CHAPTER IV

RESEARCH FINDING AND DISCUSSION

This chapter presents three topics related to research finding that are the description of data, hypothesis testing and discussion.

A. The Description of Data

In this research, the researcher wants to know the effectiveness of PQ4R to students reading comprehension ability. The effectiveness can be seen from the significant different score of students reading comprehension ability before and after taught by using PQ4R strategy. The presentation of the data also answers research problems in chapter I. The research problem is: is there any significant different score before and after taught by using PQ4R strategy?

To describe the data, the researcher shows the score criteria of the test result, mean of test result, and percentage of the test from students. To know the student's reading achievement that is good or not, the researcher gives criteria as follows :

Table 4.1 The Score's Criteria

No.	Interval Class	Criteria
1.	80-100	Very Good
2.	70-79	Good
3.	60-69	Enough / Fair
4.	50-59	Poor
5.	0-49	Bad / Low

Based on the result of pre-test, the calculations are as follows:

a. Mean $= \dfrac{\Sigma(X)}{N}$

$\qquad = \dfrac{1125}{22}$

$\qquad = 51.14$

b. Median $\qquad = \dfrac{N+1}{2}$

$\qquad = \dfrac{23}{2}$

$\qquad = 11.5$

The median is the mean of the values of 11th and 12th items. That is

50.

c. Mode is the most existing score that is 40.

d. Standard deviation

$\qquad S \quad = \sqrt{\dfrac{Sxx}{N-1}}$

$\qquad Sxx \ = \sum x^2 - \dfrac{\Sigma(x)^2}{N}$

$$= 59775 - \frac{1265625}{22}$$

$$= 59775 - 57528.41$$

$$= 2246.59$$

$$S = \sqrt{\frac{2246.59}{21}}$$

$$= \sqrt{106.98}$$

$$= 10.343$$

From the calculation result of students score before taught using PQ4R strategy, the highest score achieved by students is 75 and the lowest one is 40. The range is 35, from the student's number (N) = 22. The number of class used is 6, and the class width (interval) used is 6. From the calculation result of statistics, the mean score (*X)* achieved by students is 51.14 in which mean is the average score taken from the total score of the whole students divided by the total students. It means that the mean is 51.14 and based on the score criteria it can be categorized as poor. The mode score is 40 in which mode score is taken from the most frequently occurring data. In this case the most occurring data is 40 so, the mode score is 40. The median score is 50 in which the median is the center score. The median can be taken by knowing the median position by using this formula $\left(\frac{n+1}{2}\right) th\ items$. The median of this data is the mean of the values of 11th and 12th items that is 50. The standard deviation is 10.343. The standard deviation is a short average of the differences of all scores from the mean (Brown in Isnawati, 2012: 64).

Based on the result of the post-test, the calculations are as follows:

a. Mean $= \dfrac{\Sigma(X)}{N}$

$= \dfrac{1390}{22}$

$= 63.18$

b. Median $= \dfrac{N+1}{2}$

$= \dfrac{23}{2}$

$= 11.5$

The median is the mean of the values of 11th and 12th items. That is 60.

c. Mode is the most existing score that is 60.

d. Standard deviation

$S = \sqrt{\dfrac{Sxx}{N-1}}$

$Sxx = \sum x^2 - \dfrac{\Sigma(x)^2}{N}$

$= 89750 - \dfrac{1932100}{22}$

$= 89750 - 87822.73$

$= 1927.27$

$S = \sqrt{\dfrac{1927.27}{21}}$

$= \sqrt{91.775}$

$= 9.58$

From the calculation result of students score before taught using PQ4R strategy, the highest score achieved by students is 85 and the lowest one is

50. The range is 35, from the student's number (N) = 22. The number of class used is 6, and the class width (interval) used is 6. From the calculation result of statistics, the mean score (X) achieved by students is 63.18 in which mean is the average score taken from the total score of the whole students divided by the total students. It means that the mean is 63.18 and based on the score criteria it can be categorized as enough. The mode score is 60 in which mode score is taken from the most frequently occurring data. In this case the most occurring data is 60 so, the mode score is 60. The median score is 60 in which the median is the center score. The median can be taken by knowing the median position by using this formula $\left(\frac{n+1}{2}\right) th\ items$. The median of this data is the mean of the values of 11th and 12th items that is 60, and the standard deviation is 9.58.

Table 4.2 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	51.14	22	10.343	2.205
	Posttest	63.18	22	9.580	2.042

The table clearly showed that means of the score improved from 51.14 to 63.18. It can be seen that students' score increased. Meanwhile the standard deviation of pre-test is 10.343 and in post-test 9.580. The standard error in pre-test is 2.205 and in post test is 2.042

After knowing the means, standard deviation and standard error then the researcher make the significance testing.

The steps to get the value of t-count are as follows:

a. The researcher found the average of the difference of the score. The formula is as follows:

$$Md = \frac{\Sigma d}{N} = \frac{265}{22} = 12.05$$

b. And then the researcher found the $\Sigma X^2{}_d$ by using formula:

$$\Sigma X^2{}_d = \Sigma d^2 - \frac{(\Sigma d)^2}{N}$$

$$= 5325 - \frac{(265)^2}{22}$$

$$= 5325 - \frac{70225}{22}$$

$$= 5325 - 3192.05$$

$$= 2132.96$$

c. After the researcher got the result of the $\Sigma X^2{}_d$, the researcher can start to find the value of "t".

The formulation as follow:

$$t = \frac{Md}{\sqrt{\frac{\Sigma X^2{}_d}{N(N-1)}}}$$

$$= \frac{12.05}{\sqrt{\frac{2132.96}{22\,(22-1)}}}$$

$$= \frac{12.05}{\sqrt{\frac{2132.96}{462}}}$$

$$= \frac{12.05}{\sqrt{4.617}}$$

$$= \frac{12.05}{2.15}$$

$$= 5.605$$

So, the t- count = 5.605

And the t-count got from SPSS is as follows:

Table 4.3 Paired Samples Test

| | | Paired Differences | | | | | | |
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1 pretest – posttest	-1.205E1	10.078	2.149	-16.514	-7.577	-5.606	21	.000

d. Finally, to know the degree of freedom, it is found the result from the
   formula below:

df   = N – 1

       = 22-1

       = 21

So, the df = 21

From the calculation using SPSS above, it can be seen that the mean is -1.205, the standard deviation is 10.078, standard error mean is 2.149, 95% confidence interval of the difference lower is -16.514 and upper is -7.577, the t-count is -5.606, while df is 21 and the significance (2-tailed) is

0.000. After that, the researcher tried to find the significance value using SPSS 16.00.

The significance value is gotten from SPSS 16.00 that is as follows:

Table 4.4 Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pretest & posttest	22	.490	.020

From the calculation of SPSS above, it can be seen that the correlation is 0.490 and the significance value is 0.020. Since the significance value is 0.020 and it is less than 0.050 so, it can be said that there is significant different score of students reading comprehension ability before and after taught by using PQ4R strategy.

B. Hypothesis Testing

Hypothesis testing is purposed to test the hypothesis of the research. It is to test whether or not the null hypothesis (Ho) is rejected. The null hypothesis of this research is that there is no significant different score of students reading comprehension ability before and after taught by using preview, question, read, reflect, recite, review (PQ4R) strategy. The hypothesis was tested by using t-test.

T-test can test whether or not the null hypothesis is rejected by comparing the result of the pre-test and post-test. The result of the calculation of t-test showed 5.606. To determine whether or not the t-value could reject the null hypothesis at $p \leq 0.05$ with *df* 21, the t-table was used. To reject the null hypothesis at $p \leq 0.05$, the t-value had to be bigger than the t-table, 2.080. From the elaboration above, it could be concluded that the null hypothesis was rejected. It means that PQ4R strategy is effective to be used in teaching reading comprehension.

The testing above has been explained that the null hypothesis was rejected at $p \leq 0.05$. It means that the level of certainty for rejecting the null hypothesis is 95%. So, the researcher was 95% sure to conclude that PQ4R strategy truly influenced the student's reading comprehension.

C. Discussion

As stated on research method in chapter III, in this research the researcher conducted research in the class that is trough teaching and learning process. The teaching and learning process in this case was divided into three steps. First step was preliminary study in which the researcher measures students' achievement in reading comprehension before taught using PQ4R strategy. The preliminary study was conducted by administering test called pre-test.

The second step was giving treatment to the student. The treatment was conducted in the classroom by applying PQ4R strategy to teach recount text. The first treatment was carried out on Saturday in the sixth and seventh

period. At first the researcher explained the material and the rule of PQ4R strategy. After that the students acted their part. It seemed that the students at the back row did not understand the rule of PQ4R since they were busy with themselves when the researcher explained to them. Therefore, they missed some activities especially preview and question. They did not do both activities of preview and question, instead, they directly read throughout the passage. After reading they worked with their passage and looked confused of what to do. Therefore the researcher led them in making some questions. Even though some students were still passive and noisy, overall the teaching learning and learning process could run well. In the end of the treatment, the researcher administered whilst test as the evaluation. It showed that they got better score than in the pre-test it means that students reading comprehension ability was getting better.

The second treatment was carried out on Wednesday in the fifth and sixth period. At first, at this meeting the environment was not conducive for studying since the period was the changes from resting time, so some of the students still out of the class and late for coming the class. Even though they were late for coming in the class but they could study. They looked like understand the material and what PQ4R strategy is well so, they could study as the steps of PQ4R strategy well. In the end of the lesson, they could make summary of the passage better than the first meeting.

The third treatment was carried out on Saturday in the sixth and seventh period. At this meeting the environment was not conducive for studying since it was the day for preparing the midterm test in which most of the classes

were dismissed. Most of the students seemed to be unmotivated for studying. They could not concentrate since it was very noisy outside the classroom. As a result, the teaching learning process was not really effective and the researcher dominated the class.

The third step was administering post-test. It was given to know the students' score after being taught by using PQ4R strategy. The researcher wanted to know how far the students comprehend the text after the treatment. The analysis of the post-test result also proved that the students' score was better than in the pre-test which means that their reading comprehension improved.

After the data collected, the data analyzed by using SPSS 16.0. It is showed from the mean of total score in pre-test from 22 students is 51.14 which mean it is poor. Besides, the mean of total score from 22 students is 63.18 which mean it is enough. From the data, it can be seen that the students reading comprehension ability on post test is much better than pre test. It means that the students' reading comprehension ability had increased after getting treatment.

The data paired sample t-test also shows that the value of t-count is 5.606 and the significance value is 0.020. The value of t-table at significant level 5% with df = 21 is 2.080. It means that the null hypothesis (Ho) is rejected and alternative hypothesis (Ha) is accepted that t-count is higher than t-table (5.606 > 2.080) and significant level is lower than 0.05 (0.020 < 0.05). It shows that there is significant difference score of the students' reading comprehension ability before and after taught using PQ4R strategy. It can be

said that teaching using PQ4R strategy is effective to use in teaching reading comprehension and suggested to be used.

Based on the research finding, by using PQ4R strategy in teaching reading comprehension ability shows the real effectiveness, because it can help the students to increase their reading comprehension. PQ4R strategy gives students opportunity to be active in reading lesson.

The researcher reminded again about the previous study written by Irwan Hartanto. He used classroom action research as the research design. The classroom action research is consists of two cycles. The result of the score shows that there is improvement of the mean of students' score between first cycle and second cycle. The mean of the score of first cycle is 65 while the mean of the score of the second cycle is 80.5. It means that the second cycle score is higher than the first cycle score so, he concluded that PQ4R strategy can improve students' comprehension and students' achievement. Meanwhile, on this research the researcher used pre-experimental research. Pre-experimental research used one group pre-test and post-test. The researcher conducted three times treatments. The instrument that used is test, such as pre-test and post-test. The result of pre-test and post-test is different. The mean of the pre-test score is 51.14 while the mean of the post-test score is 63.18. So, the researcher concluded that PQ4R strategy can improve students' comprehension in reading comprehension.

Based on the description above, the researcher agree with the result of the previous study because teaching reading comprehension using PQ4R strategy can make students easier to understand and comprehend the content

of the text. By using PQ4R strategy, the students more active in reading comprehension and also improve their achievement.

Regarding on the result of data analysis above, it is strongly related to some advantages served by the use of PQ4R itself as a strategy in teaching reading. The advantage of PQ4R in teaching reading is strengthened by the statement stated by Sudarman (2009: 69-70) that PQ4R strategy used to help students to remember what they have read. Besides, according to Ali in (http://www.scribd.com/doc/54424547/Model-Pembelajaran-PQ4R) the advantages of PQ4R strategy are (1) appropriate to use for teaching declarative knowledge, the concepts, definitions, and application knowledge in daily life, (2) can help students who are weak in remembering the concepts of the lesson, (3) easy to be applied in all age of students, (4) can help the students in improving their asking ability and expressing their knowledge, (5) can reach a wide-ranging subjects.

The result of the research was stating that applying PQ4R strategy in teaching learning is effective enough. It was proved by the significant difference score of students' reading comprehension ability between before and after taught by using PQ4R strategy. So, it meant that the result of this research was verified the theory by Trianto, 2007: 146 in Ahmad and Damayanti, 2013 which stating that PQ4R strategy is a strategy that can be applied to help students in remembering what they have read and able to help teaching learning process in the class that is held by reading text or reading book.

All in all, the advantages above imply that the use of PQ4R strategy in reading gives positive effect to students' reading comprehension ability. It has been verified by the result of data analysis that there is significant difference between students' reading comprehension ability before and after taught by using PQ4R strategy. Thus, it can be concluded that the use of PQ4R strategy is effective to reading comprehension ability of the eighth grade students of SMPN 2 Bakung.