

CHAPTER III

RESEARCH METHOD

A. The Research Design

The design of this research is quasi-experimental design. John Creswell stated that quasi-experimental design is experimental situation in which the researcher assigns, but not randomly, participants to groups because the experimenter cannot artificially create groups for the experiment.¹ Furthermore, Gay and Peter Airasian stated that quasi-experimental design is used when the researcher keeps the students in existing classroom intact and the entire classrooms are assigned to treatments.²

In this design, the researcher used two classes as the sample; one class was as experimental group taught by using 10 most important words and another group was a control group taught by using conventional strategy. Both groups were given a pre-test and post-test. Only the experimental group received the treatment taught by using 10 most important words strategy.

According to Campbell and Stanley, the design of this research can be illustrated as follows:³

¹ John W. Creswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research, Third Edition*. (New Jersey: Pearson Education, 2008).p. 645

² L.R. Gay, and Peter Airasian. *Educational Research: Competencies for Analysis and Application (Sixth Edition)*. (New Jersey: Pearson Prentice-Hall, 2000). p.394

³Donald T. Campbell and Julian C. Stanley. *Experimental and Quasi-Experimental Design for Research*. (USA: Houghton Mifflin Company, 1963).p.47

Table III.1
The Research Design

Class	Pretest	Treatment	Posttest
Experiment	O ₁	X	O ₂
Control	O ₃	-	O ₄

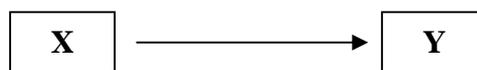
Where:

O = Students' reading comprehension in pre-test and post-test of experimental and control class

X = Teaching reading by using 10 most important strategy

This research used quantitative research methods. In quantitative research, it can be seen that the variables relationship of investigated object were closely cause and effect relationship. Therefore, there were two variables in this research, independent and dependent.⁴ This is the schema of the variable relationship:

The Variable Relationship



Variable Y was influenced by variable X, in which the variable X(independent) was 10 most important words strategy and the variable Y (dependent) was students' reading comprehension.

B. The Time and Location of the Research

The research was conducted at the eleventh grade of Senior High School 7 Pekanbaru located at Jati street, Pekanbaru. The research was done from April 21st to May 10th, 2014.

⁴Sugiyono. *Metode Penelitian Kuantitatif dan Kualitatif dan R&D*. (Bandung: Alfabeta, 2013). p.9-11

C. The Subject and the Object of the Research

The subject of the research was the eleventh grade of Senior High School 7 Pekanbaru. The object of the research was the effect of using the 10 most important words strategy on students' reading comprehension in narrative text.

D. The Population and the Sample of the Research

1. The Population

The population of this research was the eleventh grade of SMA7 Pekanbaru in 2013-2014 academic years. The number of the eleventh grade of SMA7 Pekanbaru was 207 students. They consisted of seven classes, four classes for science major and three classes for social major. It can be seen in the following table population below:

Table III.2
The Total Population of the Eleventh Grades
at SMA 7 Pekanbaru

No	Class	Total
1	XI IPA I	30
2	XI IPA 2	30
3	XI IPA 3	32
4	XI IPA 4	30
5	XI IPS 1	28
6	XI IPS 2	28
7	XI IPS 3	29
TOTAL		207

2. The Sample

The population above was large enough to be taken all as sample of the research. Based on the design of the research, the writer took only two classes as the sample of this research for experimental class and control class. The class XI IPS 1 and XI IPS 2 were using Cluster random

sampling. Thus, the writer chose students of XI IPS 1 to be control class and students of XI IPS 2 to be experimental class.

E. The Technique of Collecting Data

1. Test

The data of this research were obtained by using test as instrument to collect the data. A test is a method of measuring a person's ability, knowledge, or performance in a given domain.⁵ To obtain the students' reading comprehension by using 10 most important words strategy, the students were given a test. The test was used to find out the students' comprehension in reading narrative text. The test was divided into two stages. The first was pre-test and it was given before the treatment. The second was post-test and it was given after the treatment. The test was multiple choice questions. The test consisted of 20 items and each item was given score 5.

The description of the test used in this research can be seen from the blue print below:

Table III.3
Blue Print of the Pre-Test

No	Indicators	Number of items
1	Identify the main idea of the text	1, 12,
2	Identify the factual information of the text	2, 7, 8, 9, 14,17
3	Identify the communicative purpose of the text	4, 5, 6, 11,13,15
4	Identify the reference of the text	3, 16, 18, 19,
5	Identify the inference of the text	10, 20
Total		20 items

⁵ H. Douglas Brown. *Language Assessment: Principles and Classroom Practices*. (San Francisco: Longman, 2003). p.3

Table III.4
Blue Print of the Post-Test

No	Indicators	Number of items
1	Identify the main idea of the text	1, 7, 17
2	Identify the factual information of the text	3, 6, 11, 12, 16
3	Identify the communicative purpose of the text	2, 8, 13,14, 18
4	Identify the reference of the text	4, 9, 15, 19
5	Identify the inference of the text	5, 10, 20
Total		20 items

The data of this research were taken from the scores of students' posttest. The procedures of collecting data:

1. Pretest

At the beginning of this research every participant both experimental and control groups was given the pretest. The pre-test was to determine the ability of the students.

2. Treatment

Treatment was conducted for experimental class only. Treatment was using 10 most important words strategy in teaching English part of reading comprehension. The length of the time to apply the technique was about six meetings and every meeting was about 45 minutes.

3. Posttest

After seven meetings (including pretest), the post was done. The result of the posttest for experimental class was analyzed and used as final data for this research.

Before giving the test to the research participants, the writer gave try out to other classes to find out the validity and reability of the test.

According to Arikunto, there is one technique to describe the classification of students' score is shown below:⁶

Table III.5
Classification of Students' Score

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

a. Validity

The test is said to be valid if it measures accurately what it is intended to measure⁷. Every test, whether it is short, informal classroom test or a public examination should be valid as the test constructor can make it.⁸

According to Arikunto, there are two kinds of validity, namely Logical Validity and Empirical Validity. In this research, the researcher used logically validity. Logical Validity is the

⁶SuharsimiArikunto. *Dasar-dasarEvaluasiPendidikan*. (Jakarta: BumiAksara, 2009). p.245

⁷Arthur Hughes, *Testing for Language Teacher, 2nd Edition*.(New York: Cambridge University Press, 2003). p.26s

⁸J.B. Heaton, *Writing English Language Tests*.London, Longman Group Publisher, 1991, p.159.

validity stated based on the result of experience.⁹ It means that the instrument of the research is stated valid if the instrument has been examined from the experience such as try out. The purpose of try out itself was to obtain validity and reliability of the test. It was determined by finding the difficulty level of each item.

According to Suharsimi Arikunto, The formula of item difficulty is as follows:¹⁰

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

Where P : index of difficulty or facility value

B : the number of correct answers

JS : the number of examines or students taking the test

The standard level of the difficulty used is >0.30 and <0.70 , it means that the level of difficulty is between 0.30 and 0.70. Then, the proportion correct is represented by “p”, whereas the proportion incorrect is represented by “q”, it can be seen in the following tables:

Identify the main idea of the text

Variable	Main idea		N
Item No	1	12	30
Correct item	13	12	
P	0.43	0.4	
Q	0.56	0.6	

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

$$Q = 1.00 - P$$

⁹Suharsimi, Op.Cit, p.159.

¹⁰Ibid. p. 208

Based on the table above, it shows the portion of correct answer. For item number 1 shows the proportion of correct 0.43, item number 12 shows the proportion of correct 0.4. 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 stating the main idea of the text are accepted.

Identify the factual information of the text

Variable	Factual information						N
Item No	2	7	8	9	14	17	30
Correct item	21	11	12	19	13	17	
P	0.7	0.36	0.4	0.63	0.43	0.56	
Q	0.3	0.63	0.6	0.36	0.56	0.43	

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

$$Q = 1.00 - P$$

Based on the table above, the item number for identifying factual information is 2, 7, 8, 9, 14, and 17. It shows that the proportion of correct answer number 2 is 0.7, the proportion of correct answer number 7 is 0.36, the proportion of the correct answer number 8 is 0.4, the proportion of the correct answer number 9 is 0.63, the proportion of the correct answer number 14 is 0.43, and the proportion of correct answer number 17 is 0.56. 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 stating main idea of the text are accepted.

Identify the Communicative Purpose of the text

Variable	Communicative purpose						N
Item No	4	5	6	11	13	15	30
Correct item	9	20	19	15	13	9	
P	0.3	0.66	0.63	0.5	0.43	0.3	
Q	0.7	0.33	0.36	0.5	0.56	0.7	

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

$$Q = 1.00 - P$$

Based on the table above, the item number for identify the communicative purpose are 4, 5, 6, 11, 13, and 15. It shows that the proportion of correct answer number 4 is 0.3, the proportion of correct answer number 5 is 0.66, the proportion of correct answer number 6 is 0.63, the proportion of correct answer number 11 is 0.5, the proportion of correct answer number 13 is 0.43, and the proportion of the correct answer number 15 is 0.3. 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 identifying communicative purpose are accepted.

Identify the reference of the text

Variable	Reference				N
Item No	3	16	18	19	30
Correct item	10	9	21	18	
P	0.33	0.3	0.7	0.6	
Q	0.66	0.7	0.3	0.4	

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

$$Q = 1.00 - P$$

Based on the table above, the item number for identifying the reference is 3, 16, 18, and 19. It shows that the proportion of

correct answer number 3 is 0.33, the proportion of correct answer number 16 is 0.3, the proportion of the correct answer number 18 is 0.7 and the proportion of the correct answer number 19 is 0.4. 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 identifying reference are accepted.

Identify the inference of the text

Variable	Inference		N
Item No	10	20	30
Correct item	14	20	
P	0.46	0.66	
Q	0.53	0.33	

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

$$Q = 1.00 - P$$

Based on the table above, the item number for identifying the inference is 10 and 20. It shows that the proportion of correct answer number 10 is 0.46 and the proportion of correct answer number 20 is 0.66. 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 identifying inference are accepted.

2. Reliability

One of the characteristic of instruments is good or not if the instrument reliable. Reliability is used to measure the quality of the tests score and a test is consistent. To the reliability of the instrument, there are some formulas used in finding the reliability of instrument, they are

Spearman-Brown formula, Flanagan formula, Rulon formula, Hoyt formula, Alfa formula, Kuder Richardson 20 formula and Kuder Richardson 21 formula. In this research, the writer used Kuder Richardson 20 (K-R 20) formula to calculate the reliability of the test. The formula is as follows:

$$r_{ii} = \left(\frac{n}{n-1} \right) \left(\frac{St^2 - \sum pq}{St^2} \right)$$

R11 = Reliability of the test

P = Proportion subject that answer the true of item

Q = Proportion subject that answer the false of item (q= 1-p)

pq = Total equals between p and q

n = Total of the item

S = Standard Deviation

St² = Total Varian

Before calculating the data with KR 20, first writer find the total Varian.

$$\begin{aligned} St^2 &= \frac{X^2}{N} \\ Xt^2 &= Xt^2 - \left(\frac{Xt}{N} \right)^2 \\ &= 3235 - \frac{(301)^2}{30} \\ &= 214.97 \end{aligned}$$

$$\begin{aligned}
 St^2 &= 214.97 \\
 &\frac{\quad}{30} \\
 &= 7.17
 \end{aligned}$$

So,

$$\begin{aligned}
 R_{11} &= \frac{20}{20-1} \frac{51.41-4.49}{51.41} \\
 &= 1.052 \quad 0.913 \\
 &= \mathbf{0.96}
 \end{aligned}$$

$$r_{ii} > r_t$$

The statistical counting above, the score reliability of the test is 0.96. To know the reliability of the test must be compared with r product moment. r_{ii} must be higher than r_t . Then r_t at 5% level of significance is 0.344. While in the significance level of 1% is 0.449. So, it can be analyzed that r_{ii} higher than r_t , **5% < r_{ii} > 1%. (0.344 < 0.96 > 0.449)**. In the other words, the instrument was reliable.

The reliability coefficients for good identified kinds of structure text and reading comprehension test were expected to exceed 0.0 and closed 1.00. Suharsimi also states that the reliability of the test was considered is follows:

- a. 0.0-0.20 = reliability is poor
- b. 0.21-0.40 = reliability is satisfactory
- c. 0.41-0.70 = reliability is good
- d. 0.71-1.0 = reliability is excellent

F. The Technique of Data Analysis

In order to determine whether there is any significant difference between students' reading comprehension taught by using 10 most important words strategy and students' reading comprehension taught by using conventional strategy. The writer used score of pretest and posttest.

The data were analyzed by using the statistical analysis. In this research, the writer used T-test formula as follows:¹¹

$$t_o = \frac{M_x - M_y}{\sqrt{\frac{SD_x^2}{N-1} + \frac{SD_y^2}{N-1}}}$$

Where:

t_o = The value of T-obtained

M_x = Mean score of experimental sample

M_y = Mean score of control sample

SD_x = Standard deviation of experimental class

SD_y = Standard deviation of control class

N = Number of the students

The t – table was employed to see whether there was a significant effect between the mean score of both experiment and control groups. The t – obtained value was consulted with the value of t – table at the degree of freedom (df) as follows:

$$df = N_x + N_y - 2$$

¹¹Hartono. *Statistik untuk Penelitian*. (Yogyakarta: Pustaka Pelajar, 2003). p.178.

Where:

df = the degree of freedom.

N_x = the number of students in experimental class.

N_y = the number of students in control class.

Statically hypothesis is:

H_a = $t_o > t - \text{table}$

H_o = $t_o < t - \text{table}$

H_a is accepted if $t_o > t - \text{table}$ or there is effect of using 10 most important words strategy on students' reading comprehension in narrative text.

H_o is accepted if $t_o < t - \text{table}$ or there is no effect of using 10 most important words strategy on students' reading comprehension in narrative text.