

CHAPTER III

RESEARCH METHOD

A. Research Design

The design of this research is an experimental research. According to Gay and Airaisan, experimental research is “the only type of the research that can test hypotheses to establish cause-and-effect relationship”.¹ The method that is used is a quasi-experimental research. According to Muijs, quasi-experimental designs are meant to approximate as closely as possible the advantages of true experimental designs where the problems mentioned above occur². Research design that was used in this research was Non Equivalent Experimental, which involved two groups (experimental and control groups), both of them were given a pre-test and post-test in which both groups did not have pre-experimental sampling equivalent.³ Before doing the experiment, the students were given the pre-test. The experimental group got treatment and the control group did not get the treatment. After the treatment, a post-test was given to the students. The model of research design can be illustrated as follows:

¹L.R.Gay and Peter Airasian, *Educational research: Competencies for Analysis and Application*. (United States: Prentice Hall), 2000,P. 367

²Daniel Muijs, *Doing Quantitative Research in Education*, (New Delhi: Sage Publications), 2004, P. 26

³Donald T. Campbell and Julian C. Stanley, *Experimental and Quasi-Experimental For Research*, (London: Houghton Miffling Company), 1966, P. 47

Table III.1
Non-Equivalent Experimental Design

| GROUP | PRE-TEST | TREATMENT | POST-TEST |
|----------------|-----------------|------------------|------------------|
| X ₁ | T1 | | T2 |
| X ₂ | T1 | X | T2 |

Where:

X₁ : Experimental group

X₂ : Control group

T1 : Pre-test for experimental group and control group

: Receiving particular treatment

X : Without particular treatment

T2 : Post-test for experimental group and control group.

B. Time and Location of the Research

This research was conducted from September up to October 2013.

The research was carried out to access the second year students of State Junior High School 25 Pekanbaru. This school is located at Kartama Street Arengka, Pekanbaru.

C. Subject and Object of the Research

The subject of the research was the second year students of Junior High School 25 Pekanbaru. While the object of this research was the effect of using Question, Reduce, Read and Discuss Strategy toward reading comprehension in recount text.

D. Population and Sample of the Research

Population of this research was the second year students of state junior high school 25 Pekanbaru in 2013-2014 academic years. The total numbers of the students is 256. It has 8 classes, one class consist of 32 students. The population in this school is large enough to be taken all as a sample of the research. Furthermore, because they are homogenous or because all samples have the same characteristic, the writer used random sampling technique, especially cluster random sampling to choose the classes as sample. According to Gay and Airasian random sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample⁴. Cluster sampling randomly selects the groups, not individuals⁵. In this research, the reseacher took two of eight classes as the samples. Class VIII.4 was as a experimental class and class VIII.3 was as an control class. Both class VIII.4 and class VIII.3 consisted of 32 students, so that the total sample of this research was 64 students.

⁴L.R. Gay and Peter Airasian. Op. Cit. P. 123

⁵Ibid, P. 129

Table III.2
Sample of The Second Year Students at SMPN 25 Pekanbaru

| No | Class | Male | Female | Number of students |
|-------|--------|------|--------|--------------------|
| 1. | VIII.4 | 14 | 18 | 32 |
| 2. | VIII.3 | 21 | 11 | 32 |
| Total | | | | 64 |

E. Technique of Collecting Data

In this research, the researcher used test to collect the data. The test was used to find out the students' comprehension in reading recount text. The researcher used multiple choices that were designed by using four choices and the respondent chose one of the correct answers. There were 20 questions that had to be done by the students in 2 x 40 minutes. The test was divided into two tests;

- a. Pre-test was given to the students before treatment of the strategy to both of the classes, experimental class and control class. This test was used to measure basic reading comprehension in recount text.
- b. Post-test was given after doing the treatment of the strategy to the experimental class and control class which had not been given to the students in order to find out the difference in reading comprehension of recount text.

The blue print of reading comprehension is described in the table below.

Table III.3
Blue Print of Test (pre-test)

| No. | Indicators | Number |
|------------|---|----------------------|
| 1. | The students are able to identify the main idea in recount text. | 2, 6, 11, 19 |
| 2. | The students are able to identify the purpose in recount text. | 15, 18 |
| 3. | The students are able to identify generic structure in recount text. | 4, 9, 10, 14, 16, 20 |
| 4. | The students are able to identify specific information in recount text. | 1, 5, 7, 12, 17 |
| 5. | The students are able to identify reference in recount text. | 3, 8, 13 |

Table III.4
Blue Print of Test (post-test)

| No. | Indicators | Number |
|------------|---|----------------------|
| 1. | The students are able to identify the main idea in recount text. | 2, 9, 14, 16 |
| 2. | The students are able to identify the purpose in recount text. | 5, 12 |
| 3. | The students are able to identify generic structure in recount text. | 4, 6, 11, 17, 18, 20 |
| 4. | The students are able to identify specific information in recount text. | 1, 8, 10, 13, 15 |
| 5. | The students are able to identify reference in recount text. | 3, 7, 19 |

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 |

F. Validity and Reliability of the Test

1. Validity of the Test

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 validity stated

⁶Suharsimi Arikunto. *Dasar-dasar Evaluasi Pendidikan*. (Jakarta: Bumi Aksara, 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, Logman Group Publisher, 1991, p.159.

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”, wheraes the proportion incorrect is represented by “q”, it can be seen in the following tables:

Table III.6
Identify main idea in recount text

| Variable | Identify Main Idea | | | | N |
|--------------|--------------------|------|-----|------|----|
| Item No | 2 | 9 | 14 | 16 | 32 |
| Correct item | 17 | 17 | 16 | 15 | |
| P | 0.53 | 0.53 | 0.5 | 0.46 | |
| Q | 0.46 | 0.46 | 0.5 | 0.53 | |

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

$$Q = 1.00 - P$$

⁹Suharsimi, Op.Cit, p.159.

¹⁰Ibid. p. 208

Based on the table III.6 above, the proportion of correct answer for item number 2 shows the proportion of correct 0.53, item number 9 shows the proportion of correct 0.53, item number 14 shows the proportion of correct 0.5, item number 16 shows the proportion of correct 0.46. 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 main idea are accepted.

Table III.7
Identify communicative purpose in recount text

| Variable | Identify Communicative Purpose | | N |
|--------------|--------------------------------|------|----|
| Item No | 5 | 12 | 32 |
| Correct item | 18 | 20 | |
| P | 0.56 | 0.62 | |
| Q | 0.43 | 0.37 | |

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

$$Q = 1.00 - P$$

Based on the table III.7, the proportion of correct answer for item number 5 shows the proportion of correct 0.56, item number 12 shows the proportion of correct 0.62. 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.

Table III.8
Identify generic structure in recount text

| Variable | Identify Generic Structure | | | | | | N |
|--------------|----------------------------|-----|------|------|------|------|----|
| Item No | 4 | 6 | 11 | 17 | 18 | 20 | 32 |
| Correct item | 19 | 16 | 17 | 18 | 14 | 19 | |
| P | 0.59 | 0.5 | 0.53 | 0.56 | 0.43 | 0.59 | |
| Q | 0.40 | 0.5 | 0.46 | 0.43 | 0.56 | 0.40 | |

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

$$Q = 1.00 - P$$

Based on the table III.8, the proportion of correct answer for item number 4 shows the proportion of correct 0.59, item number 6 shows the proportion of correct 0.5, item number 11 shows the proportion of correct 0.53, item number 17 shows the proportion of correct 0.56, item number 18 shows the proportion of correct 0.43, item number 20 shows the proportion of correct 0.59. 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 generic structure are accepted.

Table III.9
Identify reference in recount text text

| Variable | Identify Reference | | | N |
|---------------------|---------------------------|-------------|------------|-----------|
| Item No | 3 | 7 | 19 | 32 |
| Correct item | 17 | 14 | 16 | |
| P | 0.53 | 0.43 | 0.5 | |
| Q | 0.46 | 0.56 | 0.5 | |

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

$$Q = 1.00 - P$$

Based on the table III.9, the proportion of correct answer for item number 3 shows the proportion of correct 0.53, item number 7 shows the proportion of correct 0.43, item number 19 shows the proportion of correct 0.5. 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.

Table III.10
Identify specify information in recount text

| Variable | Identify Specific Information | | | | | N |
|--------------|-------------------------------|------|------|------|------|----|
| Item No | 1 | 8 | 10 | 13 | 15 | 32 |
| Correct item | 20 | 18 | 13 | 19 | 18 | |
| P | 0.62 | 0.56 | 0.40 | 0.59 | 0.56 | |
| Q | 0.37 | 0.43 | 0.59 | 0.40 | 0.43 | |

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

$$Q = 1.00 - P$$

Based on the table III.10, the proportion of correct answer for item number 1 shows the proportion of correct 0.62, item number 8 shows the proportion of correct 0.56, item number 10 shows the proportion of correct 0.40, item number 13 shows the proportion of correct 0.59, item number 15 shows 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 difficulties in average of each item number for identifying specific information are accepted.

2. Reliability of the Test

A test must first be reliable as measuring instrument. Reliability is a necessary characteristic of a good test. Reliability refers to the consistency of measurement, or the extent to which the score are similar or different forms of the same instrument or occasions of data collection.¹¹ In this research, the researcher used the

¹¹James H. McMillan & Sally Scumacher, *Research in Education: Evidence-based inquiry*, New York: Pearson Education, 2006, P.130

Kuder Richardson 20 (K-R 20) formula to calculate the reability of the test.¹² The formula is as follows:

$$R_{11} = \frac{n}{n-1} \frac{S^2 - pq}{S^2}$$

Where :

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

$$S = \sqrt{\frac{\sum X^2}{N}} = \sqrt{\frac{341}{32}} = \sqrt{10.65} = 3.26$$

$$S = 3.26$$

$$n = 32$$

$$pq = 4.9$$

$$x^2 = 341$$

$$N = 32$$

So,

$$R_{11} = \frac{32}{32-1} \frac{3.26^2 - 4.9}{3.26^2}$$

$$= \frac{32}{31} \frac{10.62 - 4.9}{10.62}$$

¹²Op. Cit. p.100

$$= 1.03 - 0.538$$

$$= \mathbf{0.554}$$

$$r_{ii} > r_t$$

The statistical counting above, the score reliability of the test is 0.513. 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 0.349. 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%. (0.349 < 0.554 > 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:¹³

- 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

G. Technique of Data Analysis

In order to find out whether there is a significant different between using and without using Question, Reduce, Read, Discuss Strategy toward reading comprehension of the second year students at State Junior High

¹³Ibid, p.218

School 25 Pekanbaru, the data were analyzed statistically. In analyzing the data, the researcher used scores of post-test of the experimental, and control class. Those scores were analyzed by using statistical analysis. In this research, the researcher used T-test formula (independent sample t-test) and it was calculated by using software SPSS 16 Version.

Hinton said that the independent sample T-test is undertaken when the samples are unrelated with different participant in each sample. This test is also called the unrelated T-test or the independent measure T-test.¹⁴ Miles and Banyard also said that the independent groups T-test is the most powerful and is the test most likely to spot significant difference in the data. The independent groups T-test can be used for a non-experimental or quasi-experimental design.¹⁵

In this research, The t-test for independent sample is used to determine the first and the second of the formulation of the problem, whether there is probably a significant difference between the means of two independent sample.¹⁶ The different mean was analysed by using T-test formula:¹⁷

¹⁴Perry R. Hinton. *SPSS Explained*. 2004. New York: Routledge. P. 107

¹⁵Jeremy miles and Philip Banyard. *Understanding and Using Statistic in Psychology*. 2007. SAGE Publication: Los Angeles. P. 136-137

¹⁶L.R. Gay and Peter Airasian. *Op cit*, 484

¹⁷Hartono. " *statistik pendidikan* ". 2004. Pekanbaru: CV Jaya patama. P.193

T-test is obtained by considering the degree of freedom (df) = $(N_1+N_2) - 2$. Statistically, the Hypothesis are:

H_0 is accepted if $t_o < t\text{-table}$ or there is no significant different between the students' who are taught by using and without using Question, Reduce, Read and Discuss strategy toward reading comprehension in recount text of the second year students at State Junior High School 25 Pekanbaru.

H_a is accepted if $t_o > t\text{-table}$ or there is a significant different between the students' who are taught by using and without using Question, Reduce, Read and Discuss strategy toward reading comprehension in recount text of the second year students at State Junior High School 25 Pekanbaru.