CHAPTER III
METHOD OF RESEARCH

A. Research Design

This research was an experimental research. Gay (2000:367) states that "Experimental resarch is the only type of research that can test hypotheses to establish cause-and-affect relarionships. The design of this research was a quasi-experimental research by using nonequivalent experimental. According to Cresswell (2012:309) "Quasi-experiments include assignment,but not random assignment of participants to groups". According to Campbell and Stanley, (1963: 47) Non-Equivalent experimental involves two groups (experimental and control group), both of them given a pretest and posttest in which both groups do not have pre-experimental sampling equivalent. This research consisted of two variables, they were X which refers to Vocabulary Journal strategy as an independent variable, and Y refers to students' vocabulary mastery as a dependent variable. According to Lousi (2007:283), the type of this research can be designed as follows:

Table 1II.1
Research Design

Experiment	O_1	X	O_2
Control	O_3		O_4

Where :

X   : Treatment

O_1 : Pre-test

O_2 : Post-test

O_3 : Pre-test

O_4 : Post-test

B. Time and Location of the Research

The location of this research was Junior High School 1 PangkalanKuras, Riau Province. The location of Junior High School 1 Pangkalan Kuras is at Jl. Kampung Baru No. 91 Kec. Pangkalan Kuras. This research was conducted from february to march 2016.

C. Subject and Object of the Research

The subject of this research was the Second grade students of Junior High School 1 Pangkalan Kuras in 2015/2016 academic year. While the object of this research was the effect of using Vocabulary Journal Strategy on students' Vocabulary Mastery at Junior High School 1 Pangkalan Kuras.

D. Population and Sample

1. Population

Gay (2000:122) states that the population is the group of interest to the researcher, the group to which she or he would like the result of the study to be generealizable. The population of this research was the second year

students of Junior High School 1 Pangkalan Kuras.in 2015/2016 academic

year. It consisted of 8 classes, the population can be seen on the table below:

Table 1II.2
The Total Population of the Second Year Students of Junior High School 1
Pangkalan Kuras

No	Class	Students		Total
		Male	**Female**	
1	VIII A	9	16	25
2	VIII B	12	13	25
3	VIII C	16	14	30
4	VIII D	10	20	30
5	VIII E	17	13	30
6	VIII F	17	13	30
7	VIII G	15	15	30
8	VIII H	9	16	25
Total		**105**	**120**	**225**
		225		

2. Sample

Cresswell (2012:142) noted that sample is a subgroup of the target population

that the researcher plans to study for generalizing about the target population.

Considering that population was bigger, the writer took the sample of the

population. In this research, the writer took two classes by using Cluster Sampling

technique. According to Gay (2000:129), "Cluster Sampling is most useful when

the population is very large or spread out over a wide geographic area". Cluster

Sampling randomly selects groups, not individuals. All the members of selected

groups have similar characteristic.

The choosen classes were VIII.A and VII.B. The VIII.A class was experimental class and the VIII.B was control class.

Table 1II.3
The Sample of the Research

No.	Class	Type	Total
1	VIII A	Experimental class	25
2	VIII B	Control class	25
Total			50

E. Technique of the Data Collection

The technique of collecting data of this research was by doing pre-test and post-test through multiple choices test which consisted of 20 items and Every multiple choice item consists of four answer options (a, b, c, and d). Creswell (2012:297) states that "a pretest provides a measure on some attribute or characteristic that you assess for participants in an experiment before they receive a treatment. A posttest is a measure on some attribute or characteristic that is assessed for participants in an experiment after a treatment. The blue print of the test is classified as follows:

Table 1II.4
Blue print of the test (Pre-Test)

No	Indicators	Item Number
1	Comprehend the verb correctly	1, 5, 9, 13, 17
2	Use the noun correctly	2, 6, 10, 14, 18
3	Finding the meaning of the adverb based on context	3, 7, 1, 15, 19
4	find the synonym, antonym, and translation in the term of adjective	4, 8, 12, 16, 20

Table 1II.5
Blue print of the test (Post-Test)

No	Indicators	Item Number
1	Comprehend the verb correctly	2, 6, 10, 14, 18
2	Use the noun correctly	1, 5, 9, 13, 17
3	Finding the meaning of the adverb based on context	4, 8, 12, 16, 20
4	find the synonym, antonym, and translation in the term of adjective	3, 7, 1, 15, 19

F. Validity and Reliability of the Test

1. Validity of the Test

According to Hughes (1989:22), a test is said to be valid it if measures accurately what it is intended to measure. Gay (2000:161) stated that the validity is the appropriateness of the interpretations made from the test score. There are

three kinds of validity that consist of content validity, construct validity, and criterion validity.

Before the test given to the sample of this research, the writer did try out of the test items. The test given to the students was considered not too difficult or not too easy. According to Arikunto (2008:208), the test is accepted if the degree of difficulty is between 0.30-0.70. It was determined by finding the difficulty level of each item. The formula for item difficulty is as follows:

$$P = \frac{B}{JS}$$

Where

P: Index of difficulty

B: The number of correct answer

Js: The number of students

The difficulty level of an item shows how easy or difficult a particular item in a test. The items that do not reach the standard level of difficulty are excluding from the test and they are changed with new items that are appropriate. The standard level of difficulty used is <0.30 and >0.70. It means that an item is accepted if the level of difficulty is between 0.30-0.70, and it is rejected if the level of difficulty is less than 0.30 (the item is too difficult) and over than 0.70 (the item is too easy).

Table III.6
Comprehend the Verb Correctly

Variable	Comprehend the Verb Correctly					N
Item No.	1	5	9	13	17	
Correct	17	15	14	14	17	
P	0.68	0.6	0.56	0.56	0.68	25
Q	0.32	0.4	0.44	0.44	0.32	

$Q = 100 - P$ $\qquad\qquad$ $P = B/JS$

Based on the table above, the item numbers of question for comprehend the verb correctly are number 1, 5, 9, 13, and 17. Item number 1 shows the proportion correct answer 0.68, item number 5 shows the proportion of correct answer 0.6, item number 9 shows the proportion of correct answer 0.56, item number 13 shows the proportion of correct answer 0.56 and item number 17 shows the correct answer 0.68. The total correct answer for comprehending the verb correctly is 0.61. Based on standard level of difficulty "p" is >0.30 and <0.70. So, the items for comprehending the verb correctly were accepted.

Table III.7
Use the Noun Correctly

Variable	Use the Noun Correctly					N
Item No.	2	6	10	14	18	
Correct	16	17	16	11	17	
P	0.64	0.68	0.64	0.44	0.68	25
Q	0.36	0.32	0.36	0.56	0.32	

$Q = 100 - P$ $\quad\quad\quad\quad$ $P = B/JS$

Based on the table above, the item numbers of question for using the noun correctly are number 2, 6, 10, 14,, and 18. item number 2 shows the proportion correct answer 0.64, item number 6 shows the proportion of correct answer 0.68, item number 10 shows the proportion of correct answer 0.64, , item number 14 shows the proportion of correct answer 0.44 and item number 18 shows the correct answer 0.68. The total correct answer for using the noun correctly is 0.61. Then, based on standard level of difficulty "p" is >0.30 and <0.70. So, the items for using the noun correctly were accepted.

Table III.8
Find the Meaning of the adverb Based on Context

Variable	Find the meaning of the adverb based on context					N
Item No.	3	7	11	15	19	
Correct	16	17	10	15	17	25
P	0.64	0.68	0.4	0.6	0.68	
Q	0.36	0.32	0.6	0.4	0.32	

$Q = 100 - P$ $\qquad\qquad$ $P = B/JS$

Based on the table above, the item numbers of question for finding the meaning of the adverb based on context are number 3, 7, 11, 15, and 19. Item number 3 shows the proportion correct answer 0.64, item number 7 shows the proportion of correct answer 0.68, item number 11 shows the proportion of correct answer 0.4, item number 15 shows the proportion of correct answer 0.6 and item number 19 shows the correct answer 0.68. The total correct answer for finding the meaning of the adverb based on context test is 0.6. Then, based on standard level of difficulty "p" is >0.30 and <0.70. So, the items for finding the meaning of the adverb based on context were accepted.

Table III.9

Find the Synonym, Antonym, and Translation in the Term of Adjective (meaning-relationships)

Variable	Find the synonym, antonym, and translation in term of adjective (meaning-relationships)					N
Item No.	4	8	12	16	20	
Correct	14	16	16	16	17	25
P	0.56	0.64	0.64	0.64	0.68	
Q	0.44	0.36	0.36	0.36	0-.32	

$Q = 100 - P$ $P = B/JS$

Based on the table above, the item numbers of question for for finding the synonym, antonym, and translation in term of adjective test are number 4, 8, 12, 16, and 20. item number 4 shows the proportion correct answer 0.56, item number 8 shows the proportion of correct answer 0.64, item number 12 shows the proportion of correct answer 0.64, item number 16 shows the proportion of correct answer 0.64 and item number 20 shows the correct answer 0.68. The total correct answer for finding the synonym, antonym, and translation in term of adjective is 0.63. Then, based on standard level of difficulty "p" is >0.30 and <0.70. So, the items for finding the synonym, antonym, and translation in term of adjective were accepted.

2. The Reliability of the Test

A test must first be reliable as meaning instrument. Reliability is a necessary characteristic of good test. According to Brown (2004:20), a reliable test is consistent and dependable. Reliability has to do with accuracy of measurement. The test is reliable when an examinee's result is consistent on repeated measurement.

To obtain the reliability of the test given, the writer used Kuder Richardson 20 (K-R 20) formula to calculate the reliability of the test formula as follows (Arikunto (2008:101)):

$$r_{ii} = \left(\frac{n}{n-1}\right)\left(\frac{st^2 - \sum p_i q_i}{st^2}\right)$$

Where:

n= Number of item in the instrument

p_i= Proportion of subjects who answer the item correctly

q_i= Proportion of subject who answer the item with the wrong (1-pi)

$\sum p_i q_i$ = the multiplication result between p and q

S^t = total variance

The reliability coefficients for good identified kinds of structure text and reading comprehension test are expected to exceed 0.0 and closed 1.00. Heaton (1988:168) stated that the reliability of the test is considered as follows:

0.00-0.20: reliability is low

0.21-0.40: reliability is sufficient

0.41-0.70: reliability is high

>0.70: reliability is very high

$$St^2 = \frac{\sum Xt}{n}$$

$$= \frac{269.44}{25}$$

$$= 10.77$$

$$r_i = \left(\frac{n}{n-1}\right)\left(\frac{St^2 - \sum pq}{St^2}\right)$$

$$= \left(\frac{20}{20-1}\right)\left(\frac{10.77-4.61}{10.77}\right)$$

$$= \left(\frac{20}{19}\right)\left(\frac{6.16}{10.77}\right)$$

$$= 1.052\,(0.57)$$

$$= 0.601701$$

To know the test is reliable or not, the value of r_{11} must be compared with r product moment. The value of r_{11} must be higher than r table. From the calculation above the value of r_{11} is 0.601701. Then, the r_t at 5% level of significance is 0.2787 While r_t at 1% level of significance is 0.3610. So, it can be concluded that $0.381 < 0.601701 > 0.487$. in other words, the instrument is reliable because the value of r_{11} is higher than r_t.

G. Technique of Analyzing Data

In this research, the data were analyzed by using a statistical software of Statistical Product and Service Solutions (SPSS) 16 version. The result of t-test analyzed could be seen on the SPSS output.

After computing t-test, it obtains the degree of freedom that is used to determine whether the t-score is significant or not. The obtained value is consulted with the value of t-table by using degree of freedom (df) = (NI+N2)-2 statically hypothesis (Hartono,2004:209) :

1. H_o is accepted if $t_o<$t-table or there is no significant difference between using and without using Vocabulary Journal strategy on students' vocabulary mastery at State Junior High School 1 Pangkalan Kuras.

2. H_a is accepted if $t_o>$ t-table or there is any significant difference between using and without using Vocabulary Journal strategy on students' vocabulary mastery at State Junior High School 1 Pangkalan Kuras.

Based on Arikunto (2009:245), the interpretation of students score is classified as follows:

Table III. 10

The Classification of Students' Score

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