

CHAPTER IV

RESULTS AND DISCUSSION

This chapter presents the data findings of the research, covering description of data, hypothesis testing, and discussion.

A. Description of Research Results

As mentioned previously, the researcher wanted to know whether there was different score between the students before and after applied by using QAR. In this research, the researcher did a pre-experimental research about the effectiveness of using QAR Strategy on students' reading comprehension in the eleventh grade of students class Science II at SMA Darul Hijrah Putera in academic year 2017/2018. The researcher involved a class consisted 30 students. The data were collected through administering test. The first test was pre-test done before the treatment applied to the students. The purpose was to know the students' reading achievement before being the treatment. The result of pre-test showed that their reading comprehension was poor.

After administering the pre-test, the researcher gave treatment to the students by using QAR Strategy. During the treatment, the students enjoyed learning and they were enthusiastic in QAR Strategy. When treatment was finished, the researcher administered posttest to know the students' ability of reading comprehension after being taught by using QAR Strategy. Apparently, the result of the post-test showed that the students' reading comprehension improved significantly.

1. Students' Reading Comprehension Achievement Before Using by QAR Strategy

The numbers of students who took the Pre-test were 30 students. The highest score in pre-test was 90 and the lowest score was 20. This test was intended to know the students' reading comprehension achievement before students got treatment. The student's reading comprehension achievement in pretest was presented in table 4.1:

Table 4.1 The Students' Achievement Before Using QAR Strategy (Pre-Test)

Student (N)	Score of Pretest
AAF	80
AAH	60
AE	50
AF	60
AH	40
AH2	40
ANH	80
ANW	40
ASAS	60
AY	80
AYM	60
DA	90
DYP	30
H	70
HN	90
IMY	50
IRMR	70
MA	50
MBA	80
MFH	60
MNA	40
MR	70
MR2	80

MRK	80
MRR	20
MTL	60
MZM	80
NI	70
RAP	60
TH	50

The data of students' pre-test, then were arranged in the form of frequency and percentages through score's criteria, as they were presented in the following table:

Table 4.2 The Percentages of Students' Reading Comprehension Before Using QAR Strategy

Grade	Criteria of Score	Frequency (f)	Percentage (p)
A	91-100	-	-
B	81-90	2	6.67%
C	71-80	7	23.33%
D	61-70	4	13.33%
E	41-60	11	36.67%
F	0-40	6	19.99%
		$\sum f = 30$	$\sum p = 100\%$

From the criteria in table 3.2, it can be concluded that the students' achievement before taught using QAR Strategy above the average was 36.67% with very good score 6.67% where the students got score range from to 81-90 with grade B and good score 6.67% where the students got score range from to 71-80 with grade C. Meanwhile, there were 23.34% with average criteria where the students got score range from to 61-70 with grade D. furthermore, there were 13.34% with poor criteria where the students got score range from 41-60 with grade E. Finally, 20% with very poor criteria where the students only got score

range from to 0-40 with grade F. From the table above, the majority of the students still got score below the average.

2. Students' Achievement after Using QAR Strategy

After being given a treatment using QAR Strategy, the students were given a post test. The test was same from the pretest, both of them had the same level of difficulties. The numbers of students who took the Post-test were 30 students. The highest score in post-test was 100 and the lowest score was 40. This test was intended to know the students' reading comprehension achievement after students got treatment. The students' Reading comprehension achievement in post-test was presented in Table 4.3:

Table 4.3 The Students' Achievement After Using QAR Strategy (Post-Test)

Student (N)	Score of Posttest
AAF	90
AAH	70
AE	60
AF	70
AH	60
AH2	70
ANH	90
ANW	50
ASAS	70
AY	80
AYM	70
DA	100
DYP	50
H	90
HN	70
IMY	60
IRMR	90
MA	80
MBA	100
MFH	90

MNA	50
MR	70
MR2	80
MRK	90
MRR	40
MTL	70
MZM	80
NI	90
RAP	70
TH	60

The data of students' post-test, then were arranged in the form of frequency and percentages through score's criteria, as it was presented in the following table:

Table 4.4 The Percentages of Students' Reading comprehension After Using QAR Strategy

Grade	Criteria of Score	Frequency (f)	Percentage (p)
A	91-100	2	6.67%
B	81-90	6	19.99%
C	71-80	4	13.33%
D	61-70	9	29.99%
E	41-60	8	26.67%
F	0-40	1	3.33%
		$\sum f = 30$	$\sum p = 100\%$

From the criteria on table 3.2, it can be concluded that the students who achieved above the average was 40% categorized as good score where the students got score range 91-100 with grade A. Meanwhile, there were 6.67% with very good criteria where the students got score range from 81-90 with grade B and

71-80 grade C. From the table above, the majority of the students got score upper the average.

B. The Result of Pre-test and Post-test of One Group Experimental

Table 4.5 The Result of Pre-test and Post-test of One Group Experimental by Gained Score Using QAR Strategy

No	Student (N)	Pretest	Posttest	Gained Score
1	AAF	80	90	10
2	AAH	60	70	10
3	AE	50	60	10
4	AF	60	70	10
5	AH	40	60	20
6	AH2	40	70	30
7	ANH	80	90	10
8	ANW	40	50	10
9	ASAS	60	70	10
10	AY	80	80	0
11	AYM	60	70	10
12	DA	90	100	10
13	DYP	30	50	20
14	H	70	90	20
15	HN	90	70	-20
16	IMY	50	60	10
17	IRMR	70	90	20
18	MA	50	80	30
19	MBA	80	100	20
20	MFH	60	90	30
21	MNA	40	50	10
22	MR	70	70	0
23	MR2	80	80	0
24	MRK	80	90	10
25	MRR	20	40	20
26	MTL	60	70	10
27	MZM	80	80	0
28	NI	70	90	20
29	RAP	60	70	10

30	TH	50	60	10
Total		1850	2210	360

1. Determine mean of pre-test of experimental class

$$\begin{aligned}
 M_{x_1} &= \frac{\Sigma x}{N} \\
 &= \frac{1850}{30} \\
 &= 61.67
 \end{aligned}$$

2. Determine mean of post-test of experimental class

$$\begin{aligned}
 M_{y_1} &= \frac{\Sigma y}{N} \\
 &= \frac{2210}{30} \\
 &= 73.67
 \end{aligned}$$

3. Determining mean of difference of pretest and posttest

$$\begin{aligned}
 M_{D_1} &= \frac{\Sigma D}{N} \\
 &= \frac{360}{30} \\
 &= 12
 \end{aligned}$$

According to the result of pre-test and post-test from the experimental class, it shows that the lowest score of pre-test was 20 and the highest score was 90. Besides, the lowest score of post-test was 50 and the highest score was 100. The mean of pre-test was 61.66 and post-test 73.66. after conducting pre-test and post-test, the mean of gained score that the teacher got was 12. the mean of post-test after the students got treatment using QAR Strategy was higher than the mean of pre-test before the students got treatment.

C. Analysis of Data

1. Normality Test

According to Sugiono (2006:77), normality test is a test that use to test whether normal or not the distribution of data. The writer used SPSS version 23 program to test the normality of the data. The normality test in this research used the *Shapiro-Wilk* formula, based on the degree of significance 0.05 the data is considered normally distributed if the significance >0.05 . if the significance >0.05 , the data is not normally distributed.

Table 4.6 Normality of pretest and posttest of experimental class

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pretest	,146	30	,105	,948	30	,146
Posttest	,159	30	,050	,944	30	,117

a. Lilliefors Significance Correction

Based on table 4.8, it can be seen that the significant from normality test (pre-test) of Shapiro-Wilk shows 0.146. Therefore, the significant score is higher than 0.05 ($0.146 > 0.05$). it means that H_0 is accepted so the data is normally distributed. And also it can be seen that the significant from normality test (post-test) of Shapiro-Wilk shows 0.117. therefore, the significant score is higher than 0.05 ($0.117 > 0.05$). in other words, H_0 is accepted so the data is normally distributed.

2. Homogeneity Test

Based on the calculation of normality, the writer got the result that all data in pre-test and post-test of experiment class have been normality distributed. The next step of the calculation was finding the homogeneity of the data. The purpose of this calculation was to see whether the data/sample in class homogenous or heterogeneous.

Table 4.7 Test of Homogeneity of Variances

Pretest

Levene Statistic		df2	Sig.
,661	5	23	,656

Based on the table above, it can be seen that the result of homogeneity test *Levene statistic* score shows 661 with the significant 0.656. Therefore, the significant score is higher than 0.05 ($0.656 > 0.05$). it means that the sample was homogeneous.

Table 4.8 Test of Homogeneity of Variances

Posttest

Levene Statistic	df1	df2	Sig.
1,616	5	22	,197

Based on the table above, it can be seen that the result of homogeneity test *Levene statistic* score shows 1.616 with the significant 0.197. Therefore, the

significant score is higher than 0.05 ($0.197 > 0.05$). it means that the sample was homogeneous.

D. Hypothesis Testing Using Paired Sample T-Test

In order to test the hypothesis, this research used *Paired Sample T Test*. *Paired Sample T Test* can be used to test whether there is a progress made by students if we compare the means of the scores before and after a teaching learning process. In this research, *Paired Sample T Test* calculated the means of pre-test and post-test score and then the writer had the output of significance value (P value), if the significance value <0.05 , it is concluded that hypothesis is accepted, but if the significance value >0.05 it is concluded that hypothesis is rejected.

Table 4.9 Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Pretest	61,67	30	18,020	3,290
Posttest	73,67	30	15,643	2,856

Based on the table above, it can be seen that the result of paired sample statistic for pre-test and post-test . The number of students are 30, the mean score for pre-test is 61.67 with standard deviation 18.020 and standard error mean 3.290, while the mean score for post-test is 73.67 with standard deviation 15.643 and standard error mean 2.856.

Table 4.10 Paired Samples Test

	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre-Test - Post-Test	-12,000	10,306	1,882	-15,848	-8,152	-6,378	29	.000

Based on the table above, it can be seen that the result of analysis using T-test. The mean pre-test and post-test was (-12,000), standard deviation was (10.306), mean standard error was (1.882). The lower different was (-15.848), while the upper different was (-8.152). The result test $t = (-6.378)$ with df 29 and significance 0.000.

Interpretation toward t value conducted by two methods:

1. Based on the test score t compared with t_v (t value) with t_t (t table), where $df = 29$, the result of numeral: 2,045 for standard significant 5% and 2,758 for standard significant 1%. With $t_0 = -6.378$, it means that more large from ttable (symbol minus in this matter ignored at standard significant 5% as well at standard significant 1%, it means the hypothesis null was rejected).
2. Based on the large of digit significant. In this case decision taken from the following consideration:
 - a. If probability > 0.05 then hypothesis null was accepted
 - b. If probability < 0.05 then hypothesis null was rejected

With the numeral of significant value $0.000 <$ than significant level 0.05 , then the hypothesis null stated that there is no significant different score by using QAR Strategy on students' reading comprehension in the eleventh Science II students at SMA Darul Hijrah for male was rejected.

E. Hypothesis Testing

The hypothesis testing of this study was as follows:

1. If the significant value $<$ significant level, the alternative hypothesis (H_a) was accepted and null hypothesis (H_0) was rejected. It means that there was different score on the students' reading comprehension achievement before and after being taught by QAR strategy. The different was significant.
2. If the significant value $>$ significant level, the null hypothesis (H_0) was accepted and alternative hypothesis (H_a) was rejected. It means that there was not different score on the students' reading comprehension achievement before and after being taught by QAR strategy. The different was not significant.

Based on statistical calculation using SPSS 23, the researcher gave interpretation to significant value. The significant value of the research was 0.000 , significant level 0.05 and the ttable $2,045$ the $df : 29$ whereas the tcount 6.378 . When the significant value (0.000) $<$ significant level (0.05) the alternative hypothesis (H_a) was accepted and the null hypothesis (H_0) was rejected. While significant value (0.000) $>$ significant level (0.05) the null hypothesis (H_0) was

accepted and the alternative hypothesis (H_a) was rejected. Because significant value (0.000) was smaller than significant level (0.05), it can be concluded that alternative hypothesis (H_a) was accepted and the null hypothesis (H_0) was rejected. It means that there is different score on the students' reading comprehension achievement before and after being used QAR Strategy. There was different on *Paired Sample Statistic* that the mean before used QAR Strategy is 61.67, and after being taught using QAR Strategy was 73.67, it means that the mean before being using QAR Strategy was lower than after being using QAR Strategy. Thus, it can be concluded that the QAR Strategy is effective used on the students' reading comprehension achievement in Eleventh grade of science II SMA Darul Hijrah for male

F. Discussion

As it was previously stated that the T-test is used to check the significant different in scores achieved by one group. The data analysis shows that t_{table} (5%=2.045) < t_{test} (6.378) > t_{table} (1 %=2.758). It means that the alternative hypothesis (H_a) is accepted and null hypothesis (H_0) is rejected. It shows that there is significant different score of the students' between before and after being using QAR strategy in improving students' reading comprehension.

Based on the research method, the study is done into three steps. First step is preliminary' study where the researcher wants to know the students' reading comprehension skill in answering question of the text by administering a pretest.

The second step is giving a treatment to the students. The treatment here is giving the QAR strategy. After getting treatment, the last step the researcher giving a posttest to the students.

Besides, some of student also felt that answering the QAR questions was challenging. Students thought that this strategy is new for them, because the teacher usually used questions that the he answer can be found easily in the passage and do not require the students to relate their prior knowledge or experience in order to answer the questions for the students' task. Different from question in QAR categorization, especially 'in my head' categorization. In order to answer those questions, students have to connect the passage with their background knowledge or experience. In fact, these questions are needed to develop the students higher order of thinking as mention above. Susan (2010:4) Connecting is one of skill in critical thinking. Higher order of thinking can be defined in three terms; transfer, critical thinking, and problem solving. By answering this QAR categorization questions, students also can propose their opinion. Moreover, the reading process was done individually so that they can propose their own opinion freely in their answer sheet.

The writer believed that using QAR strategy may improve students' reading comprehension. It can be seen from the quantitative data result above.

The students mean score before using QAR strategy increase more significantly than students mean score after using QAR strategy. This strategy had Improve students reading skill and it helped them in comprehending the passage.

From the explanation above, the using QAR strategy in improving reading skill gives a positive effect on the students' achievement, because they can study comprehending easily and relax without any burden. It can be done because by fun learning, information can be understood and maintained well. The description above implies that the QAR Strategy offer fun situation for the learner, so that they can learn better. Consequently, they can improve their reading comprehension through the using QAR strategy.