

CHAPTER III

RESEARCH METHOD

A. Research Design

This research will be focused on students' habit in playing Subway Surfers game and students' vocabulary mastery. This research is a quantitative approach with correlation method. Correlation method is most appropriate for this study, because it uses two variables to find out the relationship between students' habit in playing Subway Surfers game and students' vocabulary mastery and show if they have any positive or negative relation and examine hypothesis.

Pearson Product Moment formula is used to correlate two variables and to find out the significance correlation between students' playing game (Subway Surfer) habit and their vocabulary mastery. The independent variable of this research is the habit in playing subway surfers game (variable X) and the students' vocabulary mastery is the dependent variable (variable Y).

B. Research Setting

This research is field at MTs Al-Ikhwan on Jl. Veteran RT.23 No.10 Kec. Banjarmasin Timur Kel. Sungai Bilu, Banjarmasin City Post Code 70236 and this study is done from October 2016 until February 2017.

C. Population and Sample

1. Population

Population is all cases, situations or individuals who share one or more characteristic. According to Sugiyono, Population is generalization that composed of the subject / object that has certain qualities and characteristics of the applied researcher to learn and then be concluded. Population of this research is the seventh grade students of MTs Al-Ikhwan academic year 2016/2017. It has three classes which consists of 65 students from three classes (class A, B, and C). It can be seen in the following table:

Table 3.1 The Population of The Research

No	Class	Population
1	A	19
2	B	24
3	C	22
Total		65

2. Sample

Sample is a subset of individuals from a given population. According to Suharsimi Arikunto (2006, p.51), Sample is a part of population which has same characteristics. There are two ways in selecting a sample. First, if the population is less 100, all population can be sampled. Second, if the population is over 100, the researcher can take 10%-15% or 20%-25% from all population as a sample. Based on the

explanation above, the researcher will take all of the students of seventh grade of MTs Al-Ikhwan academic year of 2016/2017 as the sample.

D. Technique of Collecting Data

In collecting the data, the instruments of this research are questionnaire to measure the students' habit in playing subway surfers game (variable X) and vocabulary test to measure the students' vocabulary mastery (variable Y).

1. Questionnaire

Questionnaire is a list of questions provided to others who are willing to respond (respondents) as requested by the researchers. There are two kinds of questionnaire, they are open and enclosed questionnaire. In this research, the researcher will distribute questionnaire to the students aimed to know about student habit in playing subway surfers game. Total items of the questionnaire are 20 items items and using five alternatives based on the Likert's scale types. Likert's scale is used to measure attitude, opinion, perception based on the certain object or phenomena (Siregar, 2013, p.50). The researcher will use questionnaire to get the data about students' habit in playing subway surfers game.

2. Vocabulary Test

In this study, the achievement test is used to measure student's vocabulary mastery. A test is a method of measuring a person's ability, knowledge, or performance in a given domain (Brown, 2010 p.3). A test is used to collect the data of students' vocabulary mastery (variable Y). To measure students' vocabulary mastery, the students will answer 10

multiple choice and 10 matching. Total 20 questions are about game subway surfers. There are two parts for the test, the first part is multiple-choice that each of true answer gets 5 point and the second part is matching that each of true answer gets 5 point. The total point or score for the test is 100.

3. Technique of Data Analysis

1. Questionnaire Data

The researcher categorized the score resulted of questionnaire data or also called independent variable (X) into the following criteria. If a student chooses *Always (selalu)*, the student will get score 5. This is a table to understand about Likert's scale types:

Table 3.2 Likert Scale

Likert's scale types	Score
Always	5
Often	4
Sometimes	3
Seldom	2
Never	1

After calculating all the result in the questionnaires, the researcher determines the students' habit strength in watching English movies on personal computer. According Sudijono (2006, pp.175-176), the formula in interpreting the score is:

- a. Finding the mean

$$M_x = \frac{\sum fX}{N}$$

- b. Finding the standard deviation

$$SD_x = \sqrt{\frac{\sum fx^2}{N}}$$

After that, the researcher then determines the Classifying the scores into three categories bad, fair, and good by applying this formula

- c. Classifying the scores into three categories

-Top up of habit in playing subway surfers score = $M_x + 1 SD_x$

-Bottom of habit in playing subway surfers = $M_x - 1 SD_x$

-Explanation:

M_x = mean of students' habit in playing subway surfers

SD_x = Standard deviation of students' habit in playing subway surfers

$\sum fx$ = Total score of students' habit in playing subway surfers

N = Total Number of the respondents

To test instrument before turn into field, researcher will use Alfa Cronbach formula to get reliability test, as follow:

$$\alpha = \left(\frac{K}{K-1} \right) \left(\frac{s_r^2 - \sum s_i^2}{s_x^2} \right)$$

α = alfa cronbach reliability coefficient

k = total questioner number

$\sum s_i^2$ = total variants score item

s_x^2 = all variants score item

With :

If $\alpha = >0.90$ the reliability is perfect

= 0.70-0.90 the reliability is high

= 0.50-0.70 the reliability is moderate

= <0.50 the reliability is low

The questionnaire and the test will be tested in other school which is almost similar with the situation in MTs Al-Ikhwan.

After collecting data, the researcher will take some step to analyze data.

The analysis step will as follow:

1. The score of vocabulary test

The students' vocabulary test is also called dependent variable (Y). The students will answer 10 multiple choice and 10 matching. There are two parts for the test, the first part is multiple-choice that each of true answer gets 5 point, the second part is matching that each of true answer gets 5 point. The total score for the test is 100. In classifying the score, the researcher uses the category which is submitted by David P. Harris (1969, p. 134), as follows:

Table 3.3 David P. Harris Scoring

Score	Category
80 – 100	Excellent
70 – 79	Good
60 – 69	Fair
50 – 59	Low
0 – 49	Poor

After that, the researcher determines the students' English vocabulary test generally by applying this formula:

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

- The correlation between students' habit in playing subway surfers game and their vocabulary mastery

After the data of students' habit in playing subway surfers game and their vocabulary mastery are collected, the researcher examines research hypothesis by calculating and correlating the data of X and Y variables. The examination uses Product Moment.

The equation for Pearson (r) is as follow:

$$r_{xy} = \frac{N \cdot \sum x \cdot y - (\sum X)(\sum Y)}{\sqrt{[N \cdot \sum X^2 - (\sum X)^2] [N \cdot \sum Y^2 - (\sum Y)^2]}}$$

$$r_{xy} = \frac{\sum x \cdot y}{\sqrt{(\sum x^2)(\sum y^2)}}$$

r_{xy} = correlation coefficient between variable X and Y.

$\sum x$ = the values for the X variable.

$\sum y$ = the values for the Y variable.

$\sum x.y$ = the values for the XY variable.

However, before using the formula, the researcher does normality test and linearity test because these tests are prerequisite in using Pearson product moment formula. Normality test is done to determine normal distribution and linearity test is used to know the relation between dependent and independent variable. In doing normality test and linearity, the researcher uses SPSS version 23.

The criteria in determining normal distribution of the data are as follows:

- A normal distribution of data, if the value of significance $> 0,05$
- An abnormal distribution of data, if the value of significance $< 0,05$

The criteria in determining the linearity of the variables are as follows:

- If the value of significance $> 0,05$. It means that the variables are linear
- If the value of significance $< 0,05$. It means that the variables are linear

Then, the researcher will interpret the value of r_{xy} by comparing it with r_t with significant value 0,05. The result of correlation between X and Y variables will be compared with the value (r_{table}). The table value is 5 % or 1 %. If $r_{xy} > r_{table}$ is significant or there is a correlation between students' habit in playing subway surfers game and their vocabulary

mastery. If $r_{xy} < r_{table}$ is not significant. It means that there is no correlation between students' habit in playing subway surfers game and their vocabulary mastery. A positive correlation indicates that the score move together either increasing or decreasing. A negative correlation indicates that the scores on one variable rise and scores on other decrease. Correlation does not imply caution means two events are in some ways correlated does not mean that on necessarily cause the other. The ranging of correlation coefficient is as follow (*Sudijono, 2006, p.193*):

Table 3.4 Correlation Coefficient

r_{xy}	Interpretation
0,00 – 0,20	There is a very low correlation between variable X and Y
0,20 – 0,40	There is a low correlation between variable X and Y
0,40 – 0,70	There is a medium correlation between variable X and Y
0,70 – 0,90	There is a high correlation between variable X and Y
0,90 – 1,00	There is a very high correlation between variable X and Y

Furthermore, in order to test the significance of the product moment correlation can be done in two ways:

1. Comparing the value r_{count} with r_{table} where n is the number of respondents and the significance level of 1% or 5%. Test criteria of significance is received H0 and H1 rejected if the $r_{\text{count}} \leq r_{\text{table}}$, otherwise reject H0 and accept H1 if $r_{\text{count}} > r_{\text{table}}$.
2. Using the formula of product moment correlation significance test with $df = n - 2$ and a significance level of 1% or 5%. Test criteria of significance is H0 received and H1 rejected if $t_{\text{count}} \leq t_{\text{table}}$, otherwise reject H0 and accept H1 if $t_{\text{count}} > t_{\text{table}}$. The formula product moment correlation tests of significance are shown below.

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

Furthermore, to determine the contribution of the independent variable (x) on the dependent variable (y) can be calculated using the coefficient of determination by squaring the correlation coefficient, then multiplied by 100%. The determination coefficient shows that the percentage of independent variables (x) on the dependent variable (y), while the rest influenced by other factors. The coefficient of determination can be formulated as follows:

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

Note:

KD = Determination coefficient

r = Correlation coefficient