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## CHAPTER III

### RESEARCH METHODOLOGY

#### A. The Research Design

This research was an experimental research. According to Ary et al. (2006), experiment is a scientific investigation in which the researcher manipulates one or more independent variables, controls any other relevant variables, and observes the effect of the manipulations on the dependent variable(s). Therefore, there were two variables used in this research. They are independent variable or variable X as the use of Pictionary game and dependent variable or variable Y as the students' mastery in vocabulary. Moreover, the design of this research was Quasi-Experimental design with the Non-Equivalent control group. Gay (2000) says that when it is not possible to randomly assign participants to groups, quasi-experimental designs are available to the researcher. Thus, the researcher choose the quasi-experimental design in order to investigate all students in the groups so that the research project would not disturb the teaching and learning process at the school.

In conducting the research, two classes of the seventh grade students at State Junior High School 1 Rambah Hilir had been participated. The first class was experimental group that is treated by using Pictionary game technique and the second class was control group that is treated without using pictionary game technique. However, the materials given and purposed of the research to each group will were the same.

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There were two kinds of tests that were used in this research. They were pre-test that was given before doing the treatment and post-test that was given after doing the treatment. According to Cresswel (2008), the design of this research could be described as follows:

**Table III.1**  
**The Research Design**

Group	Pre-test	Treatment	Post-test
Experiment	O <sub>1</sub>	X	O <sub>2</sub>
Control	O <sub>3</sub>	-	O <sub>4</sub>

Note:

- 1) O<sub>1</sub> = Pre-test for experimental group
- 2) O<sub>2</sub> = Post-test for experimental group
- 3) O<sub>3</sub> = Pre-test for control group
- 4) O<sub>4</sub> = Post-test for control group
- 5) X = Treatment by using Content-Purpose-Audience Strategy
- 6) - = No treatment

**B. The Location and Time of the Research**

The research was conducted at State Junior High School 1 Rambah Hilir at Sudirman street, Muara Rumbai, Rokan Hulu. It was conducted on April to Mei 2018.

**C. Subject and Object of the Research**

The subject of this research was the seventh grade students of State Junior High School 1 Rambah Hilir. The object of this research was the use of Pictionary Game for Students' Vocabulary Mastery.

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## D. The Population and Sample of the Research

### 1). Population

According to Gay (2000), population is the group of interest to the researcher, the group to which she or he likes to results of the study to be generalized. The population of this research was the Seventh grade students at State Junior High School 1 Rambah Hilir. There are Three classes of the Seventh grade in this school. The number of the Seventh grade students Junior High School 1 Rambah Hilir was 77 students. The specification of population can be seen on the table below :

**Table III.2**  
**The Total Population of the Seventh Grade Students**  
**at State Junior High School 1 Rambah Hilir**

No	Class	Total
1.	VII A	25
2.	VII B	25
3.	VII C	27
Total		77

2).

**Sample**

The population above is large enough to be all taken as sample of the research. Based on the population above, the researcher took two classes for the samples by using Pictionary Game. According to Gay (2002), cluster sampling selects based on group not individually, all the members of selected group have similar characteristic. It means that the subject of this research has the same material, the same grade, and the same teacher in teaching of these classes.

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Based on the explanation above, to find the sample the researcher used lottery by passing out small rolled paper marked by sequence name of the class. The first paper that came out of the bottle was the experimental class in the second paper that came out the bottle was the control class. Then after passing out the paper, the samples of this research were class VIIA as the experimental class and class VIIB as the control class.

**Table III.3**  
**The Sample of the Research**

No	Class	Total	
1	VII A	25	Experimental class
2	VII B	25	Control class
Total		50	

**E. Technique of Data Collection**

The data collection of this research collected by doing pre-test and post-test. According to Creswell (2008), pre-test provides a measure on some attribute or characteristic that you assess for participants in an experiment before they receive a treatment. After the treatment you another reading on attribute or characteristic. A Post-test is a measure on some attribute or characteristic that is assessed for participant in an experiment after the treatment.

In this research, the researcher used test as the technique of collecting data. The test type of the test is multiple choices test. The test consist of 20 items for pre-test and 20 items for post-test. Written test will be divided in two sections.

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**a. Pre-Test**

Pre-Test was given in beginning or before the treatment. It was given to every participants both experimental and control classes. It was used to find out if they are in same level at the starting point or not.

**b. Post- Test**

post test was given to students after giving treatment of the using of pictionary game to the class. This test was used to know the effect.

After the students did the test, the researcher then took the total score from the result of the Vocabulary Arikunto (2009) points out that the classification of the students' score will be shown below.

**Table III.4**  
**The Classification of Students' Score**

Score	Categories
80-100	Very good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

**F. The Validity and Reliability of the Test**

The quality of instrument was very crucial. It should be valid and reliable. Thus, the researcher used a number of procedures to measure the instrument used. They were:



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## 1). Validity

Before carrying out a test, it is necessary to know the validity of instrument. According to Hughes (2003), a test is said to be valid if it measures accurately what it is intended to measure. It means that a test is valid if it really measures what we actually want to be measured.

In this research, the researcher measured the students' Vocabulary mastery. Therefore, to measure the validity of test, the researcher used content validity. Muijs (2004) also added content validity refers to whether or not the content of the manifest variables (e.g. items of a test or questions of a questionnaire) is right to measure the latent concept (self-esteem, achievement, attitudes, etc.) that we are trying to measure.

Finally, the researcher determined the validity by referring to the material that was given to the students based on the students' text book. In other words, the test given to the students was based on the material that they had learned. To find out the validity of test, researcher calculated it by using SPSS 22 version. The standard value of validity is  $r_{\text{item}} > r_{\text{table}}$ . Based on the try out result, it was determined that all of the items were valid. The result of try out is as follows:

Table III.5

The Item Validity of Try Out

Item	r-item	r-table	Result
Item 1	0.44	0.40	Valid
Item 2	0.58	0.40	Valid
Item 3	0.49	0.40	Valid
Item 4	0.22	0.40	Invalid
Item 5	0.39	0.40	Invalid
Item 6	0.54	0.40	Valid
Item 7	0.57	0.40	Valid

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Item 8	0.55	0.40	Valid
Item 9	0.42	0.40	Valid
Item 10	0.58	0.40	Valid
Item 11	0.43	0.40	Valid
Item 12	0.57	0.40	Valid
Item 13	0.40	0.40	Valid
Item 14	0.47	0.40	Valid
Item 15	0.53	0.40	Valid
Item 16	0.48	0.40	Valid
Item 17	0.48	0.40	Valid
Item 18	0.48	0.40	Valid
Item 19	0.62	0.40	Valid
Item 20	0.35	0.40	Invalid
Item 21	0.49	0.40	Valid
Item 22	0.54	0.40	Valid
Item 23	0.49	0.40	Valid
Item 24	0.48	0.40	Valid

Based on the table above it was clear that there were 3 invalid items of 24 items. Thus, the researcher only took 20 valid items as instrument.

## 2). Reliability

A test must be reliable as measuring instrument. Reliability is necessary characteristic of any good test for it to be valid at all a test must first be reliable as a measuring instrument. If the students are given the same test on two different occasions, the test should yield similar results (Brown, 2004). The good quality of instrument is determined by the instrument reliability. According to Cohen et.al, (2007), the guidelines for reliability is as follows:

**Table III.6**  
**Category of Reliability**

No	Reliability	Category
1	>0.90	Very highly reliable
2	0.80-0.90	Highly reliable
3	0.70-0.79	Reliable
4	0.60-0.69	Minimally reliable
5	<0.60	Unacceptably low reliability

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In this research, the researcher used software SPSS 23 version to calculate the reliability of test. The result of multiple choice test reliability is as follows:

**Table III.7**  
**Reliability Statistics**

Cronbach's Alpha	N of Items
.856	24

Based on the table III.6 The reliability of test was 0.856. the test categorized into Highly Reliable level.

### **G. The Technique of Data Analysis**

According to Pallant (2010), an independent samples t-test is used to compare the mean score, on some continuous variable, for two different groups of participants. So, the researcher used independent samples t-test to compare the mean score in two different groups; control class and experimental class.

After finding the difference, the researcher found out the effect size of the phenomenon. Pallant (2010) states that effect size statistics provide an indication of the magnitude of the differences between your groups (not just whether the difference could have occurred by chance). The effect size statistic used in this research is eta squared. For t-test, SPSS does not provide eta squared values. The formula of eta squared is as follows:



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$$\eta^2 = \frac{t^2}{t^2 + (n_1 + n_2 - 2)}$$

Where:

$\eta^2$  : Eta Square

$t$  :  $t$  obtained

$n_1$  : The number of experimental class

$n_2$  : The number of control class

In order to interpret the eta squared values, the guideline quoted from Cohen (1988) in Pallant (2010) can be seen as follows:

**Table III.8**

**Interpretation of Eta Squared for Effect Size**

No.	Value	Effect
1.	0.01	Small Effect
2.	0.06	Moderate Effect
3.	0.14	Large Effect

\* Adapted from Cohen (1988)

Statistically the hypotheses are:

$H_a = t_o > t_{\text{table}}$

$H_o = t_o < t_{\text{table}}$

Criteria for hypothesis:

- a.  $H_a$  is accepted if  $t_o > t_{\text{table}}$  or there was a significant effect of using Pictionary Game for Students' Vocabulary Mastery at State Junior High School 1 Rambah Hilir.

- b.  $H_0$  is accepted if  $t_o < t_{table}$  or there was no significant effect of using Pictionary Game for Students' Vocabulary Mastery at State Junior High School 1 Rambah Hilir.

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