CHAPTER IV

RESEARCH FINDING

This chapter presents the results and discussion of the research. It is divided into the calculation of try out test, the data description, the data analysis, and the data interpretation.

4.1 The Calculation of Trying Out Instrument

Trying out of instrument was needed in order to know the validity and reliability of the test items. The try-out test has been held on 14 May 2019 in class 5A as sample of try-out test consist of 17 students. In this part, the data showed the calculation of validity in the try out instrument.

4.1.1   The Validity of Try Out Test

The calculating the validity of the item test by using SPSS formula. The result of computing the try out test, the result could be seen more specific as the table below:

Table 4.1

The Validity of   Try Out Test

		N	%
Cases	Valid	6	100.0
	Excluded[a]	0	.0
	Total	6	100.0

The result of r_{xy} is compared with r_{table} of product moment by 5% degree of significance. The items test were valid when $r_{xy} > r_{table}$. The r_{table} of this research was 0,482. It showed that there were 6 item numbers were valid and 4 item numbers is invalid.

Valid meant that r_{xy} was higher than r_{table} however invalid meant that r_{xy} was lower than $r_{table.}$ The result of the item invalid or valid in the table 4.2. then the result of the data by using SPSS were illustrated in appendix 1.

Table 4.2

The Items of Valid and Invalid

Criteria	Number of Item	Total
Valid	3, 4, 5, 6, 7, 10	6
Invalid	1, 2, 8, 9	4

4.2 The Data Description

In this part, the researcher showed the general description of students' score in both experimental and control group. The description divided into two sections. There are the pre-test scores and the post-test scores.

4.2.1 Pre-test Calculation

The pre-test conducted in experimental and control group. The pre-test has been held on 14 May 2019 in class 5A as experimental group which is consisting of 17 students. Besides that, in control group the pre-test has been held on 16 May 2019 in class 5B which consisting of 15 students. The data of pre-test scores showed as follows:

Table 4.3

The Students' Pre-test Scores

Students Number	pre-test of experimental group	Students Number	pre-test of control group
1	55	1	52
2	54	2	55
3	51	3	57
4	49	4	52
5	55	5	53
6	55	6	56
7	53	7	56
8	50	8	57
9	46	9	57
10	56	10	57
11	57	11	55
12	46	12	53
13	46	13	55
14	52	14	56
15	56	15	55
16	47		
17	57		
∑	885	∑	826
Mean	**52.0588**	**Mean**	**55.0667**

The data above showed the students pre-test scores of the experimental group and control group. The test was given to students in the preliminary meeting before the researcher giving any treatment. Both experimental and control group had different scores

either in the lowest and the highest score. In the experimental had the lowest score was 46 and the highest score of pre-test was 57. Whereas the control group had the lowest score was 52 and the highest score of pre-test was 57. Then the mean score of experimental group was 88.5 and the control group was 82,6.

After calculating the mean scores of experimental group and control group the researcher also count using homogeneity test. Homogeneity test is used to measure the scores obtained whether it is homogeny or not. Basrowi and Soenyono (2007:106) state that the score is categorized homogeny when the significant was higher than mean significant difference at 0,05 levels. In measuring the homogeneity test, Levene's statistics found in SPSS is used. The homogeneity test was used to measure students' pre-test score in experimental and control groups.

Based on the result of analyzing the data of pre-test of experimental and control groups. It was found that the significant was 0,012. It means that the sample between experimental group and control group was categorized not homogeneous because the significant was low than mean significant difference at the level 0,05. The results of homogeneity test can seen as table below:

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means

Table 4.4

The Homogeneity of Pre-test

Pre-test	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	72.094	1	72.094	7.071	.012
Within Groups	305.875	30	10.196		
Total	377.969	31			

Computation Using SPSS Calculation

The researcher also count using T-test. Table 4.4 was described the Pre-test scores of experiment class and control class by using T-test.

Table 4.5

Group Statistics

	Students	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	Exp_class	17	52.0588	4.03842	.97946
	Cont_class	15	55.0667	1.79151	.46257

The T-test of Pre-test score of Experiment Group and

Control Group

		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pre-test	Equal variances assumed	14.140	.001	-2.659	30	.012	-3.00784	1.13114	-5.31794	-.69775
	Equal variances not assumed			-2.777	22.646	.011	-3.00784	1.08319	-5.25054	-.76514

From the result of the research show that the experimental class the students who were taught using Quantum method has the mean value 52.0588. Meanwhile, the control class the students who were taught without using Quantum method has the mean 55.0667. It can be said that the score of experimental class is lowest than control class. T-table showed that was -2,659. It means that the result from this calculation -2,659<2,042. It means that there was no significant different of students taught Quantum method and those taught without using Quantum method.

4.2.2 Post-test Calculation

The post-test conducted in experimental and control group. The post-test has been held on 15 May 2019 and in class 5A as experimental group which is consisting of 17 students. Besides that, in control group the post-test has been held on 17 May 2019 in

class 5B which consisting of 15 students. The data of post-test
scores showed as follows:

Table 4.6

The Students' Post-test Scores

Students Number	post-test of experimental group	Students Number	post-test of control group
1	98	1	84
2	86	2	71
3	84	3	84
4	84	4	84
5	98	5	84
6	98	6	89
7	85	7	86
8	89	8	82
9	84	9	82
10	98	10	98
11	98	11	88
12	89	12	88
13	84	13	89
14	98	14	84
15	98	15	84
16	89		
17	98		
∑	1.558	∑	1.277
Mean	**91.6471**	**Mean**	**85.1333**

The data above showed the post-test scores of the
experimental and control group. The post-test was given in the last

meeting to students after they got any treatment. Especially for students of experimental group. For control group after conventional learning with the same materials.

The data lowest that the lowest scores of the experimental group was 84 and the control group was 71. Then, the highest scores of experimental group was 98 and the control group was 98. The mean of experimental group was 91.6471 and control group was 85.1333. the result showed that there was an improvement in the post-test result than pre-test. Based on the result of analyzing the data of post-test of experimental and control groups. It was found that the significant was 0,05. It means that the sample between experimental group and control group was categorized homogeneous because the significant was equal with mean significant difference at the level 0,05. The results of homogeneity test can seen as table below:

Table 4.7

Post-test	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	338.103	1	338.103	9.275	.005
Within Groups	1093.616	30	36.454		
Total	1431.719	31			

The Homogeneity of Post-test Computation Using SPSS Calculation

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Post-test	Equal variances assumed	4.585	.040	3.045	30	.005	6.51373	2.13883	2.14565	10.88180
	Equal variances not assumed			3.071	30.000	.005	6.51373	2.12084	2.18240	10.84505

After calculating the homogeneity of post-test in experiment class

and control class, the researcher also done by using T-test calculation. The

result of the calculation T-test calculation it can be seen in 4.8 table.

Table 4.8

The T-test of Post-test Score of Experimental Group and Control

Group

Group Statistic

	Students	N	Mean	Std. Deviation	Std. Error Mean
Post-test	Exp_class	17	91.6471	6.39278	1.55048
	Cont_class	15	85.1333	5.60442	1.44706

the result of the research show that the experimental class the

students who were taught using Quantum method has the mean value 91,6471. Meanwhile, the control class the students who were taught without using Quantum method has the mean 85,1333. It can be said that the score of experimental class is higher than control class. T-table showed 3,071. It means that the result from this calculation 3,071>2,042. It means that there was significant difference of students taught using Quantum method and those taught without using Quantum method.

4.3 Discussion

In this section the researcher described the interpretation of the answer and summarized the hypothesis. The research was held to answer the question whether the use Quantum method is effective to improve students' speaking ability at the fifth grade of SD N Puncel 03 or not. In order to answer question, the researcher writes Alternative Hypothesis (H_a) and the Null Hypothesis (H_o) as follows:

a. The Alternative Hypothesis (Ha): there was significant effectiveness using Quantum method to improve students' speaking ability.

b. The Null Hypothesis (Ho): there were no significant using Quantum method to improve students' speaking ability.

To prove the hypothesis, the data obtained in pre-test and post-test were calculated by using t_{test} formula with assumption as follows:

a. If $t_0 > t_{table}$, the Null Hypothesis (Ho) was rejected and the Alternative Hypothesis (Ha) was accepted. It was proved that Quantum method was effective improve students' speaking ability.

b. If $t_0 < t_{table}$, the Null Hypothesis (Ho) was accepted and the Alternative Hypothesis (Ha) was rejected. It was proved that Quantum method was not effective improve students' speaking ability.

According to the analysis of the result above, there was a significant difference between the pre-test and post-test scores. The figure below are described the mean score of pre-test and post-test in experimental class and control class.

Figure 4.1

The Comparison of Mean Scores in Experimental Class and Control Class

Table 4.9

The T-test scores of Pre-test and Post-test of Experimental Class and Control

Class

T-test of Pre-test	T-test of Post-test
-2,659	3,071

The figure 4.1 Which results from pre-test and post-test will be calculated by using SPSS (Statistical Package for Social Science) program to measure whether there was a positive effect or no after used quantum method, describe the mean scores of pre-test and post-test of experimental and control class. Then the mean pre-test score of the experimental group was 52,0588 and the control group was 55,0667. After analyzed the result of pre-test score by using SPSS, the result showed that the significant of t-test was -2659. If this is compared with t-table on df 30 in significance 5% the value of degree was 2,042. So that, it was significant because $t_{observe} > t_{table}$ (-2659< 2,042) by using SPSS calculation.

The result of SPSS from the post-test score showed that the score of $t_{observe}$ was 3,071 by using degree of freedom 5%, the value of 30 (the degree of significance) as stated in the t-table was 2,042. It means that from the post-test score there is a significant high score than pre-test score, because $t_{observe} > t_{table}$ (3,071>2,042) by using SPSS calculation.