

CHAPTER IV RESULT AND DISCUSSION

This chapter presents the research findings and the discussion based on the analysis of the data collected from the using CIRC Technique in reading achievement at MTs. Al-Fatih Surabaya. Related to the research findings, it was seen from the score between control class and experimental class that has differences in pre-test and post-test. The data were analyzed using SPSS 20.0 for window.

A. Research Findings

There are two classes which are used as the subjects in this study. The first class is 8D as the experimental group and the second class is 8B as the control group. The experimental group is taught using CIRC Technique and control group is taught a conventional technique.

Before and after giving the treatments for both classes, the researcher is conducted test to get the score of students' reading descriptive test scores. Both classes are given two types of tests. Those tests are pre-test, the test before giving the treatment, and post-test, the test after conducting the treatment. After obtaining the pre-test and post-test scores from both experimental class and control class, the researcher found the mean from the data.

Mean is the average score of students' scores. It can be found by calculating all scores together and can be divided them by the number of the students. In this research, the researcher used SPSS 20.0 to figured out the calculation average score for both experimental class and control class.

This chapter presents the data result from data analysis using *Mann Whitney U* test. The data is compared between pre-test and post-test of experimental and control class. In analyzing the data is obtained, the researcher firstly tris to find the Mean Score, Normality Test, Homogeneity Test, Test of Hypothesis, and the last one is Mann

Whitney U Test. After getting the data and through those steps the last activity is data interpretation and drawing conclusion.

Based on the objective of the research which has been stated by the researcher in previous chapter, this research aims to answer the question “What is the effect of using CIRC technique to students reading achievement at eight grade of MTs. Al-Fatih Surabaya?” Therefore, in this research the researcher wants to measure the significant difference between the two groups by conducting test and analyzes the data result of the test.

After conducting pre-test and post-test, researcher shows the result of data pre-test and post-test in 8D (experimental class) and 8B (control class) as mentioned below:

1. The Effect of Learning Score for Experimental Class and Control Class.

a. Finding the Mean Score

Before finding the mean score, there are several steps to analyze the data such as finding Data Description of Pre Test and Post Test. Data Description of Pre-test and Post-test of 8B and 8D.

1) Data Pre-test of Control Class.

To break down the pre-test score result of 8B or control class, (see the table below) for further descriptions:

Table 4.1 Students' Pre-test Score of Control Class

No	Students	Score
1	Students 1	50
2	Students 2	55
3	Student 3	55
4	Student 4	50
5	Student 5	50

There are several scores from the students Pre-Test Score. This score is the samples scores from Experimental Class before the students getting the treatment. Researcher also outlined with frequency distribution of pre-test score. (See the table 4.2 below).

Table 4.2 Frequency Distribution Control Class Pre-test Score

Data Pretest Control Class		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	45,00	1	3,3	3,3	3,3
	50,00	12	40,0	40,0	43,3
	55,00	8	26,7	26,7	70,0
	60,00	5	16,7	16,7	86,7
	65,00	3	10,0	10,0	96,7
	70,00	1	3,3	3,3	100,0
	Total	30	100,0	100,0	
Mean	55.00				
Minimum	45.00				
Maximum	7.00				

From the frequency distribution of Control class Pre-Test Score, we can be found how many students that getting the score based on the minimum score until the maximum score. From the table we can get the percentages both of students score and the total frequency from the students. The minimum score is 45 and the maximum score is 70. From the table (See table 4.3) we can get the mean score is 55.00 from the Pre-Test in control class.

2) Data Pre-test of Experimental Class.

To break down the pre-test score result of 8D or experimental class,
(see the table below) for further descriptions:

Table 4.3 Students' Pre-test Score of Experimental Class

No	Student	Score
1.	Student 1	70
2.	Student 2	50
3.	Student 3	65
4.	Student 4	50
5.	Student 5	70

There are several scores from the students Pre-Test Score. This score was the samples scores from Control Class. Researcher also outlined with frequency distribution of pre-test score. (See the table 4.4 below).

Table 4.4 Frequency Distribution Experiment Class Pre-test Score

Data Pretest Experiment Class					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	50,00	14	46,7	46,7	46,7
	55,00	4	13,3	13,3	
	60,00	5	16,7	16,7	60,0
	65,00	4	13,3	13,3	76,7
	70,00	3	10,0	10,0	90,0
	Total	30	100,0	100,0	100,0
Mean	56,33				
Minimum	50.00				
Maximum	70.00				

From the frequency distribution of experiment class Pre-Test Score, we can found how many students that getting the score based on the minimum score until the maximum score. From the table we can get the percentages both of students score and the total frequency from the students. The minimum score is 50 and the maximum score is 70. From the table (See table 4.4) we can get the mean score is 56.33 from the Pre-Test in experiment class.

3) Data Post-test Control Class

To break down the result of post-test of 8B class or control class, (see the table below), for further descriptions:

Table 4.5 Students' Post-test Score of Control Class

No	Student	Score
1.	Student 1	75
2.	Student 2	75
3.	Student 3	85
4.	Student 4	80
5.	Student 5	80

There are several scores from the students Post-Test Score. This score was the samples scores from control class after the students getting the treatment. Researcher also outlined with frequency distribution of pre-test score. (See the table 4.6 below).

Table 4.6 Frequency Distribution Control Class Post-test Score

Data Posttest Control Class					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	75,00	9	30,0	30,0	30,0
	80,00	9	30,0	30,0	60,0
	85,00	7	23,3	23,3	83,3
	90,00	4	13,3	13,3	96,7
	100,00	1	3,3	3,3	100,0
	Total	30	100,0	100,0	
Mean	81,67				
Minimum	75,00				
Maximum	100,00				

From the frequency distribution of control class Post-Test Score, the researcher can be found how many students that getting the score based on the minimum score until the maximum score. From the table we can get the percentages both of students score and the total frequency from the students. The minimum score is 75 and the maximum score is 100. From the table (See table 4.6) we can get the mean score is 81,67 from the Post-Test in Control Class.

4) Data Post-test Experiment Class

To break down the post-test score result of 8D class or experiment class, (see the table 4.7

below) for the further descriptions:

Table 4.7 Students' Post-test Score of Experimental Class

No	Student	Score
1.	Student 1	80
2.	Student 2	90
3.	Student 3	85
4.	Student 4	80
5.	Student 5	100

There are several scores from the students Post-Test Score. This score was the samples scores from Experimental Class. Researcher also outlined with frequency distribution of pre-test score. (See the table 4.8 below).

Table 4.8 Frequency Distribution Experiment Class Post-test Score

Data_Posttest_Experiment_Class					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	75,00	2	6,7	6,7	6,7
	80,00	8	26,7	26,7	33,3
	85,00	6	20,0	20,0	53,3
	90,00	6	20,0	20,0	73,3
	95,00	5	16,7	16,7	90,0
	100,00	3	10,0	10,0	100,0
	Total	30	100,0	100,0	
Mean	87,16				
Minimum	75.00				
Maximum	100.00				

From the frequency distribution of experiment class Post-Test Score, I can found how many students that getting the score based on the minimum score until the maximum score. From the table we can get the percentages both of students score and the total frequency from the

students. The minimum score is 75 and the maximum score is 100. From the table (See table 4.8) we can get the mean score is 87.16 from the Post-Test in Experimental Class.

5) Data Difference of Pre-test and Post-test Score Result of Experimental Class and Control Class

The following table was presented to facilitate in comparing the maximum score, minimum score and mean of pre-test and post-test of experimental class and control class.

Table 4.9 Frequency Distribution Pre-test Post-test of Experimental and Control Class

Data	Pre-Test Control Class	Post-test Control Class	Pre-Test Experiment Class	Post-Test Experiment Class
N	30	30	30	30
Min	45	75	50	75
Max	70	100	70	100
Mean	55	82	56	87

Based on the table above, the minimum score got by the experimental class in pre-test is 50, whereas the maximum score is 70, and the minimum score of experimental class in post-test is 75, the maximum score is 100.

The minimum score got by the control class in pre-test is 45 and the maximum score is 70. Besides, the post-test of control class provides 70 for the minimum score and 100 for the maximum score.

Mean result of pre-test and post-test in control class based on the table above, shows that there is an increasing score of the group, it seems from the mean of pre-test is 55 and the mean of post-test is 82. The increasing number does very significant. Then, the result of pre-test and post-test in experimental class is increasing significantly too, it seems on the table above where the mean of pre-test is 56 and the mean of post-test is 87.

6) Test Difference of Learning Score Result for Experimental Class and Control Class

a) Test Difference of Pre-test

1) Distribution Average Score Pre-test of Experimental Class and Control Class

Data distribution average score is shown the mean compare between the score pre-test of both experimental class and control class. The data was calculated using SPSS 20.0. The result of distribution average is presented in the following table.

Table 4.10 Distribution Average Pre-test Score

Control Class		Experiment Class	
Mean	55,0000	Mean	56,3333
Minimum	45,00	Minimum	50,00
Maximum	70,00	Maximum	70,00
N	30	N	30
Valid		Valid	
Missing	0	Missing	0

Based on average table above, it can be stated that average score of 8B as control class is 55 and the average score of 8B as the experimental class is 56. There is a difference of average score in pre-test between both

experimental class and control class, where the average score of experimental class is higher than control class as the data shown on the table above.

To know whether the difference is significant or not, it was conducted a test of *Independent Sample T-test* with assumption must be qualified. Those are normality and homogeneity, when the assumption is not qualified, test of independent sample t test cannot be continued and replace with *Mann Whitney U* test.

b) Test Difference of Post-test

- 2) Distribution average score post-test of 8D class as experimental class and 8B class as control class

Data distribution average score is shown the mean compare between the score post-test of both experimental class and control class. The data was calculated using SPSS 20.0. The result of distribution average is presented in the table below.

Table 4.11 Distribution Average Post-test Score

Control Class		Experiment Class	
Mean	81,6667	Mean	87,1667
Minimum	75,00	Minimum	75,00
Maximum	100,00	Maximum	100,00
N	30	N	30
Valid		Valid	
Missing	0	Missing	0

Based on the table above, the average post-test score can be assumed that average score of experimental is 87 and the average of control class is 81. There is a difference in post-test average score between both experimental class and control class. Which is the average score of experimental class is higher than control class.

To know whether the difference is significant or not, the independent sample t test assumption must be qualified, those are including normality and homogeneity. When the assumptions are not qualified, the independent sample t test cannot be continued and replaced by *Mann Whitney U* test.

b. Normality Test

1) Normality of Pre-Test Score

In calculating normal distribution of the pre-test score from 8D as experiment class and 8B as control class, the researcher was used *Shapiro-Wilk* test with the level of significance (Sig.) $\alpha = 0.05$. The researcher use *Shapiro-Wilk* because of the sample (N) is less than 50. The result of normality distribution test is presented in the following table.

Table 4.12 Test of Normality Pre-Test

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Class B	,230	30	,000	,881	30	,003
Class D	,278	30	,000	,806	30	,000

a. Lilliefors Significance Correction

Based on the normality test above the result with *Shapiro-Wilk*, it can be found that significance value of experimental class is $0.00 < 0.05$ whereas significance value of control class is $0.003 < 0.05$, because all the classes do not have significance value > 0.05 so the data is not normal distribution.

2) Normality of Post-Test Score

In calculating normal distribution of post-test score from both classes, the researcher was used *Shapiro-Wilk* test with the limit of significance (Sig.) $\alpha = 0.05$ was used. The researcher use *Shapiro-Wilk* because of the sample (N) is less than 50. The result of normality distribution test is presented in the table below.

Table 4.13 Test of Normality Post-test

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Class B	,206	30	,002	,870	30	,002
Class D	,267	30	,002	,826	30	,002

a. Lilliefors Significance Correction

Based on the table above, the normality test result using *Shapiro-Wilk*, it can be found that the significance value of all classes is $0.002 < 0.005$. So the data is not normal distribution.

c. Homogeneity Test

1) Homogeneity Test of Pre Test Score

In calculating the homogeneity of variance, the researcher used the Levene Statistic test and used the level of significance (Sig.) $\alpha = 0.05$. The result of variance homogeneity test is shown in the following table.

Table 4.14 Test of Homogeneity Pre-Test

Test of Homogeneity of Variances			
Pre-Test			
Levene Statistic	df1	df2	Sig.
3,114	1	58	,083

Based on SPSS test result above, It can be found that significance value based on Mean is $0.083 < 0.05$. It is lower than the level of significance ($\alpha = 0.05$), so variance data is not homogeny. Because of normality and homogeneity assumptions are not qualified, the independent sample t test cannot be continued, but it was replaced by *Mann Whitney U* test.

2) Homogeneity Test of Post Test Score

In calculating the homogeneity of variance of experimental class and control class post-test score, the researcher used the *Levene Statistic* test and used the limit of significance (Sig.) $\alpha = 0.05$. The result of variance homogeneity test is shown in the following table

Table 4.15 Test of Homogeneity Post-Test

Test of Homogeneity of Variances			
Post-Test			
Levene Statistic	df1	df2	Sig.
1,978	1	58	,165

Based on the table above which calculated using SPSS, it found that significance value Based on Mean is 0.165, so the data variance is homogeny. Because the normality assumptions are not qualified though homogeneity assumptions are qualified, therefore, independent sample t test cannot be continued, but replaced by *Mann Whitney U* test.

d. Mann Whitney U Test

1) Mann Whitney U Test Pre-Test

The researcher using *Mann Whitney U* test rather than independent sample t test because the data distribution is not normal which the term of the use of independent sample t-test is the data must be normal distribution. In this test, the pre-test scores from both classes, 8B and 8D was compared. The level of significance (Sig.) $\alpha = 0.05$ was used. The result of statistical calculation is presented in the table below.

Table 4.16 Test of Mann Whitney U Pre-test

Mann Whiteney U				
Ranks				
	Class 8B & 8D	N	Mean Rank	Sum of Ranks
Pretest before treatment	Class 8B	30	29,43	883,00
	Class 8D	30	31,57	947,00
	Total	60		

Test Statistics ^a	
	Pretest before treatment
Mann-Whitney U	418,000
Wilcoxon W	883,000
Z	-,497
Asymp. Sig. (2-tailed)	,619

a. Grouping Variable: Class 8B & 8D

Based on test result of *Mann Whitney U* is to know if there is the difference of pre-test average score or not between 8D as the experimental class and 8B as the control class. The result of significance value based on the table above is $0.619 > 0.05$, therefore researcher concludes that there is no difference of pre-test average score between experimental class and control class.

2) Mann Whitney U Test Post-Test

Comparing the post-test scores form experimental class to the control class the researcher was used *Mann Whitney U* test because the data distribution is not normal. In this test, the post-test scores from both classes, B class and D class was compared. The limit of significance (Sig.) $\alpha = 0.05$ was used. The result of statistical calculation is presented in the table below.

Table 4.17 Test of Mann Whitney U Post-test

Ranks				
	Class 8B & 8D	N	Mean Rank	Sum of Ranks
Posttest after treatment	Class 8B	30	24,12	723,50
	Class 8D	30	36,88	1106,50
	Total	60		

Test Statistics ^a	
	Posttest after treatment
Mann-Whitney U	258,500
Wilcoxon W	723,500
Z	-2,896
Asymp. Sig. (2-tailed)	,004

a. Grouping Variable: Class 8B & 8D

Based on the test result of *Mann Whitney U* above, the result of significance value between experimental class and control class is $0.004 < 0.05$. It means there is a significant difference in post-test average score between experimental class and control class.

2. CIRC Technique is Effective Technique for Students Reading Achievement at MTs. Al-Fatich Surabaya

This research study was conducted the research study in MTs Al- Fatich, Surabaya. Based on the data presented above, the researcher analyzed the data hypothesis with *Mann Whitney U* test by using SPSS 20.0 to test the difference between the experimental class which was taught using CIRC Technique and the control class which was taught using conventional teaching technique.

Based on *Mann Whitney U* test, the result of pre-test score shows that the result of significance value (Sig.) is 0.619. It is higher than the level of post-test scores in significance (Sig.) $\alpha = 0.05$ ($0.619 > 0.05$). Based on this result, researcher concluded that there was no difference of pre-test average score between 8D as experimental class and 8B as control class.

In post-test score result, based on *Mann Whitney U* test, researcher found that the result of significance value (Sig.) is 0.004. It is lower than the significance limit

(Sig.) $\alpha = 0.05$ ($0.004 < 0.05$). It means there was significant difference in post-test average score between 8D as experimental class and 8B as control class. Based on SPSS result, researcher can conclude that using CIRC Technique has significant score after applying CIRC technique.

As description above, it can be concluded that the result of hypothesis test is:

1. H_1 : There were significant difference score between CIRC technique and Conventional technique learning outcomes at the eighth grade students in MTs. Al-Fatih, Surabaya that is **accepted** as the result of the hypothesis test is $0.004 < 0.05$

3. Students Enthusiasm in Teaching and Learning Process Using CIRC Technique at MTs. Al-Fatih Surabaya

Based on researcher observation during the treatment, researcher was found some evidences in the using CIRC Technique:

a. Knowledge studied by the students

Based on the researcher observation, it can be seen that almost all of the students were complete the task that the researcher has given in the previous meeting. This activity was done at home. But there were also some students who did not complete their task. The task was to find the things in the picture, situations and the topic were there. Then, students can express their mind and their idea after read the text.

In this research, the students were also easy to accept the clues from the researcher related to find the word meaning, the students' reading comprehension was good enough, the score of students was increased of the pre-test and post-test,

all learning were more meaningful for the students so that the learning outcomes of the students will be able to last longer.

b. Students do something to understand the subject

Based on the researcher observation, most of students were active in this learning activity. It can be seen when they worked in group discussion. The students underlined the word in the handouts that the researcher has given. The students tried to answer the task by their basic knowledge. While the student made a mistake in answering the task, another student gave their suggestion about the task by their knowledge. When they found difficulties, the students asked to their friend to explain their difficulties. Mostly, the students asked the meaning of the word that they did not know. So, the learning process at the class and at home can run well.

c. Students communicate their own results of their thinking

For this aspect, 80% students were active in group discussion. When they did the task from the researcher in group, the students discussed their task with their friends in group during the class activity. It also can be seen when the researcher asked the students to write their answer on the worksheet, most of them could present what they have learned about the lesson. They were very active to share their ideas and to tell to their friends about the text. This technique prevents boredom for students because several kind of activities are included.

There were also some problems happened in the implementation of CIRC technique.

a. Factor from the student

The students were noisy in class. This condition was happened because they were busy to talk with others. The solution for these students was the researcher asked the students to silent with nonverbal and always checked their task with came to the students. Some students always ask about the meaning of word so the reasearcher write the word on white board to avoid noisy class

b. Environment Factor and Unfavorable Situation

In addition, the factors from students' problem that disrupt the learning process were a class situation. Because of the learning process is using new technique sometimes they are really enthusiasm and make the class so crowded because they will learn about new technique. So, the researcher more challenges to handle the class because they are still at the eighth grade of junior high school. They are really interested in learning new technique so, they like make the condition of class become noisy.

B. Discussion

This research study was conducted the research study in MTs. Al-Fatich Surabaya, then, the researcher analyzed the data by using SPSS 20.0 to test the difference between the experimental class which was taught using CIRC technique and the control class which was taught using conventional teaching technique. After conducting the research, the researcher found that there were several evidences which proved theories that support the hypothesis that the researcher has formulated. The evidences were in the form of numerical data based on the analyzing process. The data were collected before (pre-test) and after (post-test) conducting the experiment in MTs. Al-Fatich Surabaya.

Before the further analysis about the using of CIRC technique in reading descriptive text, firstly, the researcher conducted the test. Validity test was used to test whether the instrument was appropriate to measure the student's reading ability or not. After getting the students' pre-test and post-test score, the researcher found out the mean from the score of both classes. The mean from the data was use to found out the average score from each classes. The next test to calculating the pre-test and post-test was normality test and homogeneity test. The normality test was used to test whether the distribution of the research data consistent with the normal distribution. The homogeneity test was used to test whether the variance of the data was homogeneous or not.

The mean scores of the students who have been taught using CIRC technique (experimental class) was lower than the students who have been taught using conventional strategy (control class). It can be seen from the mean result from both classes. Before getting the treatment, pre-test mean score for experimental class was 55 and pre-test mean score for control class was 56.33. After getting different treatment both classes got different progress. It can be seen from the mean score from both classes. The post-test mean score for experimental class was 85 and the post-test mean score for control class is 81.67. There was an different from both classes. But the experimental class score which taught using CIRC technique was higher than the control class score which was taught using conventional technique.

Related to this, students learn the material in their own comfort and they are able to understand and can be practice about their reading using CIRC technique. Using combination of different sources and media (texts, images, and Internet). Wider diversity of activities. Tools for the creation of individual and group projects.

Learning comes out of the classroom and teaching acquires a ubiquitous dimension. A friendlier environment of learning is provided, where there are fewer risks of failing and learners can develop self-confidence with greater freedom to experiment and repeat as many times as needed.

The students have much time to understand the material and looking for another resources which is related to the topic at home. They can do it individually or with friends to share their idea and understanding about the topic in CIRC technique. Based on the research findings, the result of this study shows that there is a significant difference in the student's reading achievement scores between the eighth grade students of junior high school who were taught by using CIRC technique and those who were not. It can be seen by the post-test score result, based on *Mann Whitney U* test, researcher found that the result of significance value (Sig.) is 0.003. It is smaller than the significance limit (Sig.) $\alpha = 0.05$ ($0.000 < 0.05$). This fact simply rejected the null hypothesis (H_0) which said "There were no significant difference score between CIRC technique and Conventional technique learning outcomes to the eighth grade students of junior high school" and accepted the alternative hypothesis (H_1) which said "There were significant difference score between CIRC technique and Conventional technique learning outcomes at the eighth grade students in MTs. Al-Fatich, Surabaya."