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## CHAPTER III

### RESEARCH METHOD

#### A. Research Design

This research was an experimental research. According to Creswell (2012, p.295), the experimental research is conducted when the researcher intends the possible cause and effect between independent variable (variable X) and dependent variable (variable Y). It consisted of two variables, the first is OSRS as variable X and the second is the students' reading comprehension as variable Y. Because, the population of this research was large, the researcher used the quasi-experimental design. Quasi-experimental designs have experiment group and control group. There are two kinds of test; pre-test and post-test.

This research was conducted at Junior High School 09 Pekanbaru. The time of this research was conducted on July to August 2017. The population of the research was the eighth grade of Junior High School 09 Pekanbaru. There were 9 classes of the second grade students. They were 281 students all of them. The writer took two classes as a sample in this research. The total sample was 60 students. According to Creswell (2012, p.310), the design can be seen in the following table below:

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

Class	Pre-test	Treatment	Post test
<b>Experiment Class</b>	<b>O1</b>	<b>T</b>	<b>O2</b>
<b>Control Class</b>	<b>O3</b>	<b>-</b>	<b>O4</b>

Where:

- O1 = Pre-test of experimental group  
 O3 = Pre-test of control group  
 O2 = Post-test of experimental group  
 O4 = Post-test of control group  
 T = Treatment

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

The research was conducted at the second year students of Junior High School 09 Pekanbaru located at Harapan Raya Street Pekanbaru, in 2017/2018 of Academic Year. The research was conducted from July to August 2017.

#### **C. The Subject and The Object of The Research**

The subject of this study was the second year students of State Junior High School 09 Pekanbaru. The object of the research was the effect of OSRS Technique on students' reading comprehension of the eighth grade at State Junior High School 09 Pekanbaru.

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## D. The Population and Sample of the Research

### 1. Population

The population of the research was the eighth grade students of Junior High School 09 Pekanbaru. There were 9 classes of the eighth grade students of Junior High School 09 Pekanbaru. They were 281 students all of them. The total number of the eighth grade students of Junior High School 09 Pekanbaru was large enough to be all taken as sample of the research.

The specifications of the population can be seen in the table below:

**Table III.2**  
**The Population of the Research**

No	Classes	Population
1	VIII 1	30
2	VIII 2	30
3	VIII 3	30
4	VIII 4	32
5	VIII 5	31
6	VIII 6	34
7	VIII 7	30
8	VIII 8	34
9	VIII 9	30
	Total	281

### 2. Sample

Based on the total population above in this research, the researcher used cluster random sampling technique. According to Gay (2012, p.135), in cluster sampling, intact groups, not individuals, are randomly selected. It is also convenient when the population is very large or spread over a wide geographic

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area. In cluster random sampling, the researcher determined both classes to be sample of population by using lottery. The researcher gave name card to the classes based on every eighth grade class in Junior High School 09 Pekanbaru; they are VIII1, VIII2, VIII3, VIII4, VIII5, VIII6, VIII7, VIII8 and VIII9. The researcher mixed these cards then took two cards randomly as the sample of the research. The chosen classes were an experimental class and a control class. So, the total sample was 60 students. The specifications of the sample can be seen in the table below:

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

No	Classes	Sample	Gender		Total
			Female	Male	
1	VIII 1	Experimental Class	11	19	30
2	VIII 2	Control Class	18	12	30
		Total	29	31	60

### **E. The Technique of Collecting Data**

Collecting data is the most crucial thing in conducting a research. To find out the data in this research, the researcher used test as instrument. The test was distributed to measure the students' reading comprehension of descriptive text. Test is a valuable measuring instrument for educational research. Test means that a method of measuring of a person's ability, knowledge, or to measure students' ability to solve the problems.. To obtain the students' reading comprehension by using OSRS Technique, the writer gave the test.

The data of the research was using the score of the students' reading comprehension obtained by using multiple choices. The test was done twice, the first was pre-test that was given before treatment, and the second was post-test that was given after treatment intended to obtain students' reading comprehension at the second grade of State Junior High School 9 Pekanbaru.

The test items were prepared for the post test that the first were tested, in this case the test items were tested to the VIII 4 class. The number of each pre and post-test consisted of 25 items. Every test item consisted of four answer options (a,b,c,and d). The test was about reading comprehension which consisted of four reading passages taken from students' English book and every passage had five questions. The questions were based on the indicators of reading descriptive text comprehension. Each indicator had five questions. It can be seen from the blue print test below:

**Table III.4**  
**Blue Print of Test**

NO	Indicators	Items of Questions
1	The students' ability to identify the main idea of the descriptive text.	1, 6, 11, 16, 21,
2	The students' ability to identify the generic structures of the descriptive text.	2, 7, 12, 17, 22,
3	The students' ability to identify the references of descriptive text.	3, 8, 13, 18, 23,
4	The students' ability to analyze the meaning of certain words of descriptive text.	4, 9, 14, 19, 24,
5	The students' ability to identify the factual information of the descriptive text.	5, 10, 15, 20, 25.

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Then, the reseacher took the total score from the result of the reading comprehension test. In State Junior High School 9 Pekanbaru, passing score standard for English subject is 73. Arikunto (2013, p.281) explained the classification of the students' score is shown below:

**Table III.5**  
**The Classification of Students' Score**

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

## F. Validity and Realibity of the Test

### 1. Validity of the Test

According to Siregar (2013, p.75), a valid measure is if it succesfully measures the phenomenon. While Gay (2012, p.161) stated that validity is concerned with the appropriateness of the interpretations made from tests score. It means that validity is the most important consideration in evaluating measuring instruments and validity is the core of the test. Moreover, Siregar said that there are four kinds of validity. They are face validity, content validity, criterion validity, and construct validity. Each of them has different usage and function.

In this research, the researcher used content validity to prove the validity of the test. Kothari (2004, p.74) states that content validity refers to the extent to which a measuring instrument provides adequate coverage of

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the topic under study. Before the researcher gave the test; the researcher gave try out test to the students in order to measure item difficulties. According to Arikunto (2013, p.223), 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 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). Then, the proportion of correct answer is represented by “p”, whereas the proportion of incorrect answer is represented by “q”, it can be seen in the following tables:

**Table III.6**  
**The Students' Ability to find out the Main Idea**

Variable	Finding out the Main Idea					N
Item no.	1	6	11	16	21	32
Correct	18	16	17	21	20	
P	0.56	0.50	0.53	0.66	0.63	
Q	0.44	0.50	0.47	0.34	0.38	

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Based on the table III.6, the proportion of correct answer for item number 1 is 0.56, item number 6 obtained 0.50, item number 11 shows the proportion of correct 0.53, item number 16 shows the proportion of correct 0.66, and the item number 21 shows the proportion of correct 0.63. Based on the standard level of difficulty “p”  $<0.30$  and  $>0.70$ , it is pointed out that item difficulties in average of each item number for finding out the main idea are accepted.

**Table III.7**  
**The Students’ Ability to Identify the Generic Structure**

Variable	Identifying The Generic Structure					N
Item no.	2	7	12	17	22	32
Correct	20	16	19	14	20	
P	0.63	0.50	0.59	0.44	0.63	
Q	0,38	0,50	0.41	0.56	0.38	

Based on the table III.7, the proportion of correct answer for item number 2 is 0.63, item number 7 shows the proportion of correct 0.50, item number 12 shows the proportion of correct 0.59, item number 17 show the proportion of correct 0.44, and item number 22 shows the proportion of correct 0.63. Based on the standard level of difficulty “p”  $<0.30$  and  $>0.70$ , it is pointed out that item difficulties in average of each item number for identifying the generic structure are accepted.



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**Table III.8**  
**The Students' Ability to Identify the references**

Variable	Identifying the Communicative Purpose					N
Item no.	3	8	13	18	23	32
Correct	19	18	16	18	15	
P	0.59	0.56	0.50	0.56	0.47	
Q	0.41	0.44	0.50	0.44	0.53	

Based on the table III.8, the proportion of correct answer for item number 3 is 0.59, item number 8 gained 0.56, item number 13 gained 0.50, item number 18 gained 0.56, and item number 23 gained 0.47. Based on the standard level of difficulty "p"  $<0.30$  and  $>0.70$ , it is pointed out that item difficulties in average of each item number for identifying the communicative purpose are accepted.

**Table III.9**  
**The Students' Ability to Analyze the Meaning of Certain Words**

Variable	Analyzing the Meaning of Certain Words					N
Item no.	4	9	14	19	24	32
Correct	17	16	18	19	16	
P	0.53	0.50	0.56	0.59	0.50	
Q	0.47	0.50	0.44	0.41	0.50	

Based on the table III.9, the proportion of correct answer for item number 4 is 0.53, item number 9 obtained 0.50, item number 14 obtained 0.56, item number 19 obtained 0.59, item number 24 obtained of correct 0.50. Based on the standard level of difficulty "p"  $<0.30$  and  $>0.70$ , it is pointed out that item difficulties in average of each item number for analyzing the meaning of certain words are accepted.

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**Table III.10**  
**The Students' Ability to identify the Factual Information**

Variable	Getting the Detail Information					N
	5	10	15	20	25	
Correct	15	19	15	20	21	32
P	0.47	0.59	0.47	0.63	0.66	
Q	0.53	0.41	0.53	0.38	0.34	

Based on the table III.10, the proportion of correct answer for item number 5 is 0.47, item number 10 got 0.59 item number 15 got 0.47, item number 20 got 0.63, and item number 25 got 0.66. Based on the standard level of difficulty "p"  $< 0.30$  and  $> 0.70$ , it is pointed out that item difficulties in average of each item number for getting the detail information are accepted.

## 2. Reability of the Test

According to Gay (2012, p.169), reliability is the degree to which a test consistently measures whatever it is measuring. However, Brown (2003, p.20) stated that reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining similar results when measurement was repeated on different occasions or with different instruments or by different persons. The characteristic of reliability was sometimes termed consistency. Briefly, the test was reliable when an examinee's results were consistent on repeated measurement.

To obtain the reliability of the test, it must be known the total variance and the mean score of the test. According to Siregar (2013, p.111), to obtain

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the reliability of the test given, the writer used the K-R 21 formula as follows:

$$r_{ii} = \left\{ \frac{k}{k-1} \right\} \left\{ 1 - \frac{X(k-X)}{k \cdot V_t} \right\}$$

Where:

- r<sub>ii</sub>*** : reliability of the instrument  
***k*** : total of questions  
***V<sub>t</sub>*** : total variance  
***X*** : the mean score

Firstly, the writer calculated the total variance:

$$V_t = \sum \frac{(x_1 - X)^2}{n-1}$$

Where:

- X<sub>1</sub>*** : total of score  
***X*** : mean score  
***n*** : total of respondents

$$V_t = \sum \frac{(x_1 - X)^2}{n-1}$$

$$V_t = \frac{(443 - 13.84)^2}{32-1}$$

$$V_t = 13.84$$

Total variance was 13.18, and then the researcher calculated the reliability.

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$$r_{11} = \left\{ \frac{k}{k-1} \right\} \left\{ 1 - \frac{X(k-X)}{k.Vt} \right\}$$

$$r_{11} = \left\{ \frac{25}{25-1} \right\} \left\{ 1 - \frac{13.84(25-13.84)}{25(13.84)} \right\}$$

$$r_{11} = (1.04) (0.55)$$

$$r_{11} = 0.57$$

According to Heaton (1995, p.162), the reliability of the test was considered as follows:

**Table III.11**  
**The Classification of Reality**

No	Value	Category
1	0.0 – 0.20	reliability is low
2	0.21 – 0.40	reliability is sufficient
3	0.41 – 0.70	reliability is high
4	0.71 – 1.0	reliability is very high

In sum, the reliability of the test as calculated above (0.57) was categorized into high level.

## G. The Normality and Homogeneity of Test

### 1. Normality of the Test

Before analyzing the data by using t-test formula, the writer had to find out the normality test of the data. The normality test of the data was analyzed by using Kolmogorov-Smirnov technique with SPSS 20 version. Test of normality in pre-requisite test was used to find out whether data of experimental class and control class that had been collected are normally

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distributed or not. The SPSS result for Kolmogorov-Smirnov Z test is interpreted as follows:

$p\text{-value (Sig.)} > 0.05$  = the data are in normal distribution

$p\text{-value (Sig.)} < 0.05$  = the data are not in normal distribution

The result of normality of post test score in experimental and control class was computed by using SPSS version 20. It is presented in the following table:

**TABLE III.12**  
**Test of Normality**

Tests of Normality							
	Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	Df	Sig.
Score	Experiment	.132	30	.190	.946	30	.129
	Control	.143	30	.121	.937	30	.077

a. Lilliefors Significance Correction

Based on the table above, it shows that the significance level in Kolmogorov-Smirnov test of experimental class was 0.190; it means that  $0.190 > 0.05$ , and significance level of control class was 0.121; it means that  $0.121 > 0.05$ . In conclusion, the data are in normal distribution.

## 2. Homogeneity of the Test

Test of homogeneity was done to know whether sample in the research came from population that had same variance or not. In this research, the homogeneity of the test was measured for pretest scores of the experimental

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class and control class through SPSS. The result computation of homogeneity through SPSS can be seen in the following table:

**Table III.13**  
**Test of Homogeneity of Variances**

Test of Homogeneity of Variances			
Score			
Levene Statistic	df1	df2	Sig.
.839	1	58	.364

Based on the table test of homogeneity of variances, the value of significance was 0.580. This value shows that value of  $sig > \alpha = 0.839 > 0.05$ , it can be concluded that both classes had similar variants or homogenous.

## H. The Technique of Analyzing Data

In order find out whether there is or no significant effect of using OSRS technique on students' reading comprehension, the data were analyzed statistically. To analyze the data, the writer took score of pre-test and post-test of the experimental and control classes.

The writer used Independent Sample T-Test and Paired Sample T-Test formula through software SPSS 20 version.

1. Independent Sample T-test to test the first and the second hypotheses.
2. Paired Sample T-Test to test the third hypothesis.

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To determine effect size of the result, the writer adopted Eta squared formula. Pallant (2010, p.247) mentions the formula of eta square as presented below;

$$Eta\ Squared = \frac{t^2}{t^2 + (N - 1)}$$

Pallant (2010, p.210) also informed that the guidelines for interpreting this value are 0.01= small effect, 0.06= medium effect, 0.14= large effect.