

CHAPTER III

METHOD OF THE RESEARCH

A. Research Design

This research was an experimental research. According to Gay: “Experimental research is a research that can test hypotheses to establish cause and effect relationships.”¹ The design of this research was a quasi-experimental with nonequivalent control group design. According to Nunan: “a quasi-experimental design involves pre- and post-tests and experimental and control groups, but no random assignment of subjects”.² In addition, the nonequivalent control group design involves random assignment of intact groups to treatments, not random assignment of individuals. Two (or more) treatment groups are pretested, administered a treatment, and posttested.³ This research consisted of two variables; the independent variable was symbolized by “X” that was using Prepare, Structure, Read, and Think strategy and the dependent one was “Y” that referred to students’ reading comprehension on hortatory exposition text at the eleventh grade at Islamic Senior High School Al Huda Al Ilahiyah. In brief, this research can be designed by following table:⁴

¹L.R. Gay. & Peter Airasian, *Educational Research: Competencies for Analysis and Application* (Sixth Edition), New Jersey: Prentice-Hall, Inc. 2000. P.367.

² David Nunan. *Research Methods in Language Learning*. New York: Cambridge University. 1992. P. 41.

³L.R. Gay. Op. Cit. P. 395

⁴ John W. Creswell. *Educational Research*. Third Edition. New Jersey: Pearson Practice. 2008. P.299

Table III.1
The Research Design

Groups	Pre-test	Treatment	Post-test
Control	O ₁	-	O ₂
Experiment	O ₁	X	O ₂

Where:

O₁ = Pre-test
 x = Treatment
 O₂ = Post-test

B. Time and Location of the Research

This research was conducted on April 23, until May 23, 2014. This research was conducted at Islamic Senior High School Al Huda Al Ilahiyah Indragiri Hilir Regency.

C. The Subject and the Object of the Research

Subject of this research was the eleventh grade students at Islamic Senior High School Al Huda Al Ilahiyah in 2013/2014 academic year. Thus, the object of this research was the effect of using Prepare, Structure, Read, and Think strategy on the students' reading comprehension on hortatory exposition text.

D. The Population and Sample of the Research

The population of this research was 50 students of the eleventh grade at Islamic Senior High School Al Huda Al Ilahiyah Indragiri Hilir Regency. There were two classes of the eleventh grade students in this school. Because the number of population was not too large, the writer took the whole population as sample. According to Arikunto: "if the subject less then 100, it

is better to use all of population as sample.”⁵ So, the writer took all of population as sample. Therefore, the total number of sample was 50 students.

E. The Technique of Collecting Data

In order to get the data of this research, the writer used test as the technique of collecting data. The type of the test was multiple choices. Multiple choice was required the students to choose the best answer of a number of options. Furthermore, the test was used to get achievement of test series given, and it was given twice. The first was pre-test and the last was post-test. After giving pre-test for both groups, the writer gave treatments for experimental group, and did not give it for control group. Then, the writer gave post-test for both groups.

The score of the pre-test and post-test of the experimental group was compared to the pre-test and post-test of the control group. The result of the post-test was analyzed as the final data of the research. The classification of the students’ score is shown as follows:⁶

Table III.2
The Classification of Students’ Score

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

⁵Suharsimi Arikunto. *Prosedur Penelitian: Suatu Pendekatan Praktik*. Fourth Edition. Jakarta: Rineka Cipta. 2006. P. 134.

⁶Suharsimi Arikunto. *Dasar- Dasar Evaluasi Pendidikan*. Second Edition. Jakarta: Bumi Aksara. 2011. P.245

F. The Validity and Reliability of the Test

1. Validity of the Test

In this research the writer used multiple choice as the instrument of the test. In giving the test, it should be valid. It means that the instrument should be qualified. The instrument can be valid if it is measuring what the researcher wants to find out. Anderson et. All in Suharsimi claims: “a test is valid if it measures what it purposes to measure.”⁷ The validity in this research used content validity. Therefore, before giving the pre-test and post-test, the writer gave try out to the students, and they were not included as sample in this research. The validity of the test was determined by finding the difficulty level of each item. The item difficulty of the test was analyzed by using the following formula:

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

Where:

P : index of difficulty or vacility value

B : the number o correct answer

T : the number of examiners or students⁸

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 classification of the difficulty of item can be seen in the following table:⁹

⁷Ibid. P. 65

⁸Ibid. P. 208

⁹Ibid. P.210

Table III.3
The Difficulty Level of Question

No	Classification	Categories
1	0.00 – 0.30	Difficult
2	0.31 – 0.70	Medium
3	0.71 – 1.00	Easy

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). The proportion of correct answer is represented by “p”, whereas the proportion of incorrect answer is represented by “q”. The calculation of item difficulty can be seen from the following table:

Table III.4
The Students are Able to Identify the Main Idea of the Text

Variable	Identifying the main idea				N
Item No.	1	7	13	19	23
Correct	12	16	11	11	
P	0.52	0.70	0.48	0.48	
Q	0.49	0.30	0.52	0.52	

Based on the table, the item numbers of question for finding the identifying the main idea were 1, 7, 13, and 19. It was obtained that the proportion of correct answer for finding the identifying the main idea of test item number 1 was 0.52, the proportion of correct answer for test item number 7 was 0.70, the proportion of correct answer for test item number 13 was 0.48, and the proportion of correct answer for test item number 16 was 0.48. Then, based on the standard level of difficulty, all items for

finding the identifying the main idea or “p” were 0.30 and 0.70. So, the items of identifying the main idea were accepted.

Table III.5
The Students are Able to Identify the Generic Structure of the Text

Variable	Identifying the generic structure				N
Item No.	2	8	14	20	23
Correct	14	7	5	12	
P	0.61	0.30	0.22	0.52	
Q	0.32	0.70	0.78	0.48	

Based on the table, the item numbers of question for identifying the generic structure were 2, 8, 14, and 20. It was obtained that the proportion of correct answer for identifying the generic structure of test item number 2 was 0.61, the proportion of correct answer for test item number 8 was 0.30, the proportion of correct answer for test item number 14 was 0.22 and the proportion of correct answer for test item number 20 is 0.52. Then, based on the standard level of difficulty, the items of number 2, 8, and 20 for identifying the generic structure or “p” were 0.30 and 0.70. The item for number 14 is rejected because the propotion of correct answer was 0.22. So, the items number 2, 8, and 20 for identifying the generic structure were accepted, and item number 14 was rejected.

Table III.6
The Students are Able to Find out the Detail Information

Variable	Finding the detail information				N
Item No.	3	9	15	21	23
Correct	12	14	4	7	
P	0.52	0.61	0.17	0.30	
Q	0.48	0.39	0.83	0.70	

Based on the table, the item numbers of question for finding the detail information were 3, 9, 15, and 21. It was obtained that the proportion of correct answer for finding the detail information of test item number 3 was 0.52, the proportion of correct answer for test item number 9 was 0.61, the proportion of correct answer for test item number 15 was 0.17 and the proportion of correct answer for test item number 21 is 0.30. Then, based on the standard level of difficulty, the item number 3, 9, and 21 for finding the detail information or “p” were 0.30 and 0.70. The item of number 15 is rejected because the proportion was 0.17. So, the items number 3, 9, and 21 for finding the detail information were accepted, and item number 15 was rejected.

Table III.7
The Students are Able to Identify References of the Words in the Text

Variable	Identifying references of the words				N
Item No.	4	10	16	23	23
Correct	13	8	8	10	
P	0.57	0.35	0.35	0.43	
Q	0.43	0.65	0.65	0.57	

Based on the table, the item numbers of question for identifying references of the words were 4, 10, 16, and 23. It was obtained that the proportion of correct answer for identifying references of the words of test item number 4 was 0.57, the proportion of correct answer for test item number 10 was 0.35, the proportion of correct answer for test item number 16 was 0.35 and the proportion of correct answer for test item number 23 was 0.43. Then, based on the standard level of difficulty, all items for identifying references of the words or “p” were 0.30 and 0.70. So, the items of identifying references of the words were accepted.

Table III.8
The Students are Able to Identify Synonym of the Words in the Text

Variable	Identifying synonym of the words					N
Item No.	5	11	17	23	24	23
Correct	11	9	5	9	8	
P	0.48	0.39	0.22	0.39	0.35	
Q	0.52	0.61	0.78	0.61	0.65	

Based on the table, the item numbers of question for identifying synonym of the words were 5, 11, 17, 23, and 24. It was obtained that the proportion of correct answer for identifying synonym of the words of test item number 5 was 0.48, the proportion of correct answer for test item number 11 was 0.39, the proportion of correct answer for test item number 17 was 0.22, the proportion of correct answer for test item number 23 was 0.39 and the proportion of correct answer for test item number 24 was 0.35. Then, based on the standard level of difficulty, item number 5, 11,

23, and 24 for identifying synonym of the words or “p” were 0.30 and 0.70. Item number 17 was rejected because the proportion was 0.22. So, the items number 5, 11, 23, and 24 were accepted, and the item number 17 was rejected.

Table III.9
The Students are Able to Identify Antonym of the Words

Variable	Identifying antonym of the words				N
Item No.	6	12	18	25	23
Correct	16	13	5	13	
P	0.70	0.57	0.22	0.43	
Q	0.30	0.43	0.78	0.57	

Based on the table, the item numbers of question for identifying antonym of the words were 6, 12, 18, and 25. It was obtained that the proportion of correct answer for identifying antonym of the words are of test item number 6 was 0.70, the proportion of correct answer for test item number 12 was 0.57, the proportion of correct answer for test item number 18 was 0.22, and the proportion of correct answer for test item number 25 is 0.43. Then, based on the standard level of difficulty, items number 6, 12, and 25 for identifying antonym of the words or “p” were 0.30 and 0.70. the item number 18 was rejected because the proportion was 0.22. So, the items number 6, 12, and 25 of identifying antonym of the words were accepted, and the item number 18 was rejected.

2. Reliability of the Test

Reliability is the other important thing in measuring the instrument. Reliability is used to determine the consistency of the test. It focuses on how many items is given to respondents. Reliability is related to validity. Even validity is more important, but it supports the validity. To determine the reliability of the test, the writer used KR-20 formula. The formula is as follows:

$$r_{11} = \frac{n}{n-1} \frac{s^2 - \sum pq}{s^2}$$

where:

- r_{11} = Instruments of reliability
- n = Number of items
- s = Standard deviations
- p = The proportion of the students who are correct in answering an item divided with the total number of the students.¹⁰

Before calculating the the formula, the writer calculated the total variance:¹¹

$$S^2 = \frac{x^2}{n}$$

Where:

n : number of students

$$\begin{aligned} x^2 &= \sum xt^2 - \frac{(\sum xt)^2}{n} \\ &= 2934 - \frac{(250)^2}{23} \\ &= 2934 - \frac{62500}{23} \end{aligned}$$

¹⁰Ibid. P. 100

¹¹Hartono. *Analisis Item Instrument*. Bandung: Zanafa. 2010. P. 103

$$= 2934 - 2717.39$$

$$= 216.61$$

$$S^2 = \frac{216.61}{23}$$

$$= 9.42$$

$$r_{11} = \frac{n}{n-1} \frac{s^2 - \sum pq}{s^2}$$

$$= \frac{25}{25-1} \frac{9.42 - 5.61}{9.42}$$

$$= \frac{25}{24} \frac{3.81}{9.42}$$

$$= 1.04 \times 0.40$$

$$= 0.42$$

The degree of freedom (df) as follows:

$$df = n - 2$$

$$df = 23 - 2 = 21$$

To know whether the test was reliable or not, the value of r_{11} had to be compared with r product moment. The value of r_{11} should be higher than r table. From the calculation above, the value of r_{11} was 0.42. Then, r_{table} at 1% level of significance was 0.369. So, it can be concluded that 0.42 > 0.369. In the other words, the instrument was reliable because the value of r_{11} was higher than r_t .

G. The Technique of Data Analysis

In order to find out the significant difference between the students' reading comprehension taught by using PSRT strategy and taught without

using PSRT strategy , the writer used score of pre-test and post-test. The data were analyzed by using independent sample test through SPSS 16 Software. The $t_{obtained}$ values was consulted with the value of t_{table} at degree of freedom (df)= (N1+N2)-2 statistically hypothesis:

$$H_0 = t_o \quad t_{table}$$

$$H_a = t_o \quad t_{table}$$

H_0 is accepted if $t_{obtained} \leq t_{table}$ or there is no a significant difference between the students' reading comprehension on hortatory exposition text taught by using PSRT strategy and taught without using PSRT strategy at the eleventh grade of Islamic Senior High School Al Huda Al Ilahiyah.

H_a is accepted if $t_{obtained} > t_{table}$ or there is a significant difference between the students' reading comprehension on hortatory exposition text taught by using PSRT strategy and taught without using PSRT strategy at the eleventh grade of Islamic Senior High School Al Huda Al Ilahiyah.

H. The Effect Size

In this research, the writer used effect size. Effect size is a measure of strength of one's variable effect on another or relationship between two or more variables.¹² According to Miles and Banyard:

“In the case of the independent groups *t*-test, an appropriate measure of effect size is called Cohen's *d*. Cohen's *d* is a measure of how far apart the means of the two samples are; in standard deviation units”. The value of *d* is the difference between the means, divided by (pooled) standard deviation.¹³

¹²JackC. Richards and Richard Schmidt. Op. Cit. P. 175

¹³Jeremy Miles and Philip Banyard. *Understanding and Using Statistics in Psychology*. London: SAGA Publication. 2007. P. 154

To analyze the effect size, the writer used the following formula:¹⁴

$$d = \frac{2t}{df}$$

Where:

d = Effect size

t = The result of the t -test

df = The degrees of freedom, which is $N1 + N2 - 2$

To determine how far or strong the independent variable' effect (using PSRT strategy) was on the dependent variable (students' reading comprehension on hortatory exposition text), the writer used the following criteria:¹⁵

Table III.10
Interpreting of the Strenght of a Relationship (Effect Size)

No	General Interpretation of the Strenght of a Relationship	The d family
1	Very large	100
2	Large	0.80
3	Medium	0.50
4	Small	0.20

¹⁴ibid

¹⁵Nancy L. Leech, et.al. *SPSS for Intermediate Statistics Use and Interpretation*. . New Jersey: Lawrence Erlbaum Associates Publishers. 2005. P. 56