CHAPTER IV

RESEARCH FINDING AND DISCUSSION

In this chapter, the data of this research result of the data analysis were presented. The researcher describes and discusses the data to find out the answer of the statements of the problem in chapter 1. The writer gave pre-test and post-test to know the effect of the collaborative learning technique to improve students' reading skill. The researcher wanted to know whether any significant difference between class that was taught by using collaborative learning technique as an alternative technique in teaching reading skill and class that was taught with other technique.

4.1 Try-Out Analysis

This analysis was meant to find out the validity and reliability of the instrument before it was used as the pre-test and post-test. This test was conducted on 21 August 2019. Try-out test was conducted for APHP 1 class. There were 29 students as respondent. Try-out test is available in appendix 4.

1. Validity

The reading skill test consists of twenty five item numbers. From the try-out test that was conducted, it was obtained that item numbers were valid. Following the third chapter, the test said to be *VALID* if the result r-xy is greater than r-table. The data was calculated by using product moment and the result showed that the index validity of item number 1 was 0,494. Then, the writer consulted the table of r with N=29 significance level 5% in which then r-table is 0,3673. The following is the example of

counting the validity of the data on the table 4.1. The value of r-xy follows:

Table 4. 1

Validity Test of Try-Out Instrument

No	If rxy > r-table = Valid ; rxy < r-table= Invalid	Valid or Invalid
1	rxy = 0.494 > 0,3673	Valid
2	rxy = 0.421 > 0,3673	Valid
3	rxy = 0.442 > 0,3673	Valid
4	rxy = 0.425 > 0,3673	Valid
5	rxy = 0.378 > 0,3673	Valid
6	rxy = - 0.296 < 0,3673	Invalid
7	rxy = 0.567 > 0,3673	Valid
8	rxy = 0.523 > 0,3673	Valid
9	rxy = 0.472 > 0,3673	Valid
10	rxy = 0.423 > 0,3673	Valid
11	rxy = 0.494 > 0,3673	Valid
12	rxy = -0.039 < 0,3673	Invalid
13	rxy = 0.053 < 0,3673	Invalid
14	rxy = 0.665 > 0,3673	Valid
15	rxy = 0.120 < 0,3673	Invalid
16	rxy = 0.337 < 0,3673	Invalid
17	rxy = 0.627 > 0,3673	Valid

18	rxy = -0.008 < 0,3673	Invalid
19	rxy = 0.064 < 0,3673	Invalid
20	rxy = 0.187 < 0,3673	Invalid
21	rxy = 0.408 > 0,3673	Valid
22	rxy = 0.278 < 0,3673	Invalid
23	rxy = 0.571 > 0,3673	Valid
24	rxy = 0.166 < 0,3673	Invalid
25	rxy = 0.652 > 0,3673	Valid
26	rxy = 0.483 > 0,3673	Valid
27	rxy = 0.120 < 0,3673	Invalid
28	rxy = 0.177 < 0,3673	Invalid
29	rxy = 0.212 < 0,3673	Invalid
30	rxy = 0.097 < 0,3673	Invalid
31	rxy = 0.482 > 0,3673	Valid
32	rxy = 0.531 > 0,3673	Valid
33	rxy = 0.093 < 0,3673	Invalid
34	rxy = 0.252 < 0,3673	Invalid
35	rxy = 0.431 > 0,3673	Valid
36	rxy = 0.553 > 0,3673	Valid
37	rxy = 0.122 < 0,3673	Invalid
38	rxy = 0.197 < 0,3673	Invalid
39	rrxy = -0.107 < 0,3673	Invalid

40	rxy = -0.001 < 0,3673	Invalid
41	rxy = 0.403 > 0,3673	Valid
42	rxy = -0.042 < 0,3673	Invalid
43	rxy = 0.630 > 0,3673	Valid
44	rxy = 0.618 > 0,3673	Valid
45	rxy = 0.158 > 0,3673	Valid
46	rxy = 0.329 < 0,3673	Invalid
47	rxy = 0.216 < 0,3673	Invalid
48	rxy = 0.676 > 0,3673	Valid
49	rxy = 0.473 > 0,3673	Valid
50	rxy = 0.472 > 0,3673	Valid

Criteria	Number of Items	The Total Number
Valid	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 14, 17, 21, 23, 25, 26, 31,32, 35, 36, 41, 43, 44, 48, 49, 50	26
Invalid	6, 12, 13, 15, 16, 18, 19, 20, 22, 24, 27, 28, 29, 30, 33, 34, 37, 38, 39, 40, 42, 45, 46, 47	24

From the data above, it can be seen that the try-out instrument had 26 valid and 24 invalid items. The result of try-out calculating can be seen in **appendix 6.**

2. Reliability

The better instrument has to be valid and reliable. After analyzing the items of validity of the instrument had been done, the next is to test the reliability of instrument. The test is reliable if the result whether is greater than r-table. The writer used Split Half KR 20 formula to find out the reliability and the result for a=5% N=29 and r-table was 0,3673.

RKr20 = $\left(\frac{K}{K-1}\right)(1-\frac{\Sigma pq}{a^2})$

The item is reliable if rxx > rtable

r-table = 0.3673.

Rxx = $\left(\frac{K}{K-1}\right)(1-\frac{\Sigma pq}{a^2})$

Rxx = $\left(\frac{29}{29-1}\right)(1-\frac{9.76}{49.01})$

Rxx = $\left(\frac{29}{28}\right)(1-0.2)$

Rxx = $(1.04)(0.8)$

Rxx = 0.832

The result for computing reliability of the try out instrument was 0.832 for a=5% with N=29 r-table= 0,3673. From this calculation showed that the instrument was definitely reliable.

3. Homogeneity

The variance homogeneity test is intended to find out whether the sample taken from the population has the same variant or not show significant difference. Homogeneity test is done by the initial test (pretest) and final test (post-test) in the control group and experimental

group. Data requirements are said to be homogeneous if the significance value is calculated greater than the significance level, which is 0.05. The counting process is done with the help of the SPSS 25 computer program. The table can be seen below:

Table 4. 2
Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Score	Based on Mean	.842	1	42	**.364**
	Based on Median	.942	1	42	.337
	Based on Median and with adjusted df	.942	1	38.553	.338
	Based on trimmed mean	.856	1	42	.360

Table 4.2 shows that the calculation of students' pretest data was obtained the levene statistic is 0,842 with df1 = 1 and df2 = 42, and the significance of the data was 0.364 is greater than 0.05, then the pretest score of the control group and group the experiment was declared homogeneity.

Table 4. 3
Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Score	Based on Mean	.138	1	42	**.712**
	Based on Median	.021	1	42	.885

	Based on Median and with adjusted df	.021	1	41.216	.885
	Based on trimmed mean	.105	1	42	.748

While the results of the calculation of the students' post-test data obtained levene statistics of 0,138 with df1 = 1 and df2 = 42, and significance of the data was 0.712. The significance value above is greater than 0.05, then the score the post-test of the control group and the experimental group were declared homogeneity.

4. Normality

Data on this normality test were obtained from the pretest and post-test both of experimental and control groups. This test uses computer assistance program SPSS 25. Data requirements are said to be normally distributed if p obtained from the calculation results is greater than the 0.05 level (level 5% error). The following table presents the results of the calculation of the normality test. The table can be seen below:

Table 4. 4
One-Sample Kolmogorov-Smirnov Test of Pretest

		Unstandardized Residual
N		22
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	7.97630382
Most Extreme Differences	Absolute	.097
	Positive	.097
	Negative	-.076
Test Statistic		.097
Asymp. Sig. (2-tailed)		**.200**[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

The result of table 4.4 data shows that the data distribution is normal. Normally, the distribution is also known from the value of Asymp Sig (2-tailed) greater than 0.05 in the pretest and post-test of both groups, experiment group and control group. The significance value 0,200 is greater than 0.05.Then the score of the pretest from the control group and the experimental group were declared Normal.

Table 4. 5
One-Sample Kolmogorov-Smirnov Test of Post-test

		Unstandardized Residual
N		22
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	10.13769236
Most Extreme	Absolute	.126

Differences	Positive	.126
	Negative	-.072
Test Statistic		.126
Asymp. Sig. (2-tailed)		**.200**[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

The result of table 4.5 data shows that the data distribution is normal. The significance value 0,200 is greater than 0.05.Then the score of the post-test from the control group and the experimental group were declared Normal.

4.2 Description of Data

The researcher held field research by teaching learning process. It was done into two classes between XI ATPH 2 as experiment class and XI ATPH 1 as controlled class. The researcher conducted to pretest and post-test and the data was gotten by the researcher. Pretest was given before the treatment began and post-test was given after the treatment finished.

4.2.1 Pre-test Score of Experiment and Control Class

Table 4. 6
Pre-test Score of Experiment and Control Class

Experimental Class			Control Class		
No	Student Code	Score	No	Student Code	Score
1	S-1	32	1	N-1	32
2	S-2	24	2	N-2	40
3	S-3	40	3	N-3	20
4	S-4	20	4	N-4	24
5	S-5	36	5	N-5	40
6	S-6	36	6	N-6	20

7	S-7	28	7	N-7	48
8	S-8	40	8	N-8	40
9	S-9	24	9	N-9	44
10	S-10	24	10	N-10	36
11	S-11	28	11	N-11	44
12	S-12	20	12	N-12	32
13	S-13	36	13	N-13	36
14	S-14	28	14	N-14	36
15	S-15	20	15	N-15	16
16	S-16	24	16	N-16	28
17	S-17	16	17	N-17	48
18	S-18	40	18	N-18	8
19	S-19	28	19	N-19	32
20	S-20	44	20	N-20	24
21	S-21	32	21	N-21	36
22	S-22	16	22	N-22	28
	Σ	636		Σ	712
	Mean	28.9		Mean	32.4
	Median	28		Median	34

Table, 4.5 above describes about the pretest of experimental class and control class. In experimental class, the highest pretest score is 44 while the lowest pretest score is 8. Besides, in the control class, the highest score is 48 while the lowest pretest score is 8. In addition, in the experimental class, the average score is 28,8 and the median is 28. On other hand, in the control class is 32,4 and the median is 34.

The detail is about frequency distribution of experimental class and control class students, the data can be seen on the table and chart of class interval below:

Table 4. 7

Frequency of Experimental Class Pretest

NO	FREQUENCY		Percentage
	Class Interval	Frequency	
1	**10 – 20**	5	22.73
2	**21 – 30**	8	36.36
3	**31 – 40**	8	36.36
4	**41 – 50**	1	4.55
5	**51 – 60**	0	0.00
6	**61 – 70**	0	0
	Σf	22	100

From the table of experimental class above, it can be described that 22,73% students got score about 10 – 20. 36,36% students got score about 21 – 30. 36,35% students got score about 31 – 40. 4,55% students got score about 41 – 50.

Data frequency distribution of pre-test can be described on the chart below:

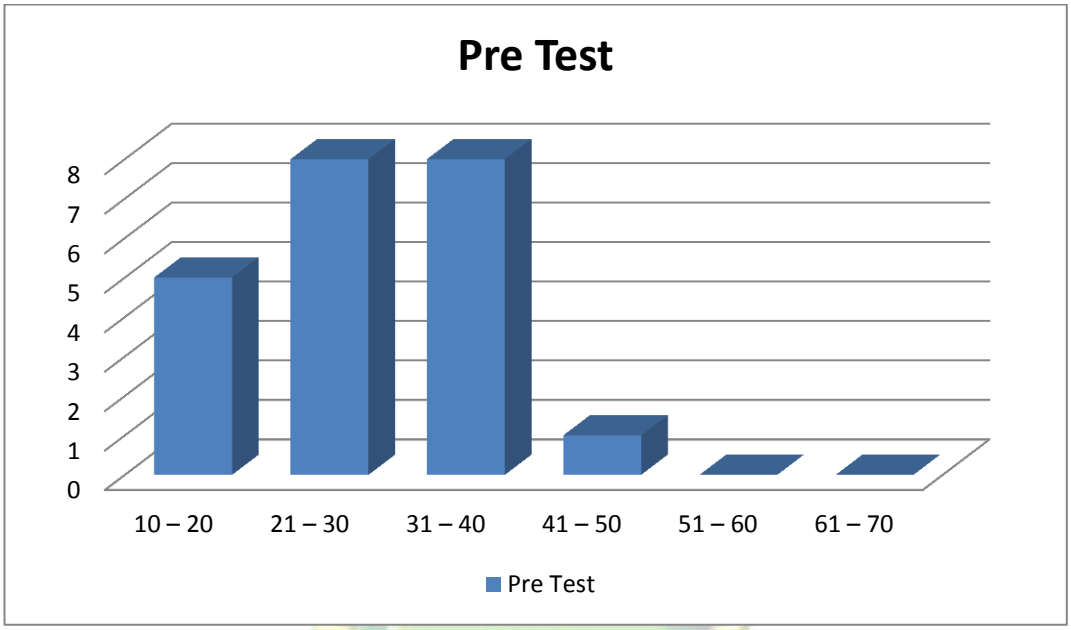

Diagram 4. 1 Frequency of Experimental Class Pretest

Table 4. 8

Frequency Distribution of Control Class Pretest

NO	FREQUENCY		Percentage
	Class Interval	Frequency	
1	**0 – 10**	1	4.55
2	**11 – 20**	3	13.64
3	**21 – 30**	4	18.18
4	**31 – 40**	10	45.45
5	**41 – 50**	4	18.18
6	**51 – 60**	0	0.00
	Σf	22	100

From the table of control class above, it can be described that 4,55% Students got score about 0 - 10. 13,64% Students got score about 11 - 20. 18.18% students got score about 21 – 30. 45,45% Students got score about 31 - 40. 18.18% students got score about 41 - 50.

Data frequency distribution of pretest can be described on the chart below:

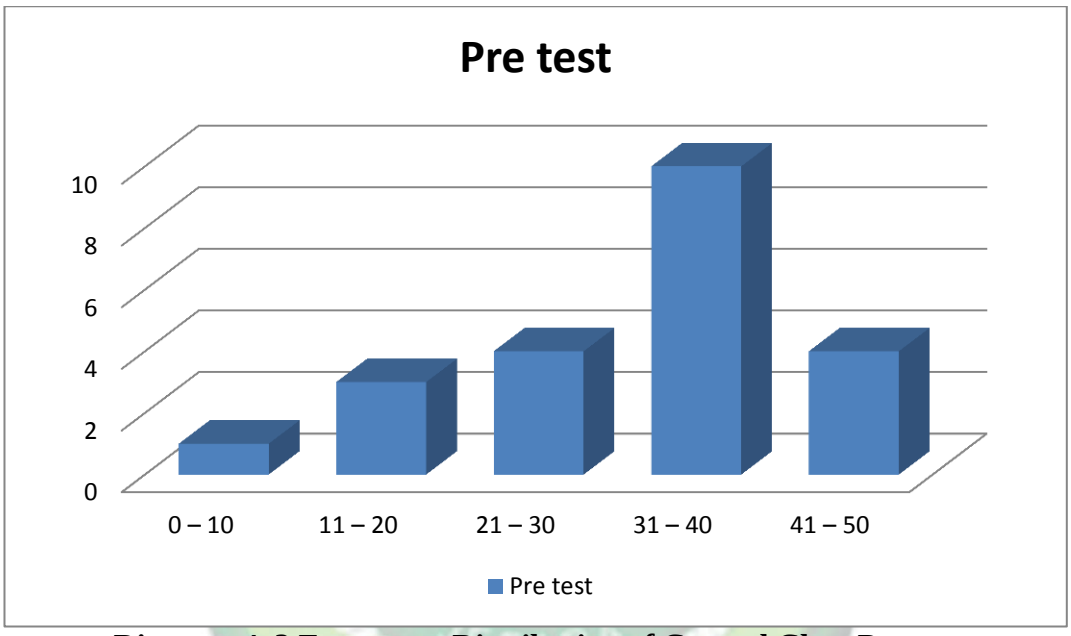

Diagram 4. 2 Frequency Distribution of Control Class Pretest

The T-test of Pre-Test score of Experiment and Control Class

Table 4. 9
Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Pretest	1	22	28.91	8.275	1.764
	2	22	32.36	10.540	2.247

Table 4. 10
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pretest	Equal variances assumed	.842	.364	-1.209	42	.233	-3.455	2.857	-9.220	2.311
	Equal variances not assumed			-1.209	39.759	.234	-3.455	2.857	-9.230	2.321

In this calculation pretest score using SPSS above, T observe 1,209 and the df was 42. To find out the different significant from this score between Experimental and control class, $T_{observe} < T_{table}$ the result is significance between experimental class and control class. The T-table test shows that 2,018. It means that the result from the calculation 1,209 < 2,018 there is no significant between experimental class and control class because T-observe < T-table.

4.2.2 Post-test Score of Experimental and Control Class

Table 4. 11

Post-test Score of Experimental and Control Class

Experiment Class			Control Class		
No	Student Code	Score	No	Student Code	Score
1	S-1	36	1	N-1	24
2	S-2	28	2	N-2	28
3	S-3	68	3	N-3	16
4	S-4	36	4	N-4	20
5	S-5	52	5	N-5	8
6	S-6	52	6	N-6	24
7	S-7	32	7	N-7	24
8	S-8	44	8	N-8	20
9	S-9	36	9	N-9	24
10	S-10	32	10	N-10	48
11	S-11	24	11	N-11	48
12	S-12	32	12	N-12	36
13	S-13	36	13	N-13	16
14	S-14	44	14	N-14	20
15	S-15	24	15	N-15	20
16	S-16	28	16	N-16	56
17	S-17	20	17	N-17	32
18	S-18	48	18	N-18	28
19	S-19	24	19	N-19	40
20	S-20	36	20	N-20	20
21	S-21	44	21	N-21	40
22	S-22	20	22	N-22	36
	Σ	796		Σ	628
	Mean	36.18		Mean	28.55
	Median	36		Median	24

Table, 4.10 above describes about the post-test of experimental class and control class. In experimental class, the highest post-test score is 68 while the lowest post-test score is 20. Besides, in the control class, the highest score is 56 while the lowest post-test score is 8. In addition, in the

experimental class, the average score is 36,18 and the median is 36. On other hand, in the control class is 28,55 and the median is 24.

The detail is about frequency distribution post-test score of experimental class and control class students, the data can be seen on the table and chart of class interval below:

Table 4. 12

Frequency of Experiment Class Post-test

NO	FREQUENCY		Percentage
	Class Interval	Frequency	
1	**10 – 20**	2	9.09
2	**21 – 30**	5	22.73
3	**31 – 40**	8	36.36
4	**41 – 50**	4	18.18
5	**51 – 60**	2	9.09
6	**61 – 70**	1	4.55
	Σf	22	100

From the table above, 9,09% students got score about 10 – 20. 22,73% Students got score about 21 – 30. 36,36% students got score about 31 – 40. 18,18% Students got score about 41 – 50. 9,09% students got score about 51 – 60. 4,55% students got score about 51 – 60.

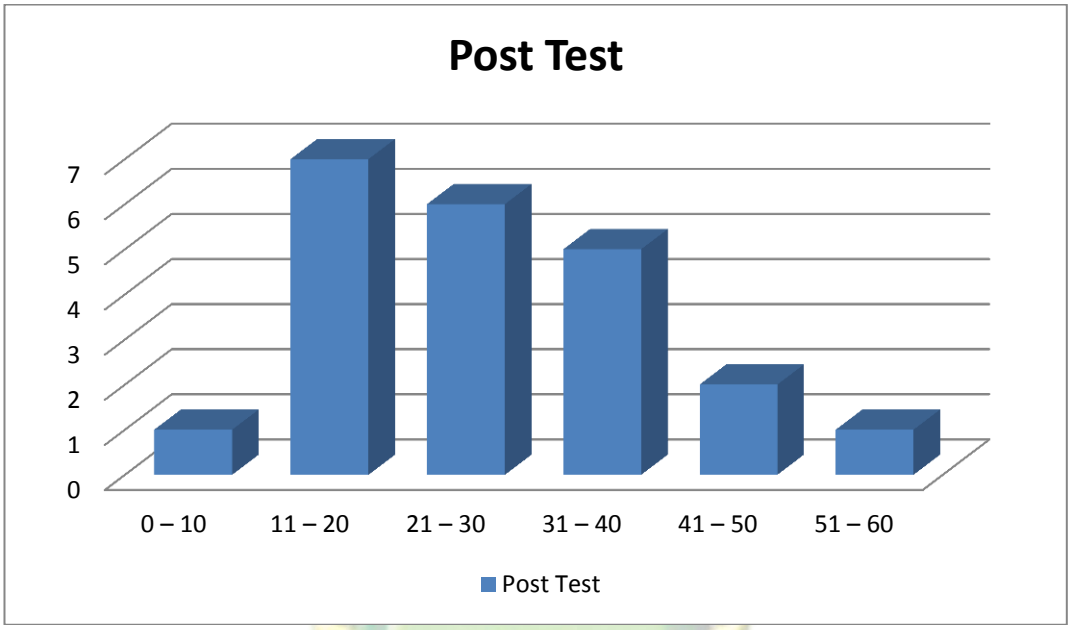

Diagram 4. 3 Frequency of Experiment Class Post-test

Table 4. 13

Frequency Distribution of Control Class Post-test

NO	FREQUENCY		Percentage
	Class Interval	Frequency	
1	**0 – 10**	1	4.55
2	**11 – 20**	7	31.82
3	**21 – 30**	6	27.27
4	**31 – 40**	5	22.73
5	**41 – 50**	2	9.09
6	**51 – 60**	1	4.55
	Σf	22	100

From the table above, it can be described that 4,45% Students got score about 0 - 10. 31,82% Students got score about 11 – 20. 27,27%

student got score about 31 - 40. 22,73% Students got score about 41 – 50. 9,09% student got score about 41 – 4.45% student got score about 51 – 60.

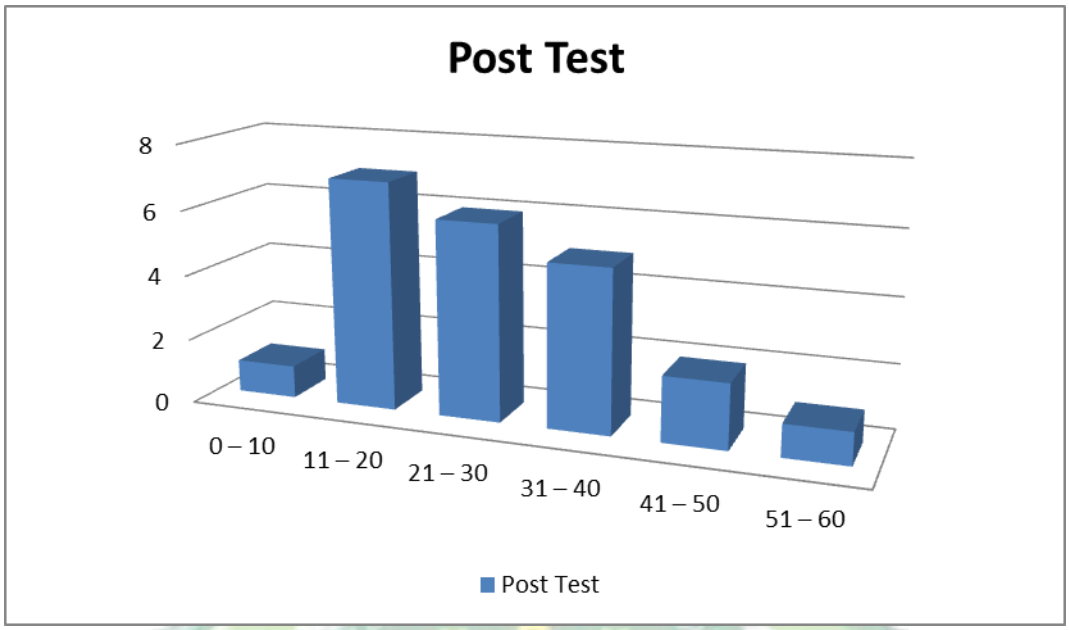

Diagram 4. 4 Frequency Distribution of Controlled Class Post-test

The T-test Score of Experiment Class and Control Class

Table 4. 14

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Posttest	Experiment	22	36.18	11.935	2.545
	Control	22	28.55	12.113	2.583

Table 4. 15

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Posttest	Equal variances assumed	.138	.712	2.106	42	.041	7.636	3.626	.320	14.953
	Equal variances not assumed			2.106	41.991	.041	7.636	3.626	.320	14.953

From the calculation, using SPSS above, T-observe 2,106 . the df was 42, in the table t test is 2,018 . to know the significance between experimental class and control class the t-observe > t-table.

So, from this calculation showed that 2,106 > 2,018, it means the result significant different between experimental class and control class in

the post test score. There is significant difference between students' reading skill taught using collaborative learning technique and without collaborative learning technique.

4.3 Hypothesis Testing

In this section, the researcher described the interpretation of the research finding and summarized the hypothesis. The research was held to answer the question whether collaborative learning technique has any effect in improving students' reading skill at eleventh grade of SMK N 1 Batealit. In order to the question above, the researcher writes the alternative Hypothesis (Ha) and the Null Hypothesis (Ho) as follows:

a) The Null Hypothesis (Ho): There is no effect of using collaborative learning technique to improve students' reading skill at eleventh grade of SMK N 1 Batealit in the academic year of 2019/2020.
b) The Null Hypothesis (Ha): There is effect of using collaborative learning technique to improve students' reading skill eleventh grade of SMK N 1 Batealit in the academic year of 2019/20120.

To prove the hypothesis, the data obtained in experimental and control class were calculated by using t-test formula with assumption as follows:

a. If tα > t-table, the Null Hypothesis (Ho) was rejected and Alternative Hypothesis (Ha) was accepted. It was proven that collaborative learning technique has any effect to improve students' reading skill.

b. If tα < t-table, the Null Hypothesis (Ho) was accepted and alternative Hypothesis (Ha) was rejected. It was proven that collaborative learning technique has no any effect to improve students' reading skill.

According to the analysis of the score using SPSS, the value of tα is 2,106 and the degree of freedom is 42 with 5% degree of significance that is used by the researcher. Base on the significance value of t-table 2,018, the result of the t-observe was higher than t-table (2.106 > 2,018). According the result, the alternative hypothesis (Ha) was accepted and the Null hypothesis (Ho) was rejected.

4.4 Discussion

In this part, the researcher discusses the research findings in order to answer the research question of this study. The researcher explains the research findings of the data analysis obtained from SMK N 1 Batealit. The result of this research generally shows that there this any effect of using collaborative learning technique to improve students' reading skill. It can be proved from experimental class and control class score. In experimental class, the highest pretest score is 44 while the lowest pretest score is 8. Besides, in the control class, the highest score is 48 while the lowest pretest score is 8. In addition, in the experimental class, the average score is 28,8 and the median is 28. On other hand, in the control class is 32,4 and the median is 34. In experimental class, the highest post-test score is 68 while the lowest post-test score is 20. Besides, in the control class, the highest score is 56 while the lowest post-test score is 8. In addition, in the experimental class, the average

score is 36,18 and the median is 36. On other hand, in the control class is 28,55 and the median is 24. It is means that students' who were taught by using collaborative learning technique have better score than students' who did not teach using collaborative learning technique.

Based on the researcher technique, the study was done by using three steps; first step is pre-test for experimental class and control class that it is to know the students' reading skill. The second step is giving treatments to the students of experimental class and control class. During the treatment in experiment class by using collaborative learning technique, the researcher found that most of students enjoyed learning reading through collaborative learning tecnique. They were seriously did the task. In addition, the students of experiment class could lean together in a group and they shared their knowledge to complete the task. When students had done read, they understood or comprehended the sentences in the paragraph. On other hand, in control class, researcher used problem based learning. In the last step is researcher gave post-test for both experimental class and control class.

The result for computing reliability of the try out instrument was 0.832 for a=5% with N=29 r-table= 0,3673. From this calculation showed that the instrument was definitely reliable. Based on the result of previews ,the t-test was used to check significant different score of experimental class an control class. The data analysis showed that t-observe is bigger than t-table (2,106 > 2,018). It is means that alternative (Ha) is accepted and Null Hypothesis (Ho) is rejected.

From the result of t-test, collaborative learning technique is has significant effect to improve students' reading skill. It means that the previous study conducted by Tauhida (2010), Rahman (2015), and Zakaria (2019) saying that collaborative learning can improve students' reading skill is proved by this present research. In additional, after applying collaborative learning technique, students are more active in teaching learning process of improving reading skill. Thus, collaborative learning technique can be alternative technique for teacher in teaching students' reading skill which can make the students understand new word easily.

In addition, although the result of t-test was significance, but the result of pretest and post-test score of experimental class and control class are still under minimum criteria of mastery learning (*KKM*). In pretest, average score of Experimental class is 28,8. On other hand, in the control class is 32,4. In post-test, the average score of Experimental class is 36,18. On other hand, in the control class is 28,55. Those means that the students of SMK N 1 Batealit need special treatment to enforce their reading skill.