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CHAPTER III

METHOD OF THE RESEARCH

A. Research Design

The design of this research was an experimental research. According to Creswell, (2009) Experiment is testing an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable. Research is a kind of experimental research. According Gay et.al (2012), experimental research is the only type of the research that can test hypotheses to establish cause-effect relationship. According to Creswell (2009), The types available in experiments are pre-experimental designs, true experiments, quasi-experiments. With pre-experimental designs, the researcher studies a single group and provides an intervention during the experiment. This design does not have a control group to compare with the experimental group. In quasi-experiments, the investigator uses control and experimental groups but does not randomly assign participants to groups. In a true experiment, the investigator randomly assigns the participants to treatment groups. In this research, the researcher used pre-experimental design by using one group of pretest-posttest design. In relation to the statements, Cohen, (2007) stated that pre experiment design: the one group pretest-posttest design; the one group posttests only design: the post test was only nonequivalent design.

In conducting the research, one class of the second-year students at State Junior High School 4 Pekanbaru has participated. The class was get pretest at

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the beginning and posttest at the end of this research. The pretest and posttest a result was compared in order to determine the effect of the treatment. Gay (2012) explained that this research called the One-group pretest-posttest Design; involve a single group that is pre-tested, exposed to a treatment, and post-tested scores. Furthermore, Cohen (2007) stated that type of this research can be designed as follows:

Table III.1
One Group Pretest and Posttest Design

Class	Pre-Test	Treatment	Post-Test
B	T_1	√	T_2

B. Location and Time of the Research

This research was conducted at the second-year students at State Junior High School 4 Pekanbaru. It is located on Dr. Sutomo Street. This research was conducted on March 2017.

C. Subject and Object of the Research

The subject of this study was the second-grade students at State Junior High School 4 Pekanbaru while the object is analyzing the effect of using word card strategy on students' vocabulary memory.

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D. The Population and Sample of the Research

1. The Population of the Research

The population of this research is all students of the second grade at State Junior High School 4 Pekanbaru in 2016/2017 academic year. It consists of 10 classes; they are VIII 1, VIII 2, VIII 3, VIII 4, VIII 5, VIII 6, VIII 7, VIII 8, VIII 9, VIII 10 class. The total population of this research is 371 students the specification of population can be seen on the table III.2 below:

Table III.2
The Population of the Second Grade Students of
SMPN 4 Pekanbaru

No	Class	Number of Students
1.	VIII 1	37
2.	VIII 2	37
3.	VIII 3	36
4.	VIII 4	37
5.	VIII 5	37
6.	VIII 6	37
7.	VIII 7	36
8.	VIII 8	36
9	VIII 9	35
10	VIII 10	34
	Total	371

2. The Sample of the Research

Based on the limitation of the research, the researcher took one class for the sample because the researcher used pre-experimental designs that do not need control class. The researcher choose sample by using cluster random sampling. According to Gat et al, (2012) cluster sampling randomly select

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groups, not individuals. Therefore, the researcher selected one group of students to sample in this research. They are students of VIII.9 as a sample.

E. The Technique of Collecting the Data

Test was used to find out the students' vocabulary memory. According to Brown (2004) test is a method to measure a person' ability, knowledge, or performance to perform the language. The type of the test used was multiple choices, checklist-test. The researcher gave 15 multiple choices and 5 checklist-tests intended to obtain students' vocabulary memory in recount text at state junior high school 4 Pekanbaru.

1. Pre-test

According to Creswell, (2012) pretest provides a measure on some attribute or characteristic that you asses for participant in an experimental before they receive the treatment. Pretest was used to collect the data about students' vocabulary memory in recount text reading before giving treatment to the experimental class. The test was being given to class VIII.9 as experimental class.

2. Post-test

Posttest was used to collect the data about vocabulary in recount text of the students after giving treatment to the experimental class. According to Gay et al (2012) post test score are compared to determine the effectiveness of the treatment. So that the score of post-test was being compared to know

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the effect of the treatment. The test would be given to class VIII.9 as experimental class.

There were twenty questions given to the students. The questions were based on the indicators of vocabulary. The indicators consisted of four indicators and each of which had five questions. It can be seen from the blue print of the test below:

Table III. 3
The Blueprint of the Test

No	Indicators	Kind of Test	Item numbers	Total
1	Students ability to encounter new words and translate the word	Checklist Test	1,2,3,4,5	5
2	Students ability can differentiate Noun, Verb, adverb, and Adjectives	Multiple Choice	1,2,3,4,5	5
3	Students ability to find the synonym of words	Multiple Choice	1,2,3,4,5	5
4	Students ability to use the word in the text	Multiple Choice	1,2,3,4,5	5
Total				

F. The Validity and Reliability of Instrument Test

1. Validity of the Instrument

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 study, the researcher wanted to measure the students' vocabulary memory. Therefore, to measure the validity of test, the researcher used

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content validity. Muijs (2004) also added content validity refers to whether or not the content of the manifest (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 were based on the material that they had learned. To find out the validity of test, researcher calculated it by using SPSS 23 version. The standard value of validity is $r_{item} > r_{table}$. 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.4
The Item Validity of Try Out

Item Number	r-item	r-table	Result
1.	0.50	0.33	Valid
2.	0.50	0.33	Valid
3.	0.40	0.33	Valid
4.	0.40	0.33	Valid
5.	0.69	0.33	Valid
6.	0.74	0.33	Valid
7.	0.52	0.33	Valid
8.	0.54	0.33	Valid
9.	0.61	0.33	Valid
10.	0.50	0.33	Valid
11.	0.40	0.33	Valid
12.	0.39	0.33	Valid
13.	0.42	0.33	Valid
14.	0.37	0.33	Valid
15.	0.44	0.33	Valid
16.	0.76	0.33	Valid
17.	0.79	0.33	Valid
18.	0.79	0.33	Valid
19.	0.76	0.33	Valid
20.	0.56	0.33	Valid

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2. Reliability of the Instrument

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 Grounlund in 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.5
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

In this research, the researcher used software SPSS 23 version to calculate the reliability of test. There were two kinds of questions used in the test, so there were two calculations of reliability. The result of multiple choice test reliability is as follows:

Reliability Statistics	
Cronbach's Alpha	N of Items
.764	15

The reliability of test was 0.764. It is categorized into reliable level.

Then, the result of short-answer test reliability is as follows:

Reliability Statistics	
Cronbach's Alpha	N of Items
.772	5

The reliability of test was 0.772. It is categorized into reliable level.

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G. The Technique of Analyzing the Data

In order to find out whether there is a significant effect of using word card Strategy on students' vocabulary memory at the second grade of Junior High School 4 Pekanbaru the data are analyzing statistically. In analyzing the data, the researcher used statistical method that is paired sample t-test formula by using SPSS.23.0 version.

After found the difference, the researchers' found out the effect size of the phenomenon. Pallant (2010) stated that effect size statistic 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:

$$\text{Eta squared} = \frac{t^2}{t^2 + (N_1 - 1)}$$

Where:

n^2 : Eta Square

t : t obtained

n_1 : The number of experimental class

The guidance here from Cohen (1988) is that 0.01= a very small effect; 0.06= a moderate effect; and 0.14= a very large effect.