivation in speaking English. This reasearch is a Quasi-Experimental research which is intended to find out the effect of using snakes and ladders game toward motivation in speaking of the first year students at State Junior High School 21 Pekanbaru. The experimental I the only type of research that can be tested hypothesis to establish cause and effect relationship.¹ According to John W. Creswell, "Quasi-Experimental research is approach introduces considerably more threats to internal validity than true experiment"². Meanwhile, the time-series design is a quasi-experimental design involving one group which is repeatedly pretested, exposed to an experimental treatment, and repeatedly post-tested.³ In conducting this research, two classes of first year students of State Junior High School 21 Pekanbaru will be participated. The first class will be the experiment class and another one will be the control class. The

¹ L.R. Gay and Peter Airaisian. *Educational Research Competencies for Analysis and Application*. Six Ed. (New Jersey: Prentice-Hall, Inc. 2000). P.367.

² John W. Creswell. *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. (New Jersey: Pearson Prentice Hall. 2008). P.314.

³ L.R. Gay and Peter Airaisian. *Op.cit*. P.630.

two classes will get different treatment. The experiment class will be taught by using Snakes and Ladders game and the control class will be taught by using conventional technique.

B. The Location and Time of the Research

These research will be conducted from November 2013 at State Junior High School 21 Pekanbaru is located in Pekanbaru.

C. The Subject and Object of the Research

1. Subject of the Research

The subject of this research is the first year student of State Junior High School 21 Pekanbaru in the academic year of 2013/2014.

2. Object of the Research

The object of this research is using Snakes and Ladders game and motivation in speaking.

D. The Population and Sample

1. Population

The target population of this study includes all the first year students of State Junior High School 21 Pekanbaru. There are 8 classes all together, each class consist of 33 students for class VII¹, 33 students for class VII², 33 students for class VII³, 30 students for class VII⁴, 30 students for class

VII⁵, 32 students for class VII⁶, 32 students for class VII⁷, 31 students for class VII⁸. So the total numbers of students are 254 persons. The detail number of students includes this following table:

Table III.1

Population and Sample of the First year Students at SMPN 21 Pekanbaru

Numbers	Class	Students		Total	Sample
		Male	Female		
1	VII ¹	21	12	33	
2	VII ²	21	12	33	
3	VII ³	21	12	33	
4	VII ⁴	20	10	30	Sample
5	VII ⁵	20	10	30	Sample
6	VII ⁶	21	11	32	
7	VII ⁷	21	11	32	
8	VII ⁸	20	11	31	
Total Students				254	

(Source : Document of SMPN 21 Pekanbaru academic year 2013/2014)

2. Sample

Table III.2

Sample of the Research

Number	Classes	Population		Total
		Female	Male	
1	VII ⁴ (Experimental class)	20	10	30
2	VII ⁵ (Control class)	20	10	30
TOTAL				60

Based on the total population above, the teacher will take two classes that have the similarity characteristic. It will be done by using Cluster Sampling Technique. Therefore, the researcher will use test to measure the students' motivation.

E. The Technique of Collecting Data

In order to get the data that are require by the writer in this research, so the writer employs the following technique of the data collecting:

1. Observation

The writer observe directly the application of the Snakes and Ladders game at State Junior High Shool 21 Pekanbaru to find out the effect of using Snakes and Ladders game on Students' Motivation in Speaking English based on the activity of experimental group.

2. Questionnaires

This game is used to find out how is the students motivation in speaking after applying the Snakes and Ladders game for experimental class, and control class without treatment. The questionnaire used like chart scales; they are strongly agree (1), Agree (2), undecided (3), Disagree (4), and strongly disagree (5).⁴

Table III.3

The Classification of Students' Score

Score	Categories
80 – 100	Very good
66 – 79	Good
56 – 65	Sufficient
40 – 55	Less
0 – 39	Fail

⁴Riduwan. *Skala Pengukuran Variabel-Variabel Penelitian*. (Bandung: Alfabeta.2005). P.13.

F. The Technique of Data Analysis

In analyzing the data, the researcher used scores of pre-test and post-test of experimental and control groups. This score was analyzed statistically. Both descriptive and inferential statistic. In this research, the researcher used these formulas:

1. Independent sample t-test

To find out whether there is significant difference or there is no significant difference between two or more variables can be analysed by using Independent Sample t_{test} .⁵ Gay added that the t-test for independent sample is used to determine whether there is probably a significant difference between the means of two independent samples.⁶ Independent sample t-test was used to find out the results of the first and second hypotheses. They were as follow:

- a. To find out whether there was significant difference of students motivation in speaking before giving the treatment by using Snakes and Ladders game for experimental class and non treatment for control class.
- b. To find out whether there was significant difference of students motivation in speaking after giving the treatment by using Snakes and Ladders game for experimental class and non treatment for control class.

⁵Hartono, *Statistik Untuk Penelitian* (Pekanbaru: Pustaka Pelajar, 2010). P.177.

⁶L.R Gay, *Op.cit.* P. 484.

In this research, the writer analyzed by using SPSS 16.

The formula was as follows:

$$t_o = \frac{M_x - M_y}{\sqrt{\left(\frac{SD_x}{\sqrt{N-1}}\right)^2 + \left(\frac{SD_y}{\sqrt{N-1}}\right)^2}}$$

Where:

t_0 = Table Observation

SD = Standard Deviation

M_x = Mean of variable x and

M_y = Mean of variable y

SD_x = Standard deviation of experimental group

SD_y = Standard deviation of control group

N = The Number of respondent

The t-table has the function to see if there is a significant difference among the mean of the score of both experimental and control group. The t-obtained value is consulted with the value of t-table at the degree of freedom (df) = (N1+N2)-2 which is statistically hypothesis:

Ha: $t_o > t\text{-table}$

Ho: $t_o < t\text{-table}$

H_a is accepted if $t_o > t\text{-table}$ or there is difference after giving the treatment by using Snakes and Ladders game toward students' motivation in speaking.

H_o is accepted if $t_o < t\text{-table}$ or there is no difference after giving the treatment by using Snakes and Ladders game toward students' motivation in speaking.

2. Paired sample t-test or Non-independent Sample t- t_{test}

Non-independent sample t- t_{test} is known also as Paired-Sample t_{test} . The researcher used this formula to obtain the result of the third hypothesis that was to find out whether there was significant effect by using Snakes and Ladders game toward students' motivation in speaking of the first grade students at State Junior High School 21 Pekanbaru. L.R Gay states that t test for non independent samples is used to compare groups that are formed by some type of matching or to compare a single group's performance on a pre- and posttest or on two different treatments⁷.

In this time, the writer used pre-test and post-test score of the experimental class in order to find the significant effect of using Snakes and Ladders game toward students' motivation in speaking of the first grade students at State Junior High School 21 Pekanbaru. To obtain the data, the writer used SPSS 16. The formula of paired-sample t_{test} :

⁷L.R Gay, *Op.cit.* P.488.

$$t = \frac{\bar{D}}{\frac{\frac{\sum D^2 - (\sum D)^2}{N}}{N(N-1)}}$$

D : Gain Score ($D=X_2-X_1$)

The t-table has the function to see if there is a significant effect among the mean of the score of both pretest and posttest. The t-obtained value is consulted with the value of t-table at the degree of freedom (df) = N-1 which is statistically hypothesis:

Ha: $t_o > t\text{-table}$

Ho: $t_o < t\text{-table}$

Ha is accepted if $t_o > t\text{-table}$ or there is significant effect after giving the treatment Snakes and Ladders game on students' motivation in speaking.

Ho is accepted if $t_o < t\text{-table}$ or there is no significant effect after giving treatment Snakes and Ladders game on students' motivation in speaking.

After ward, it is better to find the coefficient effect of T-test by following formula⁸:

$$r^2 = \frac{t^2}{t^2+n-1}$$

$$kp = r^2 \times 100\%$$

Where: kp : Coefficient effect

r^2 : Coefficient

⁸Ridwan, *Rumus dan Data Dalam Analisa Statistika*. (Bandung: Alfabeta, 2008). P.125.