

CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

This research was a quasi experiment design because this research found out the effect of using literature circle strategy toward students reading comprehension. John Creswell states that quasi-experiment is experimental situation in which the researcher assigns participants to groups, but not randomly.¹ The writer used intact groups, the first class was as the experimental groups and the second class was as the control group.

Furthermore, Gay and Airasian state that quasi-experimental design is used when the writer keeps the students in existing classroom intact and the entire classrooms are assigned to treatments.² In addition, educational interventions in schools are typically evaluated using quasi experimental designs.³ It is an appropriate one to this research in order to know the significant difference of using literature circle strategy toward students' reading comprehension at SMAN 1 Reteh.

¹ Creswell, John W. *Educational Research (Third Edition)*. United States: Pearson Prentice-Hall, 2008. p. 313

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

³ Daniel Muijs. *Doing Quantitative Research in Education with SPSS [Electronic Book]*. London: SAGE Publication. Ltd., 2004. p. 26.

Therefore, the writer determined that research into a quasi-experimental research, especially non-equivalent control group design. It was structured like a pretest-posttest randomized experiment, but it lacks the key feature of the random assignment. In the non-equivalent control group design, we most often used intact groups that we think are similar as the treatment and control groups. It is also supported by Campbell and Stanley who states that non-equivalent control group design involves an experimental group and a control group both given a pretest and a posttest, but in which the control group and the experimental group do not have pre-experimental sampling equivalence.⁴

Table III.1

Non-equivalent Control Group Design

	Pre-test	Treatment	Post-test	Difference
Experimental Group	Y	O	Y	Pre-Y – Post-Y
Control Group	Y		Y	Pre-Y – Post-Y

} compared

In conducting this research, the writer assigned intact groups the experimental and control treatments, using pre-test and post-test to both groups, conducting experimental treatment activities with the experimental group only. The pre-test was used to measure the students' reading

⁴Donald T. Campbell and Julian C. Stanley. *Experimental and Quasi-Experimental Design for Research [Electronic Book]*. USA: Houghton Mifflin Company. 1963. p. 47.

comprehension before being taught by literature circle strategy and to know how much significant difference of literature circle strategy. So, it was compared between pre-test and post-test to find out the significant difference of the strategy itself.

B. The Location and the Time of the Research

The researcher conducted the research of the second year students at SMAN 1 Reteh, located in Reteh district, Indragiri Hilir Regency. This research was done during two months, started on January 10, until February 14, 2014.

C. The Subject and Object of the Research

Subject of the research was the second year students at SMAN 1 Reteh, Indragiri Hilir Regency. The object of this research was the difference of using literature circle strategy toward reading comprehension.

D. The Population and the Sample of the Research

The population of this research was the second year students of SMAN 1 Reteh, Indragiri Hilir Regency in 2013-2014 academic year. The number of the second year students at SMAN 1 Reteh was 210 students. It consisted of 6 classes. There were three classes for social department, three classes for natural department but one class of science department was an excellent class.

In this research, the researcher used the cluster sampling as the way to choose the sample of population. In cluster sampling, the writer selected

sample based on the knowledge about the group itself. According to Kothari, cluster sampling is defined as follow⁵;

“If the total area of interest happens to be a big one, a convenient way in which a sample can be taken is to divide the area into a number of smaller non-overlapping areas and then to randomly select a number of these smaller areas (usually called clusters), with the ultimate sample consisting of all (or samples of) units in these small areas or clusters.”

In addition, Singh states that to select the intact group as a whole is known as a Cluster sampling. In Cluster sampling the sample units contain groups of elements (clusters) instead of individual members or items in the population⁶.

The researcher determined both classes to be sample of population by using lottery. The writer prepared five rolled of papers which were written each class then the writer shacked them into a bottle. After that, the researcher pulled two rolled of papers out. Finally, the writer chose the class of XI IPA II and XI IPA III as the sample of population. Based on the preliminary study by asking the teacher in State Senior High School 1 Reteh, both classes were almost homogenous for the total of the students in the class even the achievement in learning.

⁵ C. R. Kothari. *Research Methodology Methods and Techniques [Electronic Book]*. Jaipur: New Age International Publication, 2004. p. 65

⁶ Yogesh Kumar Singh. *Fundamental of Research Methodology and Statistics [Electronic Book]*. New Delhi: New Age International Publisher. 2006. p. 89

Table III.2
The Total Population of the Second Year
Students at SMAN 1 Reteh 2013-2014

No.	Class	Total	Complement
1.	The Second Year students at SMAN 1 Reteh	210	Population
2.	XI IPA II	30	Sample (as a experimental class)
3.	XI IPA III	30	Sample (as a control class)

E. The Technique of Collecting Data

1. Test

The researcher gave test; pre-test and post test to the students. In teaching reading in our curriculum (KTSP), if the students are able to achieve the goal, this means that assessment of reading ability needs to be correlated with purposes of reading.

According to Hughes, there are many techniques that can assess the students' comprehension but the researcher used multiple choices technique. Multiple choices technique are a technique that will be designed by using four choices and the respondent chooses one

which is based on the question. This technique can assess the student's reading comprehension. In this research, the researcher gave twenty four questions for the respondents. They were based on the indicators of reading comprehension in operational concept. There are six indicators in reading comprehension and for each indicator the researcher makes 4 questions.

F. The Technique of Data Analysis

The technique of analysis data, this study used t-test because this study compared the result of test between pre-test and post-test from control class and sample class.

T-test formula:
$$t_o = \frac{Mx - My}{\sqrt{\frac{SDx^2}{N-1} + \frac{SDy^2}{N-1}}}$$

t- obs : t-test

Mx : The means of post test/ post-observation Experimental group

My : The means of post test/ post-observation control group

SDx : Standard deviation of experimental group

SDy : Standard deviation of control group

N : Number of student⁷

The t-table was employed to see whether there is a significant difference between the mean score of both experiment and control group. The t-obtain

⁷Hartono. *Statistik Untuk Penelitian*. (Yogyakarta: Pustaka Pelajar, 2004) p. 208

value is consulted with the value of t -table at degree of freedom (df) = $(N_1 + N_2) - 2$ statically hypothesis.

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

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

H_a is accepted if $t_o > t\text{-table}$ or there is difference of using literature circle strategy toward students' reading comprehension.

H_o is accepted if $t_o < t\text{-table}$ or there is no difference of using literature circle strategy toward students' reading comprehension.

G. The Validity and Reliability of the Test.

1. The Validity of the Test.

There are some types of validity namely; content validity, construct validity, concurrent validity and predictive validity⁸. This research applied content validity, concerned with how well the test measures the subject and learning outcomes covered during instruction period. A test is said to have content validity if its content constitutes a representative sample of the language skill.⁹ Validity refers to the degree in which our test or other measuring device is truly measuring what we intended it to measure.¹⁰ It

⁸Suharsimi Arikunto., *Dasar-dasar Evaluasi Pendidikan (Edisi Revisi)*, Jakarta: Bumi Aksara. 2009. p.67

⁹ Arthur Hughes, *Testing for Language Teachers*, (United Kingdom: Cambridge University Press, 2003).pp. 26.

¹⁰ Validity and Reliability. Retrieved on April 5th, 2012. <http://allpsych.com/researchmethods/validityreliability.html>

means that our test is concerned what we want to measure. It determines whether the test results have validity or not.

According to Arikunto, level of difficulty is one aspect to consider in analyzing whether the test is good or not. The good test is a test that is not too easy and not too difficult.¹¹ The formula that can be used in measuring the validity of the test items is as follows:¹²

$$p = \frac{Nb}{N}$$

Where : p : Difficulty Index

Nb : number of students who answered correctly

N : The number of students

The difficulty index can be classified as follow:¹³

The item with p 1,00-0,30 is difficult

The item with p 0,30-0,70 is medium

The item with p 0,70-1,00 is easy

Based on the description above, Arikunto also argues that the good item is supposed to be medium. It is not too difficult and not too easy.

¹¹ Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan (edisi revisi)*, (Jakarta: Bumi Aksara, 1996), p.207

¹² Ibid. p. 208

¹³ Ibid. p.210

**The Students Are Able To Read And To Comprehend The Analytical Exposition
Text**

Variable	Read and Comprehend The Text				N
Item no	1	7	13	19	24
Total of Correct Item	10	15	16	17	
Presentase	0.41	0.60	0.66	0.70	

**The Students are Able to Identify the Communicative Purpose of Analytical
Exposition Text**

Variable	Identify the Communicative Purpose				N
Item no	2	8	14	20	24
Total of Correct Item	16	10	16	13	
Presentase	0.66	0.41	0.66	0.54	

**The Students Are Able To Identify Generic Structure Of Analytical Exposition
Text**

Variable	Identify Generic Structure of the Text				N
Item no	3	9	15	21	24
Total of Correct Item	10	10	18	17	
Presentase	0.41	0.41	0.75	0.70	

The Students are Able to Answer the Questions Related to Analytical Exposition

Text

Variable	Answer the Questions Related to the Text				N
Item no	4	10	16	22	24
Total of Correct Item	12	15	16	13	
Presentase	0.50	0.60	0.66	0.54	

The Students are Able to Identify Lexicon Gramatical Features Of Analytical

Exposition Text

Variable	Identify Lexicon Gramatical Features				N
Item no	5	11	17	23	31
Total of Correct Item	15	10	16	15	
Presentase	0.60	0.41	0.66	0.60	

The Students are Able to Identify Regular and Irregular Verbs of Analytical

Exposition Text

Variable	Identify Regular And Irregular Verbs				N
Item no	6	12	18	24	24
Total of Correct Item	15	12	18	14	
Presentatse	0.60	0.50	0.75	0.58	

Based on the table above, the standard of difficulty index of test is “p” $\geq 0,30$ and $\leq 0,70$. It is pointed out that item difficulty in average of each item number.

In analyzing the validity and reliability of the test, the researcher used correlation product moment formula by dividing items into odd and even (split-half method), the formulations are as follows¹⁴;

$$r_{XY} = \frac{N\sum XY - (\sum X)(\sum Y)}{N\sum X^2 - \sum X^2 \quad N\sum Y^2 - \sum Y^2}$$

r_{XY} : Correlated Confession between X and Y

X : Odd Items (1,3,5,6,7,9,11,13,15,17,19,21,23)

Y : Even Items (2,4,6,8,10,12,14,16,18,20,22,24)

N : Respondents

It was calculated as follows:

$$r_{XY} = \frac{24(1021) - (167)(135)}{24(1279) - 167^2 \quad 24(899) - 135^2}$$

$$r_{XY} = \frac{24504 - 22545}{30696 - 27889 \quad 21576 - 18225}$$

$$r_{XY} = \frac{1959}{2807 \quad 3351}$$

$$r_{XY} = \frac{1959}{\sqrt{9406257}}$$

$$r_{XY} = \frac{1959}{3066,9621}$$

$$r_{XY} = 0.639$$

¹⁴ SuharsimiArikunto. *Dasar-DasarEvaluasiPendidikan*. Jakarta: BumiAksara, (2008). p. 70-93

2. The Reliability of the Test.

A reliable test is consistent and dependable.¹⁵ It means that the test has to get the similar result in two different occasions to same students or sample. In this research, the writer used Spearman-Brown formula to measure the reliability of all items in test as follows:¹⁶

The Formulation of Reliability:

$$r_{11} = \frac{2 r_{1/2 1/2}}{1 + r_{1/2 1/2}}$$

$r_{1/2 1/2}$: Correlation between the scores of the every items

r_{11} : Coefficients reliability

It was calculated as follows:

$$r_{11} = \frac{2 \times 0.639}{1 + 0.639}$$

$$r_{11} = \frac{1.278}{1.639}$$

$$r_{11} = 0.779$$

Based on the analysis of validity and reliability above, it can be seen that the r_{value} of validity was 0.639 and r_{value} of reliability was 0.779. According to Arikunto, the value of correlation coefficients as follow:¹⁷

¹⁵ H. Douglas Brown. *Language Assessment Principle and Classroom Practices*. New York: Logman. (2007).pp. 20

¹⁶ Suharsimi Arikunto. *Dasar-Dasar Evaluasi Pendidikan (edisi revisi)*. Jakarta: Bumi Aksara. (2008). pp. 93

¹⁷ *Ibid.* p. 75

Table. III.3
The value of correlation coefficients

Coefficient correlation	Category
0.800-1.00	Very high
0.600-0.800	High
0.400-06.00	Enough
0.200-0.400	Low
0.00-0.200	Very low (invalid)

In conclusion, validity of the test was included into highcategory while reliability of the test was categorized into high category too.