

CHAPTER III

METHOD OF THE RESEARCH

Research Design Α.

This research was an experimental research. Creswell (2008:299), cities that experimental research is a quantitative research that requires the researcher to finds out the significant effect between independent and dependent variable. Creswell (2008:299), said that experiment is you test an idea (or practice procedures) to determine whether it influences an outcome or dependent variables". This research used a quasi-experimental design: the pretest-post-test, non-equivalent group design. Thus, this research used experimental and control group. The dashed line separating the parallel rows in the diagram of the non-equivalent control group indicates that the experimental and control groups have not been equated by randomization hence the term 'non-equivalent (Louis Cohen (2007:283)). There are two variables in this research, first variable is Predict O Gram strategy as independent variable (x variable), the second is reading comprehension as dependent variable (y variable). Therefore, the experimental class was provided with pre-test, treatment, and post-test, and control class was without treatment.

The quasi-experimental design: the pretest-post-test, non-equivalent group design can be presented as follows (Creswell (2012:310)):



The Research Design

Group	Group Pre-Test		Post-Test		
Experimental	Experimental X1		Y1		
Control	X2	-	Y2		

Where:

X1	= Pre-test in experimental group
X2	= Pre-test in control group
Y1	= Post-test in experimental group
Y2	= Post-test in control group
Т	= Treatment

B. The Location and Time of the Research

This research was conducted at Junior High School 20 Pekanbaru. It is

located at Jl. Soekarno Hatta. This research was done on February 2017.

C. The Subject and Object of the Research

1. The Subject of the research

The subject of the research was the eighth grade students of Junior High School 20 Pekanbaru 2016/2017 academic year.

2. The Object of the research

Object of the research was the effect of using Predict O Gram strategy on students' reading comprehension at Junior High School 20 Pekanbaru.



D. The Population and Sample of the Research

1. Population

The population of the research was the eighth grade students at junior High School 20 Pekanbaru. They consisted of nine classes. The total number of population was 356 students, each of class has different total numbers of students; the first class or VIII.1 there are 40 students, there are 40 students in the VIII.2 class, 40 students in VIII.3 class, 38 students in the VIII.4 class, 40 students in VIII.5 class, 40 students in VIII.6 class, 40 students in VIII.7 class, 40 students in VIII.8 class and 38 students in VIII.9 class.

2. Sample

The researcher used cluster random sampling technique in determining the sample of the research. According to Gay and Petter Airasian (2000:129), cluster random sampling is sampling in which group, not individually; it can be communities, school district, and so on. The researcher gave name card to the classes based on every Eighth grade class in Junior High School 20 Pekanbaru, they are VIII.1, VIII.2, VIII.3, VIII.4, VIII.5, VIII.6, VIII.7, VIII.8, VIII.9. The researcher mixed these cards then took two cards randomly as the sample of the research. The chosen classes were VIII.4 and VIII.9. Class VIII.4 was an experimental class, and class VIII.9 was a control class. So the total



number of sample was 76 students. It consisted of 38 students of VIII.4, and there were 38 students of VIII.9 class.

E. The Technique of Collecting Data

In collecting the data, the researcher used test. In this test, students were required to answer question based on the text given. The test that was used was multiple-choices type, it was based on the indicators of reading comprehension; Cyril (1996:43) a multiple choice test item is usually set out in such a way that the candidate is required to select the answer for a number given options, only one of which is correct.

Written test was divided into two phases:

a. Pre-Test

Pre-test was use to collect the data about students' reading comprehension in narrative text before they were taught by using Predict O Gram Strategy. It was given to both experimental and control class. In this test, the writer used multiple choice type and the questions were based on the indicators of reading comprehension.

b. Post-Test

Post-test was used to collect the data about students' reading comprehension in narrative text after they were taught by using Predict O Gram Strategy. It was given to both experimental and control class. In this test, the writer used multiple choice type and the questions were based on the indicators of reading comprehension.



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

Table	e III. 2
The Classification	of Students Score
IE SCORE LEVEL	CATEGO

THE SCORE LEVEL	CATEGORY
80-100	VERY GOOD
66-79	GOOD
56-65	ENOUGH
40-55	LESS
30-39	FAIL

Before giving the test to the sample, the researcher gave question of the test as a try out. There were 30 questions, to make it clear here is the blue print of try out:

Table III. 3

Blue Print of Try Out

No	Indicators	Item Number	Total Question
1	Identifying Main Idea	1,6,11, 16, 21, 26	6
2	Find Out Detail	2,7,12, 17, 22, 27	6
	Information Containing	TICIZAI	TATE
3	Identifying Generic	3,8,13, 18, 23, 28	6
	Structure		
4	Identifying Reference	4,9,14, 19, 24, 29	6
5	Making Inference Fron	5,10,15, 20, 25, 30	6
	Reading Text		
	Total	1	30



The purpose of try out was to obtain validity and reliability of the test. Furthermore, below is the description of validity, reliability, homogeneity, and normality of data of this research.

··· 1. Validity

Validity is the important characteristics of the test or measuring instrument can process. It is concerned with the appropriateness of the interpretations made from test scores (Gay and Airasian, 2000:161). It generally means that the instrument measures what it purposes to measure. Similarly, Richardson and Morgan (1997:33) also stated that validity is the "truthfulness" of the test-a check of whether the standardized test actually measures what it claims to measure.

According to Tuckman (1978:163-165), validity consists of four types. They are predictive validity, concurrent validity, construct validity, and content validity (test appropriateness). Predictive validity is used if a test can be used to predict an outcome in terms of some performance or behavior criterion. Predictive validity of the test can be obtained by relating test performance to subsequent performance on the related criterion. Concurrent validity is a validity that is to compare qualities or performance as assessed by that test to the qualities or performance as assessed by another procedure. In this case, the result of test is paired to the result of experience. *Construct validity* is a validity in which the items



of questions that construct the test measure every thinking aspect in special instructional aim. Content validity measures special destination which equal to the material or the content of the lesson given. This research used content validity, in which the questions use was appropriate to the material.

To find out the validity of the items of questions, the writer used Split-Half formula by using SPSS 20 version by looking at corrected itemtotal correlation (correlation between score item and score total item = r_{counted}) in table Item-Total Statistics.

To know whether the test is valid or not, the value of $r_{observed}$ must be compared with r_{table}. The number of students is 38. Degree of fredoom is 38-2=36. r_{table} on df=36 are 0.329 (5%) and 0.424 (1%).

If the value of $r_{observed} > r_{table} = valid$;

If the value of $r_{observed} < r_{table} = invalid$.

The result of calculation of validity can be seen in the table below:



Validity of the Test

Item	r observed	r _{table}	Result	Item	r observed	r _{table}	Result
nili		(df=36; 5%)				(df=36; 5%)	
Item 1	.516	0.329	Valid	Item 16	.701	0.329	Valid
Item 2	.485	0.329	Valid	Item 17	.280	0.329	Invalid
Item 3	.516	0.329	Valid	Item 18	.594	0.329	Valid
Item 4	.444	0.329	Valid	Item 19	.604	0.329	Valid
Item 5	.598	0.329	Valid	Item 20	.438	0.329	Valid
Item 6	.339	0.329	Valid	Item 21	062	0.329	Invalid
Item 7	.519	0.329	Valid	Item 22	.452	0.329	Valid
Item 8	.485	0.329	Valid	Item 23	.531	0.329	Valid
Item 9	.444	0.329	Valid	Item 24	.609	0.329	Valid
Item 10	.415	0.329	Valid	Item 25	.423	0.329	Valid
Item 11	.370	0.329	Valid	Item 26	.172	0.329	Invalid
Item 12	.538	0.329	Valid	Item 27	.339	0.329	Valid
Item 13	.602	0.329	Valid	Item 28	.280	0.329	Invalid
Item 14	.622	0.329	Valid	Item 29	.519	0.329	Valid
Item 15	.507	0.329	Valid	Item 30	.280	0.329	Invalid

From the result of calculation by using SPSS, it can be concluded that from 30 items, 5 items are invalid. It means that there are 25 items are valid.

Reliability 2.

Reliability is a necessary characteristic of good test. Shohamy (1985:70) says that reliability refers to extent to which the test is consistent in its score and it gives us an indication of how accurate the test score is.



Along with the same lines, Singh et al (2006:149) stated that reliability refers to the consistency of measurement, that is, how consistent test scores or other assessment results are from one measurement to another. In addition, reliability is the "consistency" of the test-whether it will produce roughly the same results if administered more than once to the same group in the same period. Reliability checks how dependable the test is (Richardson and Morgan, 1997:35). It is clear that reliability is used to measure the quality of the test scores and the consistency of the test.

In finding reliability of instrument, there are several formulas that can be used, such as Split-Half formula, Spearman-Brown formula, Flanagan formula, Rulon formula, Hoyt formula, Kuder-Richardson 20 (K-R 20) formula and Kuder-Richardson 21 (K-R 21) formula (Suharsimi, 2006:180). From all these formulas, the writer used Split-Half formula by using SPSS.

To determine whether the test is reliable or not, the value of robserved must be compared with r_{table}. The number of students is 38. Degree of fredoom is 38-2=36. r_{table} on df=36 are 0.329 (5%) and 0.424 (1%).

If the value of $r_{observed} > r_{table} = reliable$;

If the value of $r_{observed} < r_{table} = not$ reliable.

To be clearer, the result of calculation of validity can be seen in the table as follows:



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Kilabi	lity of th	Value	.852	
Cronbach's Alpha	Part 1	N of Items	15 ^a	
	D 0	Value	.788	
	Part 2	N of Items	15 ^b	
	Total N o	30		
Correlation Between Forms			.778	
Caseman Drown Coofficient	Equal Le	ngth	.875	
Spearman-Brown Coefficient	Unequal	Unequal Length		
Guttman Split-Half Coefficient			.868	

From the result of calculation by using SPSS, it can be seen that the value of Guttman Split-Half Coefficient (r _{observed}) is 0.868, r _{observed} > r _{table} (0.424 < 0.868 > 0.329). It means that the instrumentation of test is reliable.

Item Difficulty Level 3.

According to Nurgiantoro (2012:357), item difficulty is a statement about how difficult or easy a question is for the examinee. A good question is if is not too difficult and not too easy. The items of try out question were analyzed to determine whether it is categorized into good question or not. The formula for item difficulty is as follows (Suharsimi, 2007:208):

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

Where:

P : Index of difficulty

B : The number of students who answer the item correctly

JS : The number of examinee or students taking the test



The standard level of item difficulty is < 0.30 and > 0.70(Suharsimi, 2007:210). It means that the item test is categorized into standard level if the level of difficulty is between 0.30-0.70. If the level of item difficulty is lower 0.30, it is categorized into difficult level. On the other hand, if the level of item difficulty is higher than 0.70, it is categorized into easy level. Then, the proportion correct is represented by "p" whereas the proportion incorrect is represented by "q".

Table III. 6

The students' Ability in Identifying Main Idea

Variable		Identifying Main Idea							
Item no	1	6	11	16	21	26			
Correct	24	21	19	23	11	10			
Р	0.63	0.55	0.50	0.61	0.29	0.26			
Q	0.37	0.45	0.50	0.39	0.71	0.74	38		

Based on the table of question for identifying the main idea, there were six numbers of question: 1, 6, 11, 16, 21, and 26. It showed that the proportion of correct answer for identifying the main idea of test item numbers 1 was 0.63, the proportion of correct answer for test item number 6 was 0.55, the porpotion of correct answer for test item number 11 was 0.50, the proportion of correct answer for test item number 16 was 0.61, the propotion of correct answer for test item number 21 was 0.29 and the propoyion of correct answer of test number 26 was 0.26. Based on the level of item difficulty, all items for identifying the main idea were



between 0.30 - 0.70 except 21 and 26 (difficult). So, the questions number

21 and 26 were deleted from the test.

Table III. 7

The Students' Ability in Finding out Detail Information Containing

Variable	Fin	Finding Out Factual Information							
Item no	2	7	12	17	22	27			
Correct	23	22	20	30	24	21			
Р	0.61	0.58	0.53	0.79	0.63	0.55			
Q	0.39	0.42	0.47	0.21	0.37	0.45	38		

Based on the table, the items number of the question for finding out the factual information were 2, 7, 12, 17, 22, and 27. It showed that the proportion of correct answer for finding out factual information of test number 2 was 0.61, the proportion of correct answer for test item number 7 was 0.58, the proportion of correct answer for test item number 12 was 0.53, the proportion of correct answer for test item number 17 was 0.79, the proportion of correct answer number 22 was 0.63 and the proportion of correct answer number 27 was 0.55. Based on the level of item difficulty, all items for finding out factual information were between 0.30 - 0.70except number 17 (easy). So the question number 17 was deleted from the question.



The Students' Ability in Identifying Generic Structure

Variable	Id	Ν					
Item no	3	8	13	18	23	28	
Correct	24	23	21	21	19	30	
Р	0.63	0.61	0.55	0.55	0.50	0.79	
Q	0.37	0.39	0.45	0.45	0.50	0.21	38

Based on the table, the items number of the question for identifying generic structure were 3, 8, 13, 18, 23 and 28. It showed that the proportion of correct answer for identifying generic structure number 3 was 0.63, the proportion of correct answer of test item number 8 was 0.61, the proportion of correct answer of test item number 13 was 0.55, the proportion of correct answer of item number 18 was 0.55, the proportion of correct answer of item number 18 was 0.55, the proportion of correct answer of item number 23 was 0.50 and the proportion of correct answer of item number 28 was 0.79. Based on the level of item difficulty, all items for identifying generic structure were between 0.30 - 0.70 except number 28 (easy). So, the question number 28 was deleted from the question.

Table III. 9

The Students' Ability in Identifying Reference

Variable	Identifying Reference						Ν
Item no	4	9	14	19	24	29	
Correct	24	24	22	23	19	22	
Р	0.63	0.63	0.58	0.61	0.50	0.58	
Q	0.37	0.37	0.42	0.39	0.50	0.42	38

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Based on the table, the items number of the question for identifying reference were 4, 9, 14, 19, 24 and 29. It showed that the proportion of correct answer for identifying reference number 4 was 0.63, the proportion of correct answer of test item number 9 was 0.63, the proportion of correct answer of test item number 14 was 0.58, the proportion of correct answer of item number 19 was 0.61, the proportion of correct answer of item number 24 was 0.50 and the proportion of correct answer of item number 29 was 0.58. Based on the level of item difficulty, all items for identifying reference were between 0.30 - 0.70.

Table III. 10

The Students' Ability in Making Inference from the Text

Variable	Ma	Making Inference from the Text					
Item no	5	10	15	20	25	30	
Correct	22	19	20	23	19	30	
Р	0.58	0.50	0.53	0.61	0.50	0.79	
Q	0.42	0.50	0.47	0.39	0.50	0.21	38

Based on the table, the items number of the question for making inference from the text were 5, 10, 15, 20, 25 and 30. It showed that the proportion of correct answer for making inference from the text number 5 was 0.58, the proportion of correct answer of test item number 10 was 0.50, the proportion of correct answer of test item number 15 was 0.53, the proportion of correct answer of item number 20 was 0.61, the proportion of correct answer of item number 25 was 0.50 and the proportion of



correct answer of item number 30 was 0.79. Based on the level of item difficulty, all items for making inference from the text were between 0.30 - 0.70 except number 30 (easy). So, the question number 30 was deleted from the test.

⁰4. Homogeneity

Homogeneity test is a test to identify whether the objects of the research (three or more samples) have the same variance. The method used in homogeneity test is the biggest variant is compared to smallest variance. Homogeneity of variances is also called as equal variances.

In this research, the researcher used SPSS 20 version to assess the homogeneity of the data. The result of assessing the homogeneity can be seen as follows:

Table III. 11The Homogeneity of the Test

Levene Statistic	df1	df2	Sig.
.507	1	74	.479

Based on the table above, it was known that the value of significance (sig.) was 0.479. Data are homogenous or variant when the value Sig. is higher than 0.05. Based on the table, it was clear that Sig. was higher than 0.05 which /indicates the homogeneity of the data. The comparison can be stated as 0.479 > 0.05.



Normality 5.

Assessing normality of data is used to describe a symmetrical, bell shaped curve, which has the greatest frequency of score in the middle, with smaller frequency towards the extremes. In this research, the researcher assessed the normality of data by using kolmogorov smirnov test from SPSS 20 version. The result of the test can be seen as follows:

Table III. 12 **Tests of Normality**

Group		Kolr	nogorov-Smir	nov ^a	Shapiro-Wilk			
		Statistic	Df	Sig.	Statistic	Df	Sig.	
Score	Experiment	.122	38	.160	.954	38	.117	
	Control	.121	38	.173	.962	38	.224	

a. Lilliefors Significance Correction

Based on the table above, it can be seen that significance level of normality test on both classes is higher than 0.05. In Kolmogorov-Smirnov test, in post-test score of experimental class, the significance score is 0.160 and in post-test score of control class, the significance score is 0.173. 0.160 > 0.05 and 0.173 > 0.05. P > 0.05, Ha is accepted. So, it can be concluded that the data were normal.

In Shapiro-Wilk test, in post-test score of experimental class, the significant score is 0.117 and in post-test score of control class, the significant score is 0.224. 0.117 > 0.05 < 0.224. P > 0.05, Ha is accepted .It means that the data were normal. So, it can be concluded that data were



normal, not only in Kolmogorov-Smirnov test but also in Shapiro-Wilk test.

F. The Technique of Analyzing the Data

In this research, the data were analyzed by using statistic software which is Statistical Product and Service Solutions (SPSS) 20 version. The researcher gave pre test and post test to the students. Both of the tests consisted of 25 questions.

In order to find whether there is significant difference of students reading comprehension by using and without using Predict O Gram Strategy on Student' Reading Comprehension, the researcher used the independents T-Test. The result of t-test analysis can 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)):

- H_o is accepted if t_o<t-table or there is no significant difference of using Predict O Gram strategy on students' reading comprehension at Junior High School 20 Pekanbaru.
- H_a is accepted if t_o> t-table or there is any significant difference of using Predict O Gram strategy on students' reading comprehension at Junior High School 20 Pekanbaru.