

CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

This chapter, the researcher presents the description of data which includes analysis of data, hypothesis testing which also discusses about finding of this research. The next is discussion which discuss the finding.

A. The Description of Data

The researcher wants to know the effectiveness of using SQ4R (Survey, Question, Read, Recite, Reflect and Review) on students' reading comprehension ability. That is why the researcher gave pre-test and post-test to the control group and the experimental group in X TKRO 1 X TKRO 3 (Teknik Kendaraan Ringan Otomotif) or vehicle engineering. The tests used for either pre-test or post-test were different in the questions, but the indicators tested was same. In this research, the control group was X TKRO 3 which consists of 34 students and the experimental group was X TKRO 1 which consists of 35 students. The total sample was 69 students.

The researcher administered tests before and after teaching by using SQ4R. After that, in finding the result score of each students, the research used the following formula:

$$Score = \frac{\text{total correct score}}{\text{total number of question}} \times 100$$

There were three steps done by the researcher to know the significant different of the students who used SQ4R in reading comprehension. First step was giving pre-test to the experimental group and the control group in order to know students' reading comprehension before using SQ4R.

Second step was implementing treatments. In this study, SQ4R was only implemented to the experimental group or X TKRO 1. During the first time of treatment, the researcher attempted to explain the SQ4R to the students and guided them in using the method. Furthermore, in the second time of treatment, students implemented the method independently. The researcher used six steps of SQ4R, and chose group discussion to adapt K13 (Kurikulum 2013) or curriculum 2013. Each group consists of 4 students which used six steps in reading activity. The steps were started by skimming over the title or heading, main ideas, and examining the picture of descriptive text. Then, students composed the questions in order to make them understand deeply before going through reading activity. After that, students read a whole text to find the answer from their questions. Next step was continued by answering the questions. In this step, students could reread to check their answer missed. Then, they could continue to the next step. The step forced to do self-reference and critical thinking. And the last step was called review. The activity were students reread their questions and answers that they had made in the previous steps. Besides, the activity was added by quiz in the second time of treatments. Meanwhile, SQ4R was not implemented in the control group or X TKRO 3. It was conducted by the classroom teacher based on the teachers' guide book, and his lesson plan without using SQ4R.

The last step of this research was administering post-test to the experimental group and the control group. The test was aimed to measure the score of students' reading comprehension after treatments. After finding the result score of pre-test and post-test, the researcher found the highest scores, lowest scores, the average scores or the means, the medians, the modes and the standard deviations of the experimental group and the control group by using SPSS 16.0. The detail information would be explained as follows:

1. The Description of Data of pre-test in the experimental group and the control group

The experimental group was a class taught by using SQ4R. The researcher gave treatments to the experimental group. Pre-test held before the treatments was in the form of multiple choice which consist of 20 questions. The test that should be done by students for 45 minutes was administered in the experimental group and the control group.

Base on the result of pre-test, the scores of students were in the table.

Table 4.1 The scores of Pre-test in the experimental group

No	Name	Pretest
1	AZ	60
2	AF	45
3	AND	45
4	AF	50
5	AFNY	60
6	AM	60
7	ANE	50
8	ANA	60
9	ASP	65
10	AS	70
11	AI	70
12	AK	70
13	ASO	65
14	AA	80
15	AM	75
16	ATDA	65
17	ARC	55
18	AF	55
19	AWP	55
20	ASN	50
21	ADI	65
22	ACS	50
23	ANN	65
24	ACA	65
25	ABP	65
26	AF	65
27	ARP	80
28	AM	65
29	ABNS	55
30	AAH	50
31	AK	70
32	BIP	40
33	BWS	55
34	BHF	50
35	BAH	85
Total score		2130

Table 4.2 The scores of Pre-test in the control group

No	Name	Pre-test
1	IYS	65
2	IGTM	50
3	IKP	70
4	IG	45
5	ISA	60
6	IJK	55
7	JFA	55
8	KA	60
9	KB	40
10	LSJ	50
11	LH	75
12	LK	50
13	LHQ	70
14	MMR	45
15	MZAS	55
16	MDP	70
17	MTG	45
18	MFV	50
19	MAA	45
20	MADAS	40
21	MFKN	60
22	MFS	55
23	MFN	45
24	MFAS	80
25	MBB	65
26	MBN	65
27	MCM	60
28	MIN	55
29	MILJ	40
30	MRNM	60
31	MVPW	55
32	MZA	55
33	MZAM	55
34	NA	80
Total score		1925

Table 4.3 Description statistic of the data in the experimental group

VAR00001

N	Valid	35
	Missing	0
Mean		60,86
Median		60,00
Mode		65
Std. Deviation		10,606
Range		45
Minimum		40
Maximum		85
Sum		2130

The name of the students had been mentioned by initial name to keep the privacy of the students. According to the table 4.1, the total score was 2130. The highest score of 35 students in pre-test was 85, the lowest score was 40. Therefore, the researcher used SPSS 16.0 to calculate mean, median, mode, and standard deviation. The result showed that the mean was 60,86; the mode was 65; the median was 60; and the standard deviation was 10,606.

Table 4.5 Description statistic of the data in the control group
VAR00001

N	Valid	34
	Missing	0
Mean		56,62
Median		55,00
Mode		55
Std. Deviation		10,921
Range		40
Minimum		40
Maximum		80
Sum		1925

Meanwhile, the control group is the class which was not taught by using SQ4R. Pre-test was also administered in this group with the same test just liked the experimental group. Pre-test was in the form of multiple choice and consist of 20 questions. The time duration of the test was 45 minutes.

From the data of pre-test, the highest score of the control group was 80 and the lowest score was 40. The total score from 34 students in the control group was 1925. Therefore, the researcher used SPSS 16.0 to calculate the mean, the median, the mode, and the standard deviation. The calculating result showed that the mean was 56,62; the median was 55; the mode was 55; and the standard deviation was 10,921.

The comparison statistic score between the experimental group and the control group can be seen in the table 4.6.

Table 4.6 The comparison statistic in pre-test

Group	Highest score	Lowest score	Mean	Median	Mode	sd
Experimental group	85	40	60,86	60	65	10,606
Control group	80	40	56,62	55	55	10,921

2. The score of post-test in the experimental group and the control group

The post-test was given after treatments. The treatments by using SQ4R was only implemented in the experimental group or X TKRO 1. Meanwhile, in the control group or X TKRO 3 was taught based on the teachers' lesson plan without using SQ4R. The scores can be seen in the tables as follows:

Table 4.7 The scores of post-test in the experimental group

No	Name	Post-test
1	AZ	70
2	AF	55
3	AND	60
4	AF	55
5	AFNY	70
6	AM	70
7	ANE	80
8	ANA	70
9	ASP	80
10	AS	85
11	AI	85
12	AK	85
13	ASO	70
14	AA	90
15	AM	80
16	ATDA	80
17	ARC	80
18	AF	85
19	AWP	80
20	ASN	70
21	ADI	75
22	ACS	75
23	ANN	75
24	ACA	75
25	ABP	75
26	AF	75
27	ARP	90
28	AM	80
29	ABNS	65
30	AAH	75
31	AK	80
32	BIP	55
33	BWS	65
34	BHF	65
35	BAH	95
Total score		2620

Table 4.8 The scores of post-test in the control group

No	Name	Post-test
1	IYS	65
2	IGTM	75
3	IKP	90
4	IG	50
5	ISA	75
6	IJK	55
7	JFA	75
8	KA	85
9	KB	55
10	LSJ	50
11	LH	75
12	LK	55
13	LHQ	85
14	MMR	55
15	MZAS	60
16	MDP	75
17	MTG	30
18	MFV	55
19	MAA	45
20	MADAS	60
21	MFKN	65
22	MFS	55
23	MFN	50
24	MFAS	80
25	MBB	60
26	MBN	65
27	MCM	60
28	MIN	60
29	MILJ	75
30	MRNM	90
31	MVPW	50
32	MZA	50
33	MZAM	65
34	NA	95
Total score		2190

Table 4.9 Description statistic of the data in the experimental group

VAR00002

N	Valid	35
	Missing	0
Mean		74,86
Median		75,00
Mode		80
Std. Deviation		9,888
Range		40
Minimum		55
Maximum		95
Sum		2620

According to table 4.7, the total score of post-test in the experimental group was 2620. Only a student got the highest score or maximum score, it was 95. Two students got the lowest score, it was 55. Therefore, the researcher used SPSS 16.0 to calculate the mean, the median, the mode and the standard deviation. The result of SPSS showed that the students' mean was 74,86; the median was 75,00; the mode was 80; and the standard deviation was 9,888.

Table 4.10 Description statistic of the data in the control group

VAR00002		
N	Valid	34
	Missing	0
Mean		64,41
Median		60,00
Mode		55 ^a
Std. Deviation		14,810
Range		65
Minimum		30
Maximum		95
Sum		2190

Based on the table 4.8, the highest score of 34 students in the control group was 95 and the lowest score is 30. Besides, the result of SPSS 16.0 presented whether the score average of the control group or the mean was 64,41; meanwhile the median was 60,00. The mode of students' post-test was 55, and the standard deviation was 14,810.

The summary of the result including the highest score, the lowest score, the mean, the median, the mode and the standard deviation in the experimental group and the control group can be seen in the table below:

Table 4.11 The comparison statistic in post-test

Group	Highest score	Lowest score	Mean	Median	Mode	sd
Experimental group	95	55	74,86	75,00	80	9,888
Control group	95	30	64,41	60,00	55	14,810

Table 4.12 Students' pre-test and post-test in the experimental group

No	Name	Experimental group		Gain
		Pre-test	post-test	
1	AZ	60	70	10
2	AF	45	55	10
3	AND	45	60	15
I 4	AF	50	55	5
5	AFNY	60	70	10
6	AM	60	70	10
7	ANE	50	80	30
8	ANA	60	70	10
9	ASP	65	80	15
10	AS	70	85	15
11	AI	70	85	15
12	AK	70	85	15
13	ASO	65	70	5
14	AA	80	90	10
15	AM	75	80	5
16	ATDA	65	80	15
17	ARC	55	80	25
I 18	AF	55	85	30
19	AWP	55	80	25
20	ASN	50	70	20
21	ADI	65	75	10
22	ACS	50	75	25
23	ANN	65	75	10
24	ACA	65	75	10
25	ABP	65	75	10
26	AF	65	75	10
27	ARP	80	90	10
28	AM	65	80	15
29	ABNS	55	65	10
30	AAH	50	75	25
31	AK	70	80	10
32	BIP	40	55	5
33	BWS	55	65	10
34	BHF	50	65	15
35	BAH	85	95	10
Total score		= 2130	= 2620	= 480
Mean		60,86	74,86	13,71

Based on the explanation of the result score pre-test and post-test, the researcher found the gain score between pre-test and post-test. In the experimental group on table 4.12, the total score of pre-test was 2130. Furthermore, the total score of post-test was 2620. So, the gain was 480. All of the students' post-test was increase, it automatically changed the mean. The mean of students' pre-test was 60,86. Meanwhile, students had an improvement score in post-test, it was increase to be 74,86. According to those mean, the students' score was improved.

Table 4.13 Chart pre-test-post-test in the experimental group

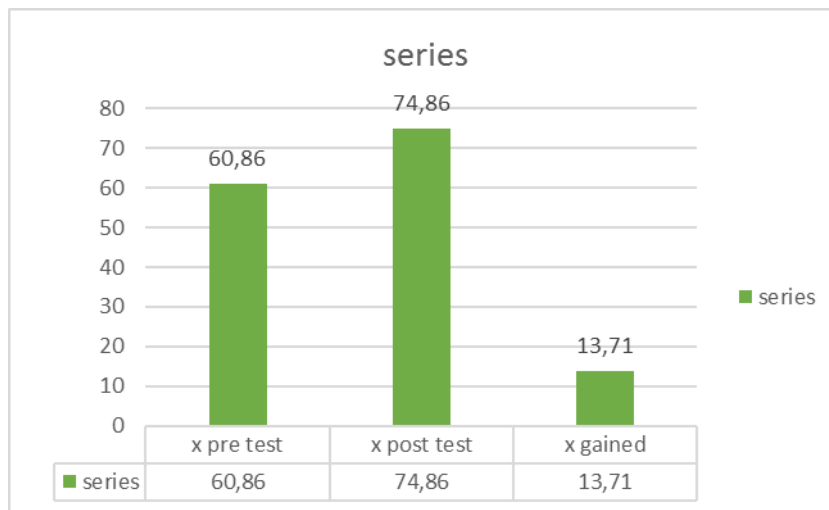
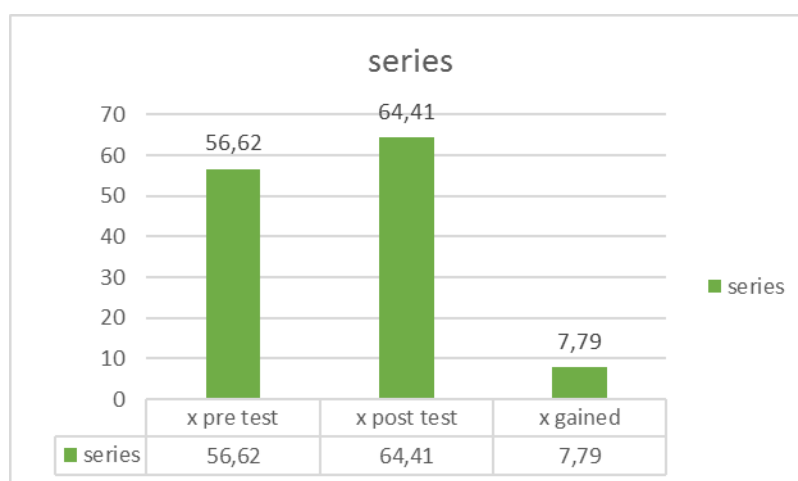


Table 4.14 Students' pre-test and post-test in the control group

No	Name	Control group		Gain
		pre-test	post-test	
1	IYS	65	65	0
2	IGTM	50	75	25
3	IKP	70	90	20
4	IG	45	50	5
5	ISA	60	75	15
6	IJK	55	55	0
7	JFA	55	75	20
8	KA	60	85	25
9	KB	40	55	5
10	LSJ	50	50	0
11	LH	75	75	25
12	LK	50	55	5
13	LHQ	70	85	15
14	MMR	45	55	10
15	MZAS	55	60	5
16	MDP	70	75	5
17	MTG	45	30	-15
18	MFV	50	55	5
19	MAA	45	45	0
20	MADAS	40	60	20
21	MFKN	60	65	5
22	MFS	55	55	0
23	MFN	45	50	5
24	MFAS	80	80	0
25	MBB	65	60	-5
26	MBN	65	65	0
27	MCM	60	60	0
28	MIN	55	60	5
29	MILJ	40	75	35
30	MRNM	60	90	15
31	MVPW	55	50	-5
32	MZA	55	50	-5
33	MZAM	55	65	10
34	NA	80	95	15
Total score		= 1925	= 2190	= 265
Mean		56,62	64,41	7,79

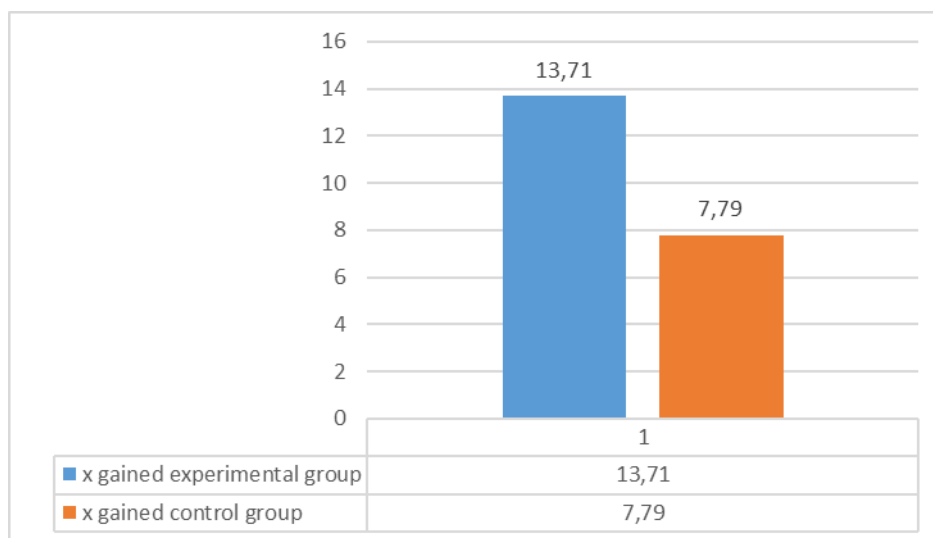
Based on table 4.14, In the control group, the total score of pre-test was 1925. Besides, the total score of post-test was 2190. So, the gain was 265. Majority students' score was increase but several students were consistent in their pre-test score and post-test score. Moreover, there were four students who were decrease in their score. In the result of the mean, mean in the pre-test was 56,62 and the mean in the post-test was 64,41. Meanwhile, the gain of the mean was 7,79.

Table 4.15 Chart pretest-posttest in the control group



From the result above, it can be seen that the mean of the control group which was 7,79 was smaller than the mean of the experimental group, 13,71. That was why the improvement of each student in reading comprehension was various but there was not drastically improved. In other word, SQ4R can be used as an alternative method for reading comprehension. The chart was shown as below:

Table 4.16 Chart the result of mean gained between the experimental group and the control group



B. Hypothesis Testing

In this research, hypothesis testing used to answer research problem. It is aimed to prove whether there is any significant difference score between students taught using SQ4R and those who are not taught using SQ4R. The hypothesis is stated below:

- a. When statistical value is less than critical value, the alternative hypothesis (H_a) is accepted and null hypothesis (H_0) is rejected or there is significance different score from students taught by using SQ4R and those who are not taught using SQ4R
- b. When statistical value is bigger than critical value, the alternative hypothesis (H_a) is rejected and null hypothesis (H_0) is accepted or there

is no significance different score students taught by using SQ4R and those who are not taught using SQ4R.

Data was analyzed by using z test. The requirements of using z test were the sample were independent, data were normally distributed, the population standard deviation was known and the samples must be bigger than or equal to 30. In this research, the sample of experimental group and the control group were 35 and 34. Those were bigger than 30. That was why, z test was chosen.

The summary of data were as follows:

Reading comprehension with SQ4R (experimental group) :	Reading comprehension without SQ4R (control group):
$X_1 = 74,86$	$X_2 = 64,41$
$S_1 = 9,888$	$S_2 = 14,810$
$N_1 = 35$ students	$N_2 = 34$ students

According to the calculation of z test, the research was involved by two groups which were occupied by 35 students from the experimental group and 34 students from the control group. The mean of the experimental group was 74,86 with the standard deviation was 9,888. Furthermore, the mean of the control group was 64,41 and the standard deviation was 14,810. The value of alpha was 0,05 which the critical value of z table in two tailed test was 1,96. The result from z test calculation was 3,4375 (see appendix 8).

Then, the researcher gave the interpretation based on the result by using the significant level 0,05; statistical value was bigger than critical value ($3,4375 > 1,96$) . In other words, the null hypothesis (H_0) can be rejected and the alternative hypothesis (H_a) is accepted. On the basis of the statistical calculation, it can be

stated that there was different score from the students taught by using SQ4R and those who were not taught by using SQ4R. This result determines that SQ4R ensure the students' reading comprehension ability or SQ4R was effective for improving students' reading comprehension ability.

C. Discussion

The researcher conducted the research to know the effectiveness of using SQ4R on students' reading comprehension ability which was implemented in tenth grade of Vocation school (SMKN 1 Bandung) period 2017/2018 on TKRO program or vehicle engineering program. Then, the researcher took the sample from two classes which were to be the experimental group and the control group. The total sample was 69 students. There were three steps in conducting research. They were pre-test, treatments and post-test.

Before implementing treatments, the researcher gave pre-test to the experimental group (35 students) and the control group (34 students) in which measuring students' reading ability on descriptive text during 45 minutes. The test was had been checked the validity and the reliability. It consisted of 20 questions. From the result of pre-test, the mean of the experimental group was 60,86 and the mean of the control group was 56,62.

After that, the treatments by using SQ4R method was implemented to the experimental group for twice. Meanwhile, SQ4R was not implemented in the control group. It was conducted by the classroom teacher based on the teachers' guide book, and his lesson plan without using SQ4R. In the experimental group,

the researcher used six steps (Survey, Question, Read, Recite, Reflect, and Review). The effectiveness of SQ4R has been proven by the previous researchers. Bazar and Gurbuz (2017) support the notion that this method can develop students' cognitive by concentration and reading comprehension in order to improve students' skill in critical thinking. SQ4R method offers the students to do summarizing, comparing, analyzing and synthesizing during the reading activity. Coon and Mitterer (2013) assert reflective process on this method can enhance students to do self-reference and critical thinking such as doing summarize, compare, analyze, critique and synthesize.

During the reading activity of using SQ4R, the students found the ease to fulfill the target of indicators based on K13 or curriculum 2013. Each step of SQ4R helped students to learn the material, in case was descriptive text. Coon and Mitterer (2013) add that in the step of survey students' activity is skimming. In this activity, students could find several components, such as the tenses used or verb used, adjectives, adverbs including setting of time and place, main idea and also generic structure of the text. Although, students were uncertain with the information that they learn, this step was very useful for students in the next step called question. When doing skimming, it helped students to make questions. The researcher found that this step helped students in fulfill several indicators that the researcher made in the lesson plan, such as indicator 1, indicator 2, indicator 6, indicator 7, indicator 8 and indicator 9 then it was completed to the next steps.

Brown (1992) states that this step as self-questioning. Students made questions with their own group. According to this research, in the first time of

treatment, there were several groups that found difficulty in making questions. That was why the teacher gave more explanation and example of question in this step. For the second day of treatment, each groups could make their own questions.

Hence, the students found out the answers in the following step called read. From this step, students can enactive their doubtfulness about the information that they earn from the previous step. Additionally, students can found the main idea and generic structure from the text because they read whole of the text. According to this research, this step helped students to predict the meaning of the text. Teacher guided students, if they found the difficult words, they would predict the meaning without looking for in the dictionary. Additionally, students could find the generic structure of the text, the main idea, the purpose of the text, and the detail information such as setting of time or place if it possible during reading activity. That was why, this step helped students to fulfill several indicators such, as, indicator 5, indicator 6, indicator 7, indicator 8, indicator 9 and indicator 10.

After reading the text, students continued to the next step called recite. Students answered the questions that they had made. So, all the questions should be answered. In other words, this step was the important because whether the students can comprehend the text or not was based on their answers in this step. In this step students did two activities including answering the questions and making summarization the text. In addition, Coon and Mitterer (2013) argue that the students should do summarizing by their own words. Therefore, by summarizing,

students literally can fulfill several indicators such as finding synonym or even antonym. This step of recite was actually helping them to complete the detail information which was useful to improve students' reading comprehension. Based on this research, this step was the difficult one to the students. Most of students found the difficulty in constructing their summarization by their own words. Hence, they sometimes did not know to choose appropriate word choices. That was why, the teacher helped them by asking questions related from the text or allowing them to open their dictionary in the first time of treatment. The theory from Snow (2002) which says about the process of constructing meaning in written language or better known as reading comprehension requires good method to achieve. SQ4R offers what students need to achieve in reading comprehension.

Students represent their knowledge by using the step called reflect of SQ4R method. Students easily memorized the answers. In addition, Richards and Reynanda (2002) assert about good impact of reading which is the process of reading can increase the knowledge of reader. SQ4R gave chance to the students to improve their knowledge by doing the step of recite. In the first of meeting, students were confused about the researcher's instruction that asking to make relation between their note or answers and their available knowledge. Then, the researcher gave the example. For example, the question was about the location of Tanjung Puting National Park, students' answer was the southwest of Central Kalimantan. From the answer, teacher asked students to relate the answer and their own knowledge. One of student answered that he had uncle from Central Kalimantan. So, the relation was the southwest of Central Kalimantan and his

uncle. That was why, if there was question asking about the location of Tanjung Puting national park, the student remembered his uncle which was in central of Kalimantan. Indirectly, the student would easily remember the answers. After the researcher explained the example, the students finally understood that the purpose of making relation in this step was actually helped students to memorize their answers or their summarization easily which would help them in the last step called review.

In the end, students did the last step called review. Students do either reread the text or memorizing new knowledge from the first step until the last step. From this step, the purpose of reading can be seen clearly. Nuttal (2003) adds about the purpose of reading should be known. SQ4R showed the purpose of reading while offering students the opportunity to do steps, such as survey, question, read, recite, reflect and review which provide a beneficial means for improving students' reading comprehension ability. In the first time of treatment, the representative of each group read the questions, the answers and group's summarization. Meanwhile, the other students listened. In the second of treatment, the representative of each group read the questions, the answers and group's summarization and it was added by quiz. The researcher gave several questions. Then, the students answered the questions individually.

During the treatments, the researcher concluded that SQ4R method needed longer time at first. The teacher should explained the ways or the steps clearly to avoid miss understanding and miss concept among students. Unfortunately, the time schedule of teaching and learning in vocation school is much longer. It is 135

minutes, even though is only once a week. That is why, the researcher can optimize the concept of SQ4R method in the first meeting clearly. Then, the students can use SQ4R method in the second meeting individually without the teacher's guide.

After the treatment was done, the researcher gave post-test with the same number of questions and time duration like in pre-test to the experimental group and the control group. From post-test, the researcher found the mean of the students of the experimental group was 74,86 and the mean of the students of the control group was 64,41. Therefore, the gain between the mean of pre-test and post-test in the experimental group was 13,71. It was bigger than the gain of means in the control group, that was 7,79. That was why the improvement of each students' in reading comprehension in the experimental group was drastically improved.

Then, data was analyzed by using z-test. Based on the calculation, it was found that the result was 3,4375. The value of alpha was 0,05 which the critical value of z table in two tailed test was +1,96 and -1,96. Then, the researcher gave the interpretation based on the result by using the significant level 0,05; the statistical value was bigger than critical value ($3,4375 > 1,96$). In other words, it can be stated that there was different score from the one of those who do not use SQ4R and SQ4R ensure the students' reading comprehension ability or SQ4R was effective for improving students' reading comprehension ability. Student who using SQ4R was effective. It was proved from the different the gain result of mean in the experimental group and the control group after treatments.

According to research carried out by Basar & Gurbuz (2017), in titled “Effect of the SQ4R Technique on the Reading Comprehension of Elementary School 4th Grade Elementary School Students” showed that SQ4R significantly improved on reading comprehension. According to result performed by Kasyulita (2015) entitled “The Effect of SQ4R Technique towards Reading Comprehension at 2nd Years English Students in University of Pasir Pangaraian” determined a significant difference before and after taught by using SQ4R. Ni L. A Suardani¹, Kt. Ardana, and Kt. Adnyana Putra (2012) also proved that SQ4R was effective to use in reading. Those study had result to support this research’s finding.

From the result above, it can be concluded that tenth grade of TKRO program in vacation school (SMKN 1 Bandung) got positive and significant impact of using SQ4R in reading comprehension ability. This results have proven the theory from Brown (1992) stated that SQ4R encourage active reading because students seek information from a text by asking questions, answering the question using their own words. Then, using SQ4R is alternative method that can be applied in teaching reading or learning English. Students can get the advantage of the process of SQ4R although it seems time consuming at first. But in several cases, the process of SQ4R will need short time if students do as a habit.