CHAPTER III

RESEARCH METHOD

A. Research Design

The design of the research was a quasi experimental design, which focuses on quantitative approach. According to Gay and Peter, experimental research is the only type of research that can test hypotheses to establish cause-and-effect relationships.[1] In here, the writer used quasi-experimental design: which used pre-test-pos-test non equivalent group design. This research consists of two variables. The effect of using Think, predict, read, and connect strategy is independent variable that is symbolized by "X", while the students' reading comprehension is dependent variable that is symbolized by "Y". These groups used different strategies, but both of experimental and control group were tested by the same test. Therefore, the experimental class was provided with pre-test, treatment, and post-test. According to Louis Cohen et al, they describe the design as follows:[2]

[1] L. R Gay and Peter, *Educational Research: Competencies for Analysis and Application,* (New Jersey Columbus: prentice-Hal,2000), p.367

[2] Louis Cohen et all, *Research Methods in Education,* (London and Newyork: Roudledge, 2007), www.library.nu (accessed Desember 20th, 2012)

Table III.1

Research Design Diagram

Group	Pre-test	Treatment	Post-test
Experimental	O1	X	O2
Control	O3	-	O4

Where:

X : Treatment

O1 : Pre-test of Experimental Group

O2 : Post-test of Experimental Group

O3 : Pre-test of Control Goup

O4 : Post-test of Control Group

B. Location and Time of the Research

This research was conducted at SMAN 2 BANGKO Bagasiapiapi which was located on jl. SMA 2, Pelabuhan Hulu, Kecamatan Bangko, Kabupaten Rokan Hilir. The duration of this research was around two months. Started from 16th August to 16th October 2013.

C. Subject and Object of the Research

The subject of this research was the second year of students SMAN 2 BANGKO-Bagansiapiapi. While the object of this research was the students' reading comprehension through Think, Predict, Read and Connect strategy.

D. Population and Sample

According to Gay and Peter, population is the group of interest to the researcher, the group to which she or he would like the results of the study to be generalizable.[3] Generalization is a way to take a conclusion to group of individual that have amount boarder based on the data that we take from some groups of individual that have amount narrower. A part of individual as representative in research is called as sample. Sampling is the process of selecting a number of individuals for a study that they represent the larger group from which they were selected.[4]

Population of this research was all of the students at Senior High School in second year. Where, in second year of SMAN 2 BANGKO-Bagansiapiapi included 3 classes of science and 4 classes of social, and each of classes have different amount of students. The total number of population at the second year of SMAN 2 BANGKO-Bagansiapiapi was 222 students.

[3] L.R Gay and Peter, ***Op.Cit.,*** p. 122
[4] ***Ibid.,*** p.121

Table III.2

The Distribution of Population

No	Class	Total
1	XI IPA 1	32
2	XI IPA 2	32
3	XI IPA 3	32
5	XI IPS 1	32
6	XI IPS 2	32
7	XI IPS 3	32
8	XI IPS 4	30
TOTAL		222

Furthermore, because they are homogeneous or because all samples have the same characteristic, the writer used cluster sampling to choose the classes taking the sample. So, the writer selected two groups of the students to be taken as sample XI IPA 1 as an experimental group, and XI IPA 2 as a control group.

Table III.3

The Total Sampling of the Second Year students of SMAN 2 BANGKO-Bagansiapiapi

NO	GROUP	CLASS	TOTAL
1	Experimental	XI IPA I	32
2	Control	XI IPA II	32
Total			64

Based on the table above, the writer took two classes of science department, they were XI IPA I as an experimental class, and XI IPA 2 as a control class. Where, the number of students in XI IPA I was 32, and the number of students in IX IPA 2 was 32. So, the total number of sample in this research was 64 students. According to Hartono, if the samples consist of 30 or more, it is called the big sample.[5] So, the number of students above was representative enough to be sample of the research.

E. The Technique of Collecting Data

The data of study were scores of the students' comprehension in reading text obtained by giving test. The tests were given to each group after and before giving the treatment. The first was pre-test that was conducted before the instruction was given. The second was post-test that was given after giving the treatment. Experimental group got pre-test and pos-test. Meanwhile, control group did too. The post-test was

[5] Hartono, *Statistic Untuk Penelitian,* (Yogyakarta: Pustaka Pelajar, 2008), pp.207-208

administered twice for experimental group and control group with similar pos-test instrument. This was applied in order to ensure the true score of experimental group. Then, the writer used average score between two post-test scores of experimental and control group that were analyzed. The tests were mutiple choice questions. This test consisted of 25 items for each pre-test and post-test.

Table III.4

Blue Print of the Collecting Data

Reading text	Kinds of text	Indiciators	Number of questions
Reading 1	Report text	1. Identify main idea or topic of the text	1
		2. Identify certain information	3, 4
		3. Making inference of the text	5
		4. Identify reference	2
Reading 2, Reading 4, & Reading 5	Narative text	1. Identify certain information	9, 10, 19, 25
		2. Identify reference of the text	6, 18, 21
		3. Identify complication of the text	8, 16, 23
		4. Making inferrence of the text	20, 24
		5. Identify main idea or topic of the text	7, 17, 22
Reading 3	Analytical Exposition	1. Identify main idea or topic of the text	12, 13
		2. Identify arguments	11, 15
		3. Identify reference of the text	14

F. The Research Procedure

In this research, the writer divided the procedure of this research into two phases. This activity was done to see the students' reading comprehension before and after doing teaching learning of this strategy.

1. **The Procedures of Collecting Data for Experimental Group**

   a. Pre-Test

   Before treatment, students in experimental group were given pre-test. The purpose was to know the students' reading comprehension of the text before treatment. Pre-test was conducted at the first meeting. The number of students who followed the pre-test was 32 students. The test items consisted of 25 items of multiple choice.

   b. Post-Test

   Post-test was done twice. After doing treatment, post-test was given to the student. It aimed to know there is an effect on the students' reading comprehension by applying Think, Predict, Read, and Connect strategy. It was done to figure out whether there is a significant different between the two groups.

2. **The Procedures of Collecting Data for Control Group**

   a. Pre-test

   The goals, items, and procedures of the test for control group were the same as those conducted for experimental group; the difference was only on the time.

   b. Post-test

   Post-test in control group was done twice too. Post-test for both experimental and control group were administrated after giving the treatment to experimental group. The result of the post-test for both

experimental group and control group were analyzed and used as the final data for this research.

G. The Technique of Data Analysis

In analyzing the students' reading comprehension, the writer used graduated standard of English lesson in SMAN 2 Bangko (SKL). It was 70 for students' reading comprehension. It means that for those who got score > 70, they passed the graduated standard (SKL). While for those who got score < 70 they did not pass the graduated standard (SKL).

In here, the writer used the statistical calculation of independent sample T-test formula. The independent sample T-test was used to find out the significant effect of using think predict read and connect strategy toward students' reading comprehension. The data were analyzed by using SPSS 16.0 Version.

The T-table was employed to see whether or not there was a significant effect between the mean score in both experimental and control class.

In analyzing the data, the writer used score of pre-test and post-test of the students. The test was composed of 25 items and each item was given score 4. Then, the data from the classroom used the category standard as follows: [6]

[6] Suharsimi Arikunto, *Dasar-dasar Evaluasi Pendidikan (edisi revisi)*, (Jakarta: Bumi Aksara, 2009), p.245

Table III.5

The Clasification of Students' Score

THE SCORE OF COMPREHENSION LEVEL	CATEGORY
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

The t-test was obtained by considering the degree of freedom (df) = (n1+n2)-2 statistically, the hypotheses were:

H_o:t_o < t-table

H_a:t_o > t-table

H_o is accepted if t_o < t-table or there is no significant effect of using Think, Predict, Read and Connect strategy toward students' reading comprehension.

H_a is accepted if t_o > t-table or there is a significant effect of using Think, Predict, Read and Connect strategy toward students' reading comprehension.

H. Validity and Reliability of Instrument

To obtain the data from the sample of the research, the writer constructed and used the instruments of the research. It was a written test taken from English book

material for 25 items. The kind of the test was multiple choices with four options, they were A, B, C, or D. The written tests were made from the indicators of reading comprehension are:

1. Identify main idea or topic of the text
2. Identify certain information
3. Identify reference of the text
4. Make inference
5. Identify complication of the text
6. Identify arguments

Before giving the test to the sample of the research, the writer made try out to the other class to determine the validity and reliability of the instruments. The test items which were not valid and variable were changed to the other item.

1. Validity

To analyze the validity of data, the writer used item difficulty by using the formula below[7]:

FV : $\frac{R}{N}$

Where = FV : Index of difficulty

R : the number of the correct answer

[7] J. B. Heaton, *Writing English Language Test*, (New York: Longman, Inc., 1988), pp.178-179

N : the number of students taking test

The standard level of difficulty is < 0.30 and >0.70. Then, the proportion correct is represented by “p”, whereas the proportion of incorrect is represented by “q”. It can be seen in the following table:

Table III.6

Indicator 1: Main Idea or topic

Indicator	**Students are Able to Find Main Idea or topic**						**N**
Item No.	**1**	**7**	**12**	**13**	**17**	**22**	32
Correct	21	16	10	11	21	21	
P	**0.66**	**0.50**	**0.31**	**0.34**	**0.66**	**0.66**	
Q	0.34	0.50	0.69	0.66	0.34	0.34	

Based on the table above, the proportion of the correct answer for reading comprehension test, item number 1 shows the proportion of correct **0.66**, item number 7 shows the proportion of the correct **0.50**, item number 12 shows the proportion of the correct **0.31**, item number 13 shows the proportion of correct **0.34**, item number 17 shows the proportion of the correct **0.66**, and item number 22 shows

the proportion of the correct **0.66**. Based on the standard level of difficulty "p" <0.30 and >0.70, it indicates that item difficulties in average of items number for finding main idea from reading comprehension are accepted.

Table III.7

Indicator 2: Certain Information

Indicator	**Students are Able to Find Certain Information**						**N**
Item No.	**3**	**4**	**9**	**10**	**19**	**25**	
Correct	15	21	20	11	19	19	**32**
P	**0.47**	**0.66**	**0.62**	**0.34**	**0.59**	**0.59**	
Q	0.53	0.34	0.38	0.66	0.41	0.41	

Based on the table above, the proportion of the correct answer for reading comprehension test, item number 3 shows the proportion of correct **0.47,** item number 4 shows the proportion of correct **0.66**, item number 9 shows the proportion of correct **0.62**, item number 10 shows the proportion of correct **0.34**, item number 19 shows the proportion of correct **0.59**, and item number 25 shows the proportion of correct **0.59**. Based on the standard level of difficulty "p" <0.30 and >0.70, it indicates that item difficulties in average of items number in finding factual information from reading comprehension are accepted.

Table III.8

Indicator 3: Identify Reference

Indicator	**Students are Able to Identify Reference**					**N**
Item No.	**2**	**6**	**14**	**18**	**21**	**32**
Correct	12	20	10	13	16	
P	**0.37**	**0.62**	**0.31**	**0.40**	**0.50**	
Q	0.63	0.38	0.69	0.60	0.50	

Based on the table above, it can be seen that the proportion of the correct answer for reading comprehension test, item number 2 shows the proportion of correct **0.37**, item number 6 shows the proportion of correct **0.62**, item number 14 shows the proportion of correct **0.31**, item number 18 shows the proportion of correct **0.40**, and item number 21 shows the proportion of correct **0.50**. Based on the standard level of difficulty "p" <0.30 and >0.70, it indicates that item difficulties in average of items number for finding locating reference in reading comprehension are accepted.

Table III.9

Indicator 4: Making Inference

Indicator	**Students are Able to Make Inference**			**N**
Item No.	**5**	**20**	**24**	
Correct	22	10	13	**32**
P	**0.69**	**0.31**	**0.40**	
Q	0.31	0.69	0.60	

Based on the table above, the proportion of the correct answer for reading comprehension test, item number 5 shows the proportion of correct **0.69**, item number 20 shows the proportion of correct **0.31**, and item number 24 shows the proportion of correct **0.40**. based on the standard level of difficulty "p" <0.30 and >0.70, it indicates that item difficulties in average of items number for making inference from reading comprehension are accepted.

Table III.10

Indicator 5: Identify Complication

Indicator	**Students are Able to Identify Complication**			**N**
Item No.	**8**	**16**	**23**	**32**
Correct	14	17	17	
P	**0.44**	**0.53**	**0.53**	
Q	0.56	0.47	0.47	

Based on the table above, the proportion of the correct answer for reading comprehension test, item number 8 shows the proportion of correct **0.44**, item number 16 shows the proportion of correct **0.53**, and item number 23 shows the proportion of correct **0.53**. Based on the standard level of difficulty "p" <0.30 and >0.70, it indicates that item difficulties in average of items number for finding supporting sentence from reading comprehension are accepted.

Table III.11

Indicator 5: Identify arguments

Indicator	**Students are Able to Identify Arguments**		**N**
Item No.	**11**	**15**	**32**
Correct	18	12	
P	**0.56**	**0.37**	
Q	0.44	0.63	

Based on the table above, the proportion of the correct answer for reading comprehension test, item number 11 shows the proportion of correct **0.56**, item number 15 shows the proportion of correct **0.37**, Based on the standard level of difficulty "p" <0.30 and >0.70, it indicates that item difficulties in average of items number for finding supporting sentence from reading comprehension are accepted.

2. Reliability

Brown says that reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining of 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.[8] Reliability means that scores from an instrument are stable and consistent.[9] It Means that the test was reliable when an examiner's results were consistent on repeated measurement. Writer estimated the reliability of instruments through its internal consistency. Regarding the internal consistency of instruments, here the writer used cronbach alpha formula.

To obtain the reliability of the test, it must know the mean and standard deviation of test. Reliability in general refers to appropriateness of a given test of its component part as measure of what it was purposed to measure. It means the test will be valid to the extent that was measured what it was supposed to measure.

Ary et al in Ilham Akbar stated that coefficient alpha or also called cronbach alpha has wider applications than K-R 20 formula. When items are scored dichotomously, it yields the same result as the K-R 20, but it can also be used when items are not score dichotomously[10]. Coefficient α generally provides a good estimate of reliability[11]. The cronbach α coefficient was computed by using SPSS 16. The following is the level of internal consistency of cronbach α[12].

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[8] H. Douglass Brown, *Language Assesment: Principles and Classroom Practices*. (New Rork: Pearson Education Inc, 2003)19

[9] John W. Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. (3rd ed.; New Jersey: Pearson Education, Inc., 2008), p. 169

[10] Ilham Akbar Yarmi, *The Efect of Using Directed Reading-Thinking Activity (DR-TA) Strategy toward Students' Reading Comprehension of Narrative Text at the First Year of Senior High School Al Huda Pekanbaru.* (Graduated Thesis, State Islamic University Sultan Syarif Kasim of Riau, 2012).p.43

[11] ***Ibid.,***

[12] ***Ibid.,***

Table III.12

A Commonly Accepted Rule of Thumb

For Describing Internal Consistency by Using Cronbach α

Cronbach's alpha	Internal Consistency
$\alpha \geq .9$	Exellent
$.9 > \alpha \geq .8$	Good
$.8 > \alpha \geq .7$	Acceptable
$.7 > \alpha \geq .6$	Questionable
$.6 > \alpha \geq .5$	Poor
$.5 > \alpha$	Unacceptable

To obtain the reliability of the test given, the writer used the SPSS 16 to find out whether the test is reliable or not.

Table III.13

Cronbach Alpha Table

Reliability Statistics

Cronbach's Alpha[a]	Cronbach's Alpha Based on Standardized Items[a]	N of Items
.766	-.800	25

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Based on the table above, it can be seen that score of reliabilty of the tests is **0.766**. Then, to know the siginificance level between r_o to r_t, the writer compare r_o to r_t (r table), where in level of significance of 5% is 0.349, and in level of significance of 1% is 0.449. The r_o is higher than r table whether in the level of 5% and 1% (0.349 < 0.766 > 0.449). It means that the test is reliable. While the score of reliability is 0.766, it means that .800 > .766 ≥ .700. So, the reliability of test was Acceptable.