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CHAPTER III

RESEARCH METODOLOGY

A. The Method of the Research

This research was designed as an experimental design. According to Creswell (2008, p. 298) experimental design is traditional research approach to quantitative research. Experimental designs are procedures in quantitative research in which the investigator determines whether an activity or material make a difference in result for participants. Then, according to Gay and Airasian (2010, p. 367), experimental research is the only type of the research that can test hypotheses to establish cause and effect relationship.

Cohen, Manion and Marison (2007, p.282), a quasi-experiment design in form the pre-test-post-test nonequivalent control group design is one of the most commonly used quasi experimental designs in educational research.

The design of this research was quasi-experimental design by using the non-equivalent control group design. One class of the second year of Junior High School 01 Kampar, Kampar Regency participated as sample that is called experiment class and another is as control class. This class got pre-test, treatment, and post-test. The design can be seen in the following table (Cohen 2007, p. 283)

Table III.1
Table of Research Design

	Group	Pre-test	Treatment	Post-test
)	Experimental	O ₁	Т	O ₂
	Control	O ₃	-	O_4



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Note:

- O₁ : Pre-test for Experimental group
- O₃ : Pre-test for control group
 - X : Treatment by using Circle Triangle Square Strategy
 - : Treatment without using Circle Triangle Square Strategy
 - O₂ : Post-test for Experimental group
- O₄ : Post-test for Control group

B. Time and Location of the Research

This research was conducted at second year of State Junior High School 01 Kampar, Kampar Regency. The research activities started from 06thApril to 24thMay 2017. It is located on Air Tiris, Kampar Regency.

C. Subject and Object of the Research

The subject of this research was the second year students at State Junior High School 01 Kampar Regency. The object of this research was the effect of using Circle Triangle Square Strategy on Students' Reading Comprehension in narrative text at State Junior High School 01 Kampar, Kampar Regency.

D. Population and Sample of the Research

The population of this research was the students at the second year of State Junior High School 01Kampar Regency. It had 11 classes: the number of the second year students of State Junior High School 01Kampar Regency was 326 students. The specification of the population can be seen as follows:

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Population 1.

> According to Gay (2000, p. 122), population is the group of interest to the researcher, the group to which wants the results of the study. It can be applied to other population or situations.

	ign School U	Esmale	Total
Class	wale	remale	Total
VIII ^A	11	20	31
VIII ^B	13	18	31
VIII ^C	12	18	30
VIII ^D	15	18	33
VIII ^E	15	16	31
VIII ^F	11	20	31
VIII ^G	13	17	30
VIII ^H	15	18	33
VIII ^I	11	20	31
VIII ^J	13	18	31
Total	129	183	312

Table III.2 The Population of the second year of State Junior

2. Sample

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In this research, the writer took two of ten classes as sample by using cluster ramdom sampling technique. According to Gay and Airasian (2010, p. 123), random sampling is the process of selecting in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample. Continue their explanation in the other pages, they said that Cluster sampling randomly select the groups, not individuals, all the members of selected group have similar characteristics. It means that the sample is chosen in group not individually, the groups have the same ability (Gay and Airasian 2010, p. 129).



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Because class VIII had 10 classes, the writer randomly selected the sample by taking a small of paper in 10 pieces and put it into a small box, after that selected 2 pieces of that paper and the writer got class VIII^B as an experimental group and VIII^A is as a control group because they were homogeneous and had same characteristics.

Table III.3

The Sample of the Research

No	Class	Male	Female	Total
1	VIII ^A	12	18	31
2	VIII ^B	13	18	31
	62			

E. Technique of Collecting Data

In collecting the data, the writerused test. According to Brown (2004, p. 3), test means that a method of measuring of a person's ability, knowledge or performance in given domain. Written test was used to collect the data about students' reading comprehension. Both of the tests were multiple choice. According to Brown (2003, p. 194), multiple choice is easy to administer and can be scored quickly. This type of instrument was chosen because it was practically, and easily administered, and can be scored quickly.

According to Siregar (2013, p.87), the research instrument should be a valid and reliable, the multiple choice items can cover those requirements. The result of the test cannot be denied by the people.

In collecting the data, the writer used test to measure the students' reading comprehension, which was done twice, they were pre-test and post-test. Pre-test was used to know students' reading comprehension before doing



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treatment to experimental and control class, and post-test was done at the end of the research to know the effect of using Circle Triangle Square strategy for experiment class and without using Circle Triangle Square strategy for control class.

There were twenty questions for respondent. The questions were based on the indicators of reading narrative text comprehension. The indicators consisted of five and each had four questions. It can be seen from the blue print test below:

Table III.4 The Blueprint of the Test

	The Diacpinit of t		
No	Indicator of Items	Number of items	Question number
1	Identify the main idea of narrative text.	4 items	1, 6, 11, 16
2.	Identify the specific information of narrative text.	4 items	2, 7, 12, 17
3.	Identify the generic structure of narrative text.	4 items	3, 8, 13, 18
4.	Identify the meaning of the words of narrative text.	4 items	4, 9, 14,19
<u>v</u> 5.	Identify the inference of narrative text.	4 items	5, 10, 15,20

F. The Validity and Reliability of the test

The type of test used was multiple choices. Multiple choice were a test that was designed for choosing (a, b, c, and d), and the sample choose one, it was based on the questions, before the question were given to the students. It should be tested about validity and reliability of the test.

1. Validity of the test

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The validity of the test means that each of the items in the test is not too easy or difficult.. According to Arikunto (2011, P.245), the test is



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accepted if the degree of difficulty is between 0.30 - 0.70. It was determined by finding the difficulty level of each item. Before the test was given to the sample of the research, both of test had been tried out to the 30 students of the second year at Junior High School 01 Kampar that which were not included as the sample of the research to validity the test. The formula for item difficulty is as follows:

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

Where;

Р

В

: Index of difficulty or facility value

: The Number of Correct Students

JS : The Number of Students taking the test

The formula above was used to find out the difficulties of each items test that writer gave to the sample of the research. The items that do not reach the standard level of difficulty are excluding from the test and changed with the new items that are appropriate. The items are accepted with facility values between 0.30 and 0.70. It is rejected if the level of difficulty is below 0.30 and over 0.70. Then, the proposition correct is represented by P, whereas the proposition incorrect is represented by Q. The data were gotten from try out; the evaluation of the test includes the indicators of the reading comprehension. They are:

The students are able to identify the main idea in narrative text a.

b. The students are able to identify the specific information in narrative text



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c. The students are able to identify the generic structures in narrative d. The students are able to identify the meaning of the words in the

e. The students are able to identify the inference in narrative text.

Before the tests weregiven to the sample, both of tests were tried out to the 30 students at the second year. The purpose of try out wass to obtain validity and reliability of the test. It was determined by finding the difficulty level of each item. Item difficulty was determined as the proportion of correct responses.

Arikunto (2009, p. 245) stated that the formula for item difficulty is as follows:

$=\frac{B}{B}$	Whe	re;
<i>J</i> 3	Р	: Index of difficulty or facility value
	В	: The Number of Correct Students
	JS	: The Number of Students taking the test

The formula above was used to find out the difficulties of each items test that writer gave to the sample of the research. The items that do not reach the standard level of difficulty are excluding from the test and changed with the new items that are appropriate. The items are accepted with facility values between 0.30 and 0.70. It is rejected if the level of difficulty is below 0.30 and over 0.70. Then the proposition correct is represented by P, whereas the proposition incorrect is represented by Q.



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The data were gotten from try out; the evaluation of the test includes the indicators of the reading comprehension. They are:

- a. The students are able to identify the main idea (topic) of narrative text;
- The students are able to identify the specific information of narrative b. text;
- The students are able to identify the generic structure of narrative c. text;
- The student are able to identify meaning of the words of narrative d. text;
- The students are able to identify the inference of narrative text. e.

The calculation of the item difficulty can be seen from the following table:

Variable		Main idea					
Item no	1	6	11	16	21		
Correct	19	19	18	12	16	30	
Р	0.63	0.63	0.60	0.40	0.53	AU	
Q	0.37	0.37	0.40	0.60	0.47		

Table III.5 Students Identify the MainIdea of Text

 $P = \frac{B}{IS}$ Q = 1.00 - P

Based on the table III.5 above, it shows that the proportion of correct answer number 1 is 0.63, the proportion of correct answer number



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6 is 0.63, the proportion correct answer number 11 is 0.60, the proportion correct answer number 16 is 0.40, and the proportion correct answer number 21 is 0.53 from the total number of students' is 30. 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 identify the main idea of the text are accepted.

Variable		Specific information on text					
Item no	3	8	13	18	23		
Correct	15	15	14	10	16	20	
Р	15	15	14	18	10		
	0.50	0.50	0.47	0.60	0.53		
Q	0.50	0.50	0.53	0.40	0.47	F (

Table III.6 Students IdentifySpecificInformation ofText

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

Q = 1.00 - P

Based on the table III.6 above, it can be seen that the proportion of correct answer for item number 3 is 0.50. The proportion of the correct answer for item number 8 is 0.50. The proportion of the correct answer for item number 13 is 0.47. The proportion of the correct answer for item number 18 is 0.60. And the proportion of the correct answer for item number 23 is 0.53. In short, each items of stating Specific information on narrative text is accepted because the value of index difficulty is between 0.30 and 0.70.



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Table III.7 Students IdentifyGenericStructure ofText

Variable		Generic structure of text					
Item no	4	9	14	19	24		
Correct						-	
	14	21	20	19	20	30	
Р							
	0.47	0.70	0.67	0.63	0.67		
Q							
	0.53	0.30	0.33	0.37	0.33		
$P = \frac{B}{-1}$ $Q = 1.00 - P$							

Based on the table III.7 above, it shows that the proportion of the correct answer for item number 4 is 0.47. The proportion of the correct answer for item number 9 is 0.70. The proportion of the correct answer for item number 14 is 0.67. The proportion of the correct answer for item number 19 is 0.63. And the proportion of the correct answer for item number 24 is 0.67.. And the total number of the students is 30 students. In short, each item of stating Generic structure of narrative text is accepted because the value of index difficulty is between 0.30 and 0.70.

Table III.8 **Students Identify Meaning of the Words of Text**

Variable	L L	Meaning of the words on text						
Item no	2	7	12	17	22			
Correct	14	14	16	20	11	30		
Р	0.47	0.47	0.53	0.67	0.37			
Q	0.53	0.53	0.47	0.33	0.63			



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 $P = \frac{B}{IS}$ Q = 1.00 - P

Based on the table III.8 above, it can be seen that the proportion of correct answer for item number 2 is 0.47. The proportion correct answer for item number 7 is 0.47. The proportion correct answer for item number 12 is 0.53. The proportion correct answer for item number 17 is 0.67. The proportion correct answer for item number 22 is 0.37. And the total number of the students is 30. In short, each item of stating Meaning of the words on narrative text is accepted because the value of index difficulty is between 0.30 and 0.70.

Table III.9 **Students Identify the Inference of Text**

Variable		Inference of text					
Item no	5	10	15	20	25		
Correct	15	10	20	21	20	20	
Р	15	19	20	21	20	30	
	0.50	0.63	0.67	0.70	0.67		
Q							
	0.50	0.37	0.33	0.30	0.33		
$P = \frac{B}{IS}$		(Q = 1.00 - P				

Based on the table III.9 above, it can be seen that the proportion of the correct answer for number 5 is 0.50. The proportion of the correct answer for item number 10 is 0.63. The proportion of the correct answer for item number 15 is 0.67. The proportion of the correct answer for item number 20 is 0.70. And the proportion of the correct answer for item number 25 is 0.67. And the total number of the students is 30. In short,



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each items of stating Inference of text of narrative text is accepted because the value of index difficulty is between 0.30 and 0.70.

2. Reliability of the test

Brown (2000, p. 20) defined that a test can be reliable if you give the same test to the same student or match students on two different occasions, the test should yield similar results. To obtain the reliability of the test, the writer used SPSS 16.0 version to find out whether the test is reliable or not. According to Coleman (2005), assessment also needs to test students in a consistent way. Hughes (1989) stated that reability refers to the consistency and replicability of reasearch.

Heaton (1990, p. 159) stated that the standardreliability of 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

0.71 - 1.00 = Reliability is very high



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p-value (Sig.) > 0.05 = the data is in normal distribution

p-value (Sig.) < 0.05 = the data is not in normal distribution

Reliability Statistics					
	Dowt 1	Value	.049		
Cronbach's Alpha	Part I	N of Items	13 ^a		
	Part 2	Value	.009		
		N of Items	12 ^b		
		25			
Correlat	ion Betwee	n Forms	.370		
Spearman-Brown		Equal Length	.540		
Coefficient	Unequal Length		.541		
Guttman S	.539				

Table III.10

a. the value is negative due to a negative average covariance among items. This is violates reability model assumptions. You may want to check item codings. b the items are: item1, item2, item3, item4, item5, item6, item7, item8, item9, item10

c.The items are: item 11, item 12item13, item14, item15, item16, item17, item18, item19, item20

Based on the table III.10 above, it can said that reliability was accepted which was 0.41 < 0.539 < 0.70 or higher than 0.41 and lower than 0.70. It also can be stated that the reliability was high.

The Normality test 3.

In order to know whether the data had normal distribution or not, the writer used Kolmogorof-Smirnov method as the formula to analyze the data. In this research, the writer analyzed the data by using SPSS (Statistical Product and Service Solutions) 16.0 version program. The SPSS result for Kolmogorov-Smirnov Z test would be interpreted as follows:



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computed by using S	PSS version 16.0 I	t is presented	in the follow	ving
table:				
One-Sa	Table III. 11 Test Of Normality mple Kolmogorov-Smi	rnov Test		
-		Experiment	Control	
Ν		31	31	
Normal Parameters ^a	Mean	80.48	67.90	
	Std. Deviation	8.977	6.295	
Most Extreme Differences	Absolute	.116	.179	
	Positive	.116	.129	
	Negative	113	179	
Kolmogorov-Smirnov Z		.648	.996	
Asymp. Sig. (2-tailed)		.795	.274	

The result of normality of score in experimental and control class was

Based on the table III.11 above, it shows the significance level in Kolmogrov-Smirnov test

0.795 (Sig.) > 0.05 = Experiment data is in normal distribution

0.274 (Sig.) > 0.05 = Control data is in normal distribution

In conclusion, the data were in normal distribution.

a. Test distribution is Normal.

The Homogeneity Test 4. University of Sultan Syarif Kasim Riau

Test of homogeneity was done to know whether the sample in the research came from population that had same variance of not. In this research, the homogeneity of the test was measured for pre-test scores of the experiment class and control class through SPSS 16.0. The result of computation of homogeneity through SPSS is:



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Table III.12Test of Homogeneity of Variances

score

Levene	df1	dfว	Sia
	1	u12	51g.
2.258	1	60	.138

Based on the table test of homogeneity of variances, the value of significance was 0.138. This value shows that value of sig > $\alpha = 0.138$ > 0.05, it can be concluded that both classes had similar variants of homogeneous.

5. Technique of Analyzing Data

According to Hartono (2009:202-203), to analyze the data of this research, the writer used T-test formula as follow:

to=
$$\frac{Mx - My}{\sqrt{\left(\frac{SDx}{\sqrt{N-1}}\right)^2} + \left(\frac{SDy}{\sqrt{N-1}}\right)^2}$$

Where:

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to : The value will be found
Mx : Mean X
My : Mean Y
SDx : Standard division X
SDy : Standard division Y
N : The number of the student

The *t*-test is obtained by considering the degree of freedom (df) = (ni+n2)-

2. Statistically the hypotheses are:

Ho: to<t-table

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Ha: to>t-table

Ho is accepted if to< t table or there is no significant effect of using Circle Triangle Square strategy on students' reading comprehension in narrative text.

Ha is accepted if to> t-table or there is a significant effect of using Circle Triangle Square strategy on students' reading comprehension in narrative text.

In this research, the writeranalyze the data by using statistic software which is Statistical Product and Service Solution (SPSS) 16.0 version.

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