

CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

The type of this research was an experimental research. in this research, the researcher used quasi-experimental design with non equivalent control group. Quasi-experimental research is when you want to establish cause and effect between two different component. Creswell said “quasi-experimental include assignment ,but not random assignment of participant to groups”¹. There were two variables in this research, there are SQP2RS Strategy as variable X and students’ reading comprehension as variable Y. X was independent variable and Y was dependent variable.

In this research, the researcher taken two classes as sample; one class is an experimental group taught by using SQP2RS strategy and the other one is as a control group taught without using SQP2RS strategy.

Table III.1
The Research Design

CLASS	Pre-test	Treatment	Post-test
TREATMENT	O ₁	X	O ₂
CONTROL	O ₁		O ₂

O₁ = pre-test for experiment and control group

O₂= post-test for experiment and control group

¹John W. Creswell, *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, pearson education, New Jersey, 2008, p. 313

$X = \text{treatment}^2$

B. The Location and the Time of the Research

The research was conducted at the second year students of State Senior High School Muhammadiyah Rambah that is located on Tambusai Street Pasir Pengarayan, on September in 2013 of academic year.

C. The Subject and the Object of the Research

Based on the title of this research, the subject of this research is the second year of students at SMA Muhammadiyah Rambah. Then, the object of the research is using SQP2RS and students reading comprehension.

D. The Population and The Sample of the Research

1. The Population

The population of this research was all students at the second year of SMA Muhammadiyah Rambah in 2013- 2014 academic years. The total of population at the second year students of SMA Muhammadiyah Rambah was 102 students. They consisted of 4 classes: XI IPA 1 (26 students), XI IPS1 (25), XI IPS 2 (25 students) and XI IPS 3 (26 students). In this research, the writer used quasi-experimental research. In this design, the researcher need two classes as experiment class and control class. Because of the population was small, the researcher will take all the population as the sample of this research.

In determining the sample of this research, The writer used cluster random sampling technique to determine two classes as sample. One class is as experiment class that was taught by

²Prof.Dr.Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D*, (Alfabeta, Bandung, 2008), p .116

SQP2RS strategy and other was as the control was not taught by using SQP2RS strategy. Class XI IPS 2 as experiment class and XI IPS1 as control class.

Table III.2
Total Population at the Second Year Students of SMA MuhammadiyahRambah

No.	Classes	Population		Total
		Male	Female	
1	XI IPA 1	7	19	26
2	XI IPS 1	8	17	25
3	XI IPS 2	10	15	25
4	XI IPS 3	16	10	26
	Total	41	61	102
Total Population				102

The specification of the research sample can be seen on the table below:

Table III.3
Total Sample at the Second Year Students of SMA MuhammadiyahRambah

No.	Class	Sample		Total
		Male	Female	
1.	XI IPS ¹	8	17	25
2.	XI IPS ²	10	15	25
Total Sample				50

Based on the table above, the students of XI IPS 1 as control class in number 25, the students of XI IPS 2 as experimental class in number 25, and total of the sample is 50.

E. The Technique of Collecting Data

In this research, the writer used test as the instrument to collect the data needed. This instrument was used to find out how is the students' reading comprehension in analytical exposition text being taught using SQP2RS strategy is and whether there is significant effect of using this strategy or not.

There were two kinds of tests, pre-test and post-test.

a) Pre-test

At the beginning, both groups: experimental and control class were taken pre-test in order to find out their ability in reading comprehension.

b) Post-test

Post test was administered towards experimental and control class at the end of course. It was aimed to see whether there was significant effect by using SQP2RS strategy on students' reading comprehension or not.

According to Hughes, there are many techniques that can assess the students' reading comprehension but the writer used multiple choices technique that consisted of 20 items. Multiple choices technique is a technique that is designed by using four choices and the participant choose one correct answer³. Besides, the writer used answer sheet as instrumentality to take the test. This technique can assess the students' reading comprehension. All of the items were try out to all of the students in order to know the validity and reliability of the test.

³Arthur Hughes. 2005. *Testing for Language Teachers, Second Edition*, United Kingdom, Cambridge University press, p. 245

After the students did the test, the writer took the total score from the result of the reading comprehension test. The classification of the students' score can be seen in the following table:

Table III.4
The Classification of Students' Score⁴

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

For further information about the instruction of the text, the writer showed the blueprint of both test as follows:

Table III.5
Blue Print of reading test

No .	Indicators	Number of Items	Items Number
1	Students are able to identify main idea in analytical exposition text	4 items	1, 6, 11, 16
2	Students are able to identify the supporting details of analytical exposition text	4 items	2, 7, 12, 17
3	Students are able to identify generic structure of analytical exposition text	4 items	3, 8, 13, 18
4	Students are able to make communicative purpose of analytical exposition text	4 items	4, 9, 14, 19
5	Students are able to identify vocabulary of analytical	4 items	5, 10, 15, 20

⁴SuharsimiArikunto. 2007. *Dasar-dasar Evaluasi Pendidikan*, Jakarta: BumiAksara, p.245

	exposition text		
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F. Item Difficulties, Validity, and Reliability

1. The Item Difficulties

Before the tests were given to the sample of this research, the Tests were tried out to 20 students of the second year students on the other class out of the samples. Try out was intended to know the value of the test. The value itself was used to find out the level of difficulties of each item. The standard of value used was < 0.30 and $> 0.70^5$.

The items that could not fulfil the standard value were replaced. The facility value under 0.30 is considered difficult and above 0.70 is considered easy. The formula of item difficulty is as follows⁶:

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

Where

P : Index of difficulty or facility value

B : the number of correct answers

JS : the number of examiners or students

Then, the proportion correct was represented by “p” , whereas the proportion incorrect was represented by “q”.

⁵Ibid , p .208

⁶SuharsimiArikunto, *Op Cit.* p 208

2. Validity of the Test

Before the test were given to the sample, both of test had been tried out to other students at the second year. The purpose of try out was to obtain validity and reliability of the test. It was determined by finding the difficulty level of each item. Item of difficulty was determined as the proportion of correct responses. The formula for item of difficulty is follows:⁷

$$P=B/JS$$

Where P : Index of difficulty or facility value

B : The number of correct answer

JS : The number of examinees

The difficulty level of an item shows how easy or difficult a particular item in test. The test do not reach the standard level of difficulty are excluding from the test and they are change with the new items that are appropriate.

The standard level of difficulty used is <0, 30 and >0, 70.⁸ It means that the item test that is accepted if the level of difficulty is between 0.30-0.70 and it is rejected if the level of difficulty is below 0.30 (difficult) and over 0.70 (easy). Then, the proportion correct is represented by “p”, whereas the proportion incorrect is represented by “q”. see in appendix.

⁷SuharsimiArikunto, *Dasar-DasarEvaluasiPendidikan (EdisiRevisi)*, Jakarta: PT. BumiAksara, 2009, P.65

⁸*Ibid.* pp. 210

Table III.6
The Students are able to identify Main Idea in Reading Text

Variable	Identify Main Idea in analytical exposition text				N
Item no	1	6	11	16	25
Correct	15	12	12	11	
P	0.60	0.48	0.48	0.44	
Q	0.40	0.52	0.52	0.56	

Based on the table III.6, the proportion of correct answer for item number 1 shows the proportion of correct 0.60, item number 6 shows the proportion of correct 0.48, item number 11 shows the proportion of correct 0.52, item number 16 show the proportion of correct 0.56. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulty level of each item number for identifying the main idea of reading text are accepted.

Table III.7
The Students are able to identify the supporting detail in the text

Variable	Finding the supporting detail				N
Item no	2	7	12	17	25
Correct	15	15	12	13	
P	0.60	0.60	0.48	0.52	
Q	0.40	0.40	0.52	0.48	

Based on the table III.7, the proportion of correct answer for item number 2 shows the proportion of correct 0.60, item number 7 shows the proportion of correct 0.60, item number 12 shows the proportion of correct 0.48, item number 17 shows the proportion of correct 0.52 .Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulty level of each item number for identifying supporting detail is accepted.

Table III.8
The Students are Able to Identify the Generic Structure

of the Text

Variable	Identify the generic structure				N
Item no	3	8	13	18	25
Correct	14	11	8	8	
P	0.56	0.44	0.32	0.32	
Q	0.44	0.56	0.68	0.68	

Based on the table III.8, the proportion of correct answer for item number 3 shows the proportion of correct 0.56, item number 8 shows the proportion of correct 0.44, Item number 13 shows the proportion of correct 0.32, item number 18 shows the proportion of correct 0.32. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulty level of each items number for identify the generic structure is accepted.

Table III.9
The Students are able to Find the Communicative Purpose
of the Text

Variable	Finding the factual information				N
Item no	4	9	14	19	25
Correct	14	12	10	12	
P	0.56	0.48	0.40	0.48	
Q	0.44	0.52	0.60	0.52	

Based on the table III.9, the proportion of correct answer for item number 4 shows the proportion of correct 0.46, item number 9 shows the proportion of correct 0.48, item number 14 shows the proportion of correct 0.40, item number 19 shows the proportion of correct 0.48. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulty level of each item number for find the the communicative purpose is accepted.

Table III.10
The Students are able to Identify the Vocabulary

of Reading Text

Variable	Identify the Vocabulary of Reading Text				N
Item no	5	10	15	20	25
Correct	11	13	9	12	
P	0.44	0.52	0.36	0.48	
Q	0.56	0.48	0.64	0.52	

Based on the table III.10, the proportion of correct answer for item number 5 shows the proportion of correct 0.44, item number 10 shows the proportion of correct 0.52, item number 15 shows the proportion of correct 0.36, item number 20 shows the proportion of correct 0.48. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulty level of each items number for identify the vocabulary is accepted.

3. Reliability of the Test

Reliability is the other important thing in measuring the instrument. Reliability was used to determine the consistency of the test. It focused on how many items were given to the respondents. Reliability was related to validity. Even validity is more important, but reliability supports validity.⁹ There are several formulas that can be used to measure the reliability of the test. In this research, the researcher used SPSS 16.0 program.

Table III.11
Reliability
Scale: ALL VARIABLES
Case processing summary

	N	%

⁹Ibid, P. 87

Cases	Valid	25	100.0
	Excluded ^a	0	.0
	Total	25	100.0

- a. List wise deletion base on all variables in the procedure.

Scale statistics

Mean	Variance	Std. Deviation	N of Items
9.68	13.310	3.648	20

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.307	.302	20

Based on the table, we can see that cronbach's Alpha is 0,654, cronbach's alpha based on standardized items is 0,654, and number of items are 20. the mean score was 9.68, the standard deviation of the test was 3.648. It means the instrument accuracy involved in high level and this means good for a research.

Then, the score obtained (0.654) comparing to the r product moment at the 5% significant is 0.444 and the 1% significant is 0.561. Whereas the N is 20. Thus, it can read $0.444 < 0.654 > 0.561$.

G. The Technique of Data Analysis

There are some general categories to give an assessment of the aspects of the English skills in general. This category could also be applied in reading skills, especially to evaluate the students' reading comprehension in reading text. The test was composed of 20 items and the score of each number was 5. The category of score in reading test could be classified, as follows:¹⁰

Table III.4
The Scale of Students' Reading Comprehension

The Score of Reading Comprehension Level	Category
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

The data were analyzed by using the statistic analysis, in order to find out whether or not there is a significant effect of using Survey Question Predict Read Respond Summarize Strategy toward reading comprehension on analytical exposition text of the second year students at SMA Muhammadiyah Rambah. In analyzing the data, the writer used score of experimental class and control class. The technique of data analysis used in this research was T-test formula.

1. Independent sample t-test

¹⁰Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan, Edisi Revisi*. (Jakarta: Bumi Aksara, 2009), p.245

According to Hartono, T-test is one of the statistic tests that are used to know whether or not there is significant difference of the two samples of mean in two variables.¹¹ Based on the formulations of the problem, the writer analyzed the data through the following procedures for each problem by using SPSS:

The t-table is employed to see whether or not there is a difference between the mean score of both experiment and control class. The t-obtained value is consulted with the value of t-table by using degree of freedom. The formula at the degree of freedom is as follows:¹²

$$df = (Nx + Ny) - 2 \text{ statically hypothesis:}$$

$$H_a: t_o > t_{\text{table}}$$

$$H_o: t_o < t_{\text{table}}$$

Where:

df = degree of freedom

Nx = Number of students in experimental class

Ny = Number of students in control class.

Ha is accepted if $t_o > t_{\text{table}}$ or there is an effect of using Survey Question Predict Read Respond Summarize Strategy toward reading comprehension on analytical exposition text.

Ho is accepted if $t_o < t_{\text{table}}$ or there is no effect of using Survey Question Predict Read Respond Summarize Strategy toward reading comprehension on analytical exposition text.

2. Paired sample t-test

¹¹Hortono, *StatistikuntukPenelitian*, (Yogyakarta: Pustakapelajar, 2009), p. 208.

¹²Ibid, p. 22

The writer used this formula to answer the third formulation of the problem. L.R. Gay states that t-test for non independent sample is used to compare groups that are formed by some types of matching or to compare a single group's performance on a pre- and post-test or on two different treatments.

$$t = \frac{M_D}{\sqrt{\frac{D^2 - \frac{D^2}{N}}{N(N-1)}}}$$

To identify the level of the effect of using Survey Question Predict Read Respond Summarize Strategy toward reading comprehension on analytical exposition text of the second year students at SMA Muhammadiyah Rambah, it will be calculating coefficient (r^2) by using formula:¹³

$$r^2 = \frac{t^2}{t^2 + n - 2}$$

To find out the percentage of coefficient effect (K_p), it used the following formula:

$$K_p = r^2 \times 100\%.$$

To analyze the data, the researcher use T- test formula in SPSS 16.0 version.

¹³Ridwan, *Rumus dan Data dalam Analisis Statistika* (Bandung: Alfabeta, 2008), p. 125