

CHAPTER III

RESEARCH METHOD

A. The Research Design

This study is quasi experimental research. Gay states that quasi experimental research is sometimes it is just not possible to randomly assign individual participants to groups¹. According to Jhon W. Cresswell quasi experimental research includes assignment, but not random assignment of participants to groups². The design of the research was *pre* and *post test* design, which used two classes as sample.

In conducting the research, the second grade students of State Junior High School Siak Hulu were participated. The students were administered by giving pre-test at the beginning in order to find out their abilities in reading comprehension. After that they were given the treatment in the middle. At the end, post-test was administered. In the research, the pre-test and post-test were compared in order to determine the effect of using Paired Summarizing Technique toward students' reading comprehension. According to Sukardi, the design of this research can be illustrated as follows³:

Table 1
The Research Design

Group	Pretest	Treatment	Posttest
Experiment	Y ₁	X	Y ₂
Control	Y ₁	-	Y ₂

¹L.R Gay, Peter Airasian. *Educational Research: Competence for Analysis and Application*. New Jersey: Prentice-Hall Pearson Education Upper Saddle River, 2006, p. 394

²Jhon W. Cresswell. *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. (New Jersey: Pearson Education, 2008), p. 313

³ Prof. Sukardi, Ph.D, *Methodologi Penelitian Pendidikan: Kompensasi dan Praktiknya* (Jakarta: Bumi Aksara, 2010), p. 186

Based on illustration above, treatment was only given to the experimental class.

While the control class did not receive any treatment.

1. Procedures of collecting data for experimental class

a. Pre-test

The pre-test was carried out to determine the students' comprehension with their score. The items used for pre-test consisted of 20 items. The test was about reading comprehension on descriptive text.

b. Treatment

The treatment was conducted for experimental class by using paired summarizing technique applied for about eight meetings.

c. Post-test

After conducting the treatment, the post-test was administered and analyzed as final data of this research. The post-test given was the same test as the pre-test.

2. Procedures of collecting data for control class

a. Pre-test

The control class was given pre-test to know students' reading comprehension. The test was the same as for experimental class.

b. No treatment

c. Post-test

Post-test was also given to control class and the result was analyzed and used as final data for this research.

B. The Location and the Time of the Research

This research was conducted at SMPN 1 Siak Hulu at Kubang Jaya street Number 128 Kampar Regency in 2012-2013 of Academic years. The research was done from September to October 2013.

C. The Subject and the Object of the Research

The subject of this research was the second grade students of SMPN 1 Siak Hulu. The object of this research was using paired summarizing technique toward reading comprehension on descriptive text.

D. The Population and the Sample of the Research

The population of this research was the second grade students of SMPN 1 Siak Hulu in 2012-2013 academic year, in which they were divided into nine classes. The number of students was 270 students.

Table 2
The Total Population of the First Year Students of SMPN 1 Siak Hulu
2012-2013

No.	Class	Total
1.	VIII A	30
2.	VIII B	30
3.	VIII C	30
4.	VIII D	30
5.	VIII E	30
6.	VIII F	30
7.	VIII G	30
8.	VIII H	30
9.	VIII I	30
	Total	270

In determining sample of this research, the writer used cluster sampling because the population was large. To decide which one the population that would be taken as sample, the sample was taken based on the population specified. The sample of the research was 60

students taken from class VIII D and VIII E. The specification of the research sample can be seen on the table below:

Table 3
The Total Sample of the First Year Students of SMPN 1 Siak Hulu
2012-2013

No	Group	Class	Number of students
1	Experiment class	VIII E	30
2	Control class	VIII D	30
Total			60 students

E. The Technique of Collecting Data

Collecting data is the most important step in conducting the research. In this research, the writer used a test as an instrument to collect data. The type of the test was a multiple choice test which consisted of 20 items. Every multiple choice item consisted of four answer options (a, b, c, and d). The test was used to find out the students' reading comprehension on descriptive text. The data of this research were the scores of the students' reading comprehension obtained by using reading test. The test was divided into two tests, the first was pre-test given before treatment and the second was post-test given after treatment which a intended to obtain students' reading comprehension at SMPN 1 Siak Hulu Kampar Regency .

Table 4
Blue Print of Reading Test

No	Indicator	Number
1	Identify main idea	2,6,11,17
2	Finding the specific information	3,9,14,18
3	Finding the meaning of unfamiliar vocabularies	4,10,12,20
4	Identify generic structure	1,8,15,19
5	Identify language features	5,7,13,16
Total		20

F. The Validity and Reliability of the Test

1. Validity

In general, validity refers to appropriateness of the given test or any of its component part as measure of what it is supposed to measure. It means the test will be valid to the extent that it is measured what it is supposed to measure. According to Gay⁴, validity is the appropriateness of the interpretations made from the tests score. Furthermore, Gay says that there are three kinds of validity. They are content validity, criterion-related validity, and construct validity. All of them have different use and function.

Content Validity is used to compare content of the test to the domain being measured. Gay also states that there is no formula used in this kind of validity and there is no way how to express it quantitatively.⁵ Content validity just focuses on how well the items represent the intended area. It means that the content of the curriculum of a course that must be mastered by the students becomes the standard in determining the validity. To determine the validity using such a validity is by referring to the material given to the students based on the curriculum.

⁴Gay, L.R and Peter Airasian, Op. Cit, p. 161

⁵ *Ibid.*, p. 164

Based on the explanation above, the writer used the content validity to measure whether the test was valid or not in this research. In other words, the tests given to the students were based on the material that they had learned.

To obtain the data about the contribution of paired summarizing technique toward students' reading comprehension, the writer acquired to show each score. It was used based on the most important characteristic of an item to be accurately determined by its difficulty. Then, the test given to students was considered not too difficult or not too easy. Item difficulty was determined as the proportion of correct responses. This was held pertinent to the index difficulty, in which it was generally expressed as the percentage of the students answering the questions correctly.

Before the tests were given to the sample, both of tests had been tried out to 29 students at the second grade. The purpose of try out was to obtain validity and reliability of the test.

The formula for item difficulty is as follows:

$$FV = \frac{R}{N}$$

Where FV : Index of difficulty or Facility value

R : The number of correct answers

N : The number of examinees or students taking the test

The formula above was used to find out the easy or difficulty of each item test that the writer gave to the respondents. The items that did not reach the standard level of

difficulty were excluded. Heaton⁶ stated that prepared in practice to accept items with facility between 0.30 and 0.70.

The standard level of difficulty is $<0, 30$ and $>0, 70$. It means that the item test 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”, it can be seen in the following tables:

Table 5
The Students are Able to Identify Main Idea

Indicator	Identify the communicative purpose				N
Item no.	2	6	11	17	30
Correct	14	20	20	11	
P	0.48	0.68	0.68	0.37	
Q	0.52	0.32	0.32	0.63	

Based on the table 5, the proportion of correct answer for item number **1** shows the proportion of correct **0.48**, item number **6** shows the proportion of correct **0.68**, item number **11** shows the proportion of correct **0.68**, item number **17** shows the proportion of correct **0.37**. Based on the standard level of difficulty “p” <0.30 and >0.70 , it is pointed out that item difficulties in average item numbers for identifying main idea are accepted.

Table 6
The Students are Able to Finding the Specific Information

Indicator	Finding the Spesific Information				N
Item no.	3	9	14	18	30
Correct	12	16	18	17	

⁶ Heaton, J.B. *Writing English Language Test*. New York. Logman Inc. 1988. P.178-179

P	0.41	0.55	0.62	0.58	
Q	0.59	0.45	0.38	0.42	

Based on the table 6, the proportion of correct answer for item number **2** shows the proportion of correct **0.41**, item number **9** shows the proportion of correct **0.55**, item number **14** shows the proportion of correct **0.62**, item number **18** show the proportion of correct **0.58**. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average item numbers for finding specific information are accepted.

Table 7
The Students are Able to Finding the Meaning of Unfamiliar Vocabularies

Indicator	Finding the Meaning of Unfamiliar Vocabularies				N
Item no.	4	10	12	20	30
Correct	20	17	20	20	
P	0.68	0.58	0.68	0.68	
Q	0.32	0.42	0.32	0.32	

Based on the table 7, the proportion of correct answer for item number **3** shows the proportion of correct **0.68**, item number **10** shows the proportion of correct **0.58**, item number **12** shows the proportion of correct **0.68**, item number **20** show the proportion of correct **0.68**. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average item numbers for finding the meaning of unfamiliar vocabularies are accepted.

Table 8
The Students are Able to Identify Generic Structure

Indicator	Finding the Meaning of Unfamiliar Vocabularies				N
Item no.	1	8	15	19	30

Correct	18	19	19	15	
P	0.62	0.65	0.65	0.51	
Q	0.38	0.35	0.35	0.49	

Based on the table 8, the proportion of correct answer for item number **4** shows the proportion of correct **0.62**, item number **8** shows the proportion of correct **0.65**, item number **15** shows the proportion of correct **0.65**, item number **19** show the proportion of correct **0.51**. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average item numbers for identifying generic structure are accepted.

Table 9
The Students are able to Identify Language Features

Indicator	Identify Language Features				N
Item no.	5	7	13	16	30
Correct	15	13	19	12	
P	0.51	0.37	0.65	0.41	
Q	0.49	0.63	0.35	0.59	

Based on the table 9, the proportion of correct answer for item number **5** shows the proportion of correct **0.51**, item number **7** shows the proportion of correct **0.37**, item number **13** shows the proportion of correct **0.65**, item number **16** shows the proportion of correct **0.41**. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average item numbers for identifying language features are accepted.

2. The Reliability

H. Douglas Brown⁷ states that reliability has to do with accuracy of measurement. This kind of accuracy was reflected in the obtaining of similar results when measurement was repeated on different occasions or with different instruments or by different persons. The characteristic of reliability was sometimes termed consistency. Meaning that, we can say the test was reliable when an examinee's results were consistent on repeated measurement. Heaton explains that reliability is of primary importance in the use of both public achievement and proficiency test and classroom test. There are some factors affecting the reliability of a test, they are as follows:

- a. They are extent of the sample of material selected for testing.
- b. The administration of the test is clear, this is an important factor in deciding reliability.

To obtain the reliability of the test, it must be known the Mean and Standard Deviation of test. Validity in general refers to appropriateness of a given test or any of its component parts as measure of what it was purposed to measure. It means the test is valid to the extent measured what it was supposed to measure.

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

1. **0.0 – 0.20** = Reliability is low
2. **0.21 – 0.40** = Reliability is sufficient
3. **0.41 – 0.70** = Reliability is high

⁷H. Douglas Brown, *Language Assessment: Principles and Classroom Practices*. (New York: Pearson Education Inc, 2003), p. 19-27

4. **0.71 – 1.0** = Reliability is very high⁸

To obtain the reliability of the test given, the researcher used the formula as follows⁹:

$$KR\ 20: r_i = \frac{k}{(k - 1)} \frac{S_{t^2 - \sum p_i q_i}}{S_{t^2}}$$

Where:

K : number of items on the instrument

Pi : proportion of subjects who answered the item correctly

Qi : proportion of subject who answered the item wrong (1-Pi)

$\sum p_i q_i$: the multiplication result between p and q

S_{t^2} : total variance

We must first calculate the total variance before:

$$S_{t^2} = \frac{\sum x^2}{n}$$

Where:

n : number of respondents

$$\begin{aligned} \sum x^2 &= \sum x^2 - \frac{(\sum x)^2}{n} \\ &= 4074 - \left(\frac{336}{29} \right)^2 \\ &= 4074 - \left(\frac{112896}{29} \right) \\ &= 4074 - 3892,97 \\ &= 181.03 \\ S_{t^2} &= \frac{\sum x^2}{n} \end{aligned}$$

⁸ J.B. Heaton, *Writing English Language Tests*. (New York: Cambridge University Press, 1988), p. 164

⁹ Sugiyono, *Statistic Untuk Pendidikan*, (Bandung: Alfabeta, 2007), p. 359

$$= \frac{181.03}{29}$$

$$= 6.24$$

$$ri = \frac{k}{(k-1)} \left\{ \frac{S_t^2 - \sum P_i q_i}{S_t^2} \right\}$$

$$ri = \frac{20}{(20-1)} \left\{ \frac{6.24 - 4.55}{6.24} \right\}$$

$$ri = \frac{20}{19} \left\{ \frac{1.69}{6.24} \right\}$$

$$ri = 1.05 \times 0.27$$

$$ri = 0.28$$

Based on the result above, it also can be stated that the reliability was **sufficient**.

G. Technique of Analyzing Data

To analyze the data to find out whether there is a significant effect of using paired summarizing technique toward reading comprehension, the writer established categories to classify the result of the test as main instruments of this research. Arikunto categorized levels of reading comprehension achievement into five categories level. They are as follows:

Table 10
The Classification of Students' Score

THE SCORE LEVEL	CATEGORY
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

After the scores were categorized, these scores were analyzed by using statistical analysis. The data were analyzed by using T-test (independent sample t-test), and it was calculated by using software SPSS 16.

The t-table was employed to see whether or not there was significant difference between the mean score in both experimental and control classes.

The following steps how to analyze data based on SPSS 16.0 for windows-statistical software are:

1. Open the students test file.
2. From the menu of SPSS, click *Analyze* and then click sub menu *Descriptive Statistics*, and click *Frequencies*.
3. From the menu click your variables, and press the narrow button.
4. From the analysis setting, click *Statistics* that will show *frequencies: statistics*, it consisted of four analysis group:
 - a. *Percentile Values*, click *Quartiles* and *Percentiles (s)*.
 - b. *Central Tendency*, click Mean, Mode, and Sum.
 - c. *Dispersion*, click Std. deviation, Variance, Range, Minimum, Maximum, and S.E. mean.
 - d. *Distribution*, click Skewness and Kurtosis, and then click continue.
5. From the *Format* analysis setting, at *Order by* menu click *Ascending Values*, at *Multiple Variables* click *Compare Variables*, and then click continue. (Hartono: 31-39).

The following steps how to get the result based on SPSS 16.0 for windows-statistical software are:

1. Open the students test file.
2. From the menu of SPSS, click *Analyze* and then click sub menu *Compare Means*, and click *Independent-Samples T Test*.
3. From the menu click your variables, and press the narrow button, and then click *ok* and then click *ok* to end this process and you will see the output data of SPSS automatically.