CHAPTER IV

RESULT AND DISCUSSION

A. Description of Data

In this chapter the writer would like to present the description of data obtained. As the writer explained in the previous chapter that the population in this research were 120 students of second grade in SMPN 3 Cikande and the sample were 30 students of VIII B as experimental class and 30 students of VIII D as control class.

In this research, the writer did an analyze of quantitative data. The data is obtained by giving test to the experimental class and control class. The test divided two types are pre-test and post-test. The research also gives pre-test before teaching in the class. The research also gives post-test in the experiment class after teaching by using peer tutoring technique and gives post test in control class after teaching without peer tutoring tecnique

1. Experimental Class

The researcher describes the result of pre-test in the experimental class by the table as follow:

Table 4.1

The students' score of pre-test at the experimental class

No	Respondent	Score
1	APR	40
2	ARB	40
3	AS	54
4	BDR	42
5	DA	40
6	GWK	38
7	HND	40
8	IF	56
9	JL	40
10	JM	52
11	MR	40
12	MS	50
13	MD	68
14	MRH	40
15	MN	56
16	MFS	40
17	MF	42
18	MNA	40
19	MKR	44
20	NDP	62

21	NR	68
22	RM	56
23	RAR	50
24	RC	56
25	SR	58
26	SA	68
27	SK	46
28	SB	40
29	YH	40
30	AGR	42
N = 30	TOTAL	$\sum$X= 1448
	AVERAGE	M= 48

Mean of Pre-test:

$M = \frac{\sum X}{N} = \frac{1448}{30} = 48$ (the mean of pre-test experimental class is 48)

While the result of post-test in experimental class got better score. The result of post-test in experimental class described by table below:

Table 4.2

The students' score of post-test at the experimental class

No	Respondent	Score
1	APR	70
2	ARB	76
3	AS	70
4	BDR	78
5	DA	74
6	GWK	60
7	HND	78
8	IF	78
9	JL	70
10	JM	90
11	MR	76
12	MS	80
13	MD	86
14	MRH	70
15	MN	78
16	MFS	72
17	MF	72
18	MNA	78
19	MKR	70
20	NDP	76
21	NR	90

22	RM	80
23	RAR	72
24	RC	80
25	SR	74
26	SA	80
27	SK	72
28	SB	60
29	YH	72
30	AGR	74
N = 30	TOTAL	∑X= 2256
	AVERAGE	M= 75

Mean of Post-test:

$$M = \frac{\sum X}{N} = \frac{2256}{30} = 75$$ (the mean of post-test experimental class is 75)

Table 4.3

The difference score between pre-test and post-test at experimental class

NO	Respondent	Pre-test	Post-test
1	APR	40	70
2	ARB	40	76

3	AS	54	70
4	BDR	42	78
5	DA	40	74
6	GWK	38	60
7	HND	40	78
8	IF	56	78
9	JL	40	70
10	JM	52	90
11	MR	40	76
12	MS	50	80
13	MD	68	86
14	MRH	40	70
15	MN	56	78
16	MFS	40	72
17	MF	42	72
18	MNA	40	78
19	MKR	44	70
20	NDP	62	76

21	NR	68	90
22	RM	56	80
23	RAR	50	72
24	RC	56	80
25	SR	58	74
26	SA	68	80
27	SK	46	72
28	SB	40	60
29	YH	40	72
30	AGR	42	74
	TOTAL	∑X=1448	∑X= 2256
N=30	AVERAGE	M= 48	M= 75

From the table 4.1 above showed that the result of students' pre-test score at the experimental class. The data showed the maximum score was 68 and the minimum score was 38. There were three students who got maximum score and there was one student who got

minimum score. The average score of pre-test in experimental class was 48.

From the table 4.2 above showed that the result of students' post-test score at the experimental class. The data showed the maximum score was 90 and the minimum score was 60. There were two student who got maximum score and two students who got minimum score. The average score of post-test in experimental class was 75.

From the table 4.3 showed the difference result of pre-test and post-test at the experimental class. It got the significant improvement after giving treatment using peer tutoring, it was seen from the average of the post-test better than pre-test $48 < 75$.

2. **Control Class**

The writer describes the result of pre-test in the control class by the table as follow:1

Table 4.4

The students' score of pre-test in the control class

No	Respondent	Score
1	AM	50
2	AG	40
3	AS	42

4	AMS	50
5	AA	50
6	AR	40
7	AST	34
8	DAY	50
9	DV	38
10	DPS	52
11	ELY	58
12	GPP	50
13	HN	48
14	IM	50
15	MR	50
16	MS	42
17	MH	44
18	MJI	40
19	MG	50
20	NS	54
21	NM	52

22	ON	40
23	PA	42
24	RR	40
25	RA	46
26	SN	48
27	SWH	40
28	SW	42
29	SM	50
30	SP	40
	TOTAL	$\sum X$= 1384
N= 30	AVERAGE	M= 46

Mean of Pre-test:

$M = \dfrac{\sum X}{N} = \dfrac{1384}{30} = 46$(the mean of pre-test control class is 46)

While the result of post-test in control class got better score. The result of post-test in control class described by table below:

Table 4.5

The students' score of post-test in the control class

No	Respondent	Score
1	AM	60
2	AG	60
3	AS	64
4	AMS	70
5	AA	68
6	AR	60
7	AST	50
8	DAY	62
9	DV	50
10	DPS	68
11	ELY	60
12	GPP	68
13	HN	64
14	IM	60
15	MR	62

16	MS	60
17	MH	58
18	MJI	66
19	MG	66
20	NS	70
21	NM	60
22	ON	64
23	PA	58
24	RR	60
25	RA	60
26	SN	64
27	SWH	54
28	SW	52
29	SM	64
30	SP	50
	TOTAL	$\sum X = 1950$
N= 30	AVERAGE	M= 65

Mean of Post-test:

$$M = \frac{\Sigma X}{N} = \frac{1950}{30} = 65 \text{ (the mean of post-test control}$$

class is 65)

Table 4.6

The difference score between pre-test and post-test at the

control class

No	Respondent	Pre-test	Post-test
1	AM	50	60
2	AG	40	60
3	AS	42	64
4	AMS	50	70
5	AA	50	68
6	AR	40	60
7	AST	34	50
8	DAY	50	62
9	DV	38	50
10	DPS	52	68
11	ELY	58	60

12	GPP	50	68
13	HN	48	64
14	IM	50	60
15	MR	50	62
16	MS	42	60
17	MH	44	58
18	MJI	40	66
19	MG	50	66
20	NS	54	70
21	NM	52	60
22	ON	40	64
23	PA	42	58
24	RR	40	60
25	RA	46	60
26	SN	48	64
27	SWH	40	54
28	SW	42	52
29	SM	50	64

30	SP	40	50
N= 30	TOTAL	$\sum X$=1384	$\sum X$= 1950
	AVERAGE	M= 46	M= 65

From the table 4.4 above showed that the result of students' pre-test score at the control class. The data showed the maximum score was 58 and the minimum score was 34. There was one student who got maximum score and there were one students who got minimum score. The average score of pre-test in control class was 46.

From the table 4.5 above showed that the result of students' post-test score at the control class. The data showed the maximum score was 70 and the minimum score was 50. There were two students who got maximum score and there were two students who got minimum score. The average score of pre-test in control class was 65.

From the table 4.6 above showed the difference result of pre-test and post-test at the control class got the significant improvement after giving treatment without using peer tutoring, it was seen from the average of the post-test better than pre-test $46 < 65$.

B. Data Analysis

1. Experimental Class

The writer analysis the data by comparing students' score in pre-test and post-test in the experimental class. The students' improvement score caused the writer used peer tutoring technique in teaching students reading comprehension. If seen from the students' improvement score, it means that used peer tutoring technique was success in improving students' reading comprehension. The writer describes the students' improvement score of pre-test and post-test at the experimental class by the table below:

Table 4.7

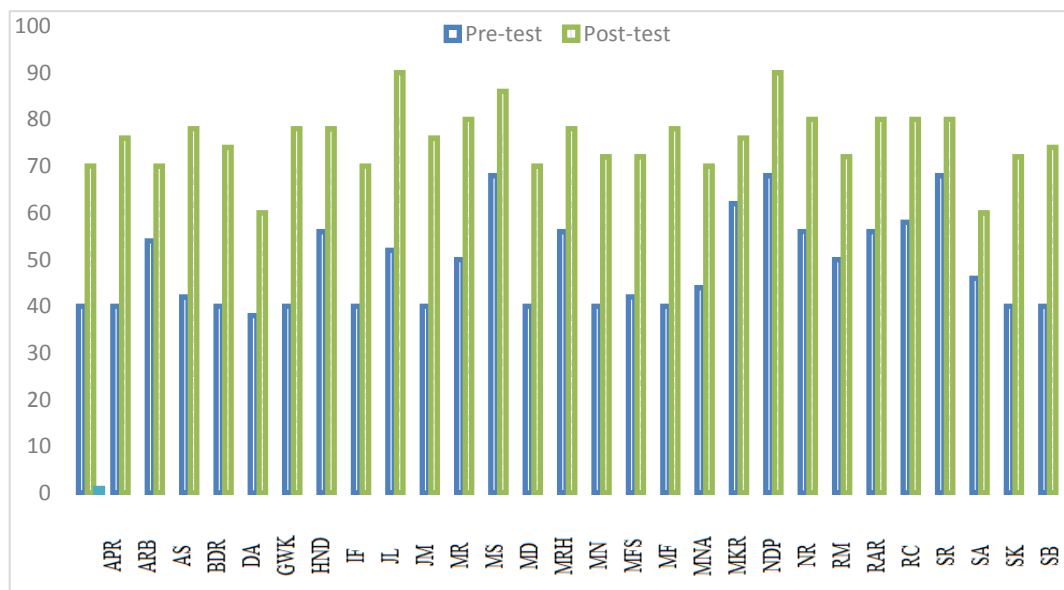***The difference score between pre-test and post-test result of experimental class***

NO	Respondent	Pre-test (X_1)	Post-test (X_2)	Difference $(X_2 - X_1)$
1	APR	40	70	30
2	ARB	40	76	36
3	AS	54	70	16
4	BDR	42	78	36

5	DA	40	74	34
6	GWK	38	60	34
7	HND	40	78	38
8	IF	56	78	22
9	JL	40	70	30
10	JM	52	90	38
11	MR	40	76	36
12	MS	50	80	30
13	MD	68	86	18
14	MRH	40	70	30
15	MN	56	78	22
16	MFS	40	72	32
17	MF	42	72	30
18	MNA	40	78	38
19	MKR	44	70	36
20	NDP	62	76	14
21	NR	68	90	22
22	RM	56	80	24

55

23	RAR	50	72	22
24	RC	56	80	24
25	SR	58	80	22
26	SA	68	80	12
27	SK	46	60	14
28	SB	40	72	32
29	YH	40	74	34
30	AGR	42	74	32
N=30	TOTAL	$\sum X=1448$	$\sum X=2256$	$\sum 812$
	AVERAGE	M= 48	M= 75	

Table 4.7 above showed that the difference score between pre-test and post-test at the experimental class. The difference score was the result from the post-test scores reduced pre-test score. There was significant difference score between pre-test and post-test at the experimental class by the higgest score was 38 and the lowest was 12. The graphic describes the table as follow:

Graphic 4.1

The different score between pre-test and post-test of

experimental class

2. Control Class

The writer analysis the data by comparing students'
score in pre-test and post-test at the control class. This
result describes by the table below:

Table 4.8

The difference score between Pre-test and Post-test result of

control class

No	Respondent	Pre-test (X_1)	Post-Test (X_2)	Difference $(X_2 - X_1)$
1	AM	50	60	10
2	AG	40	60	20
3	AS	42	64	22
4	AMS	50	70	20
5	AA	50	68	18
6	AR	40	60	20
7	AST	34	50	16
8	DAY	50	62	12
9	DV	38	50	12
10	DPS	52	68	16
11	ELY	58	60	8
12	GPP	50	68	18
13	HN	48	64	16

14	IM	50	60	10
15	MR	50	62	12
16	MS	42	60	18
17	MH	44	58	14
18	MJI	40	66	26
19	MG	50	66	16
20	NS	54	70	16
21	NM	52	60	8
22	ON	40	64	24
23	PA	42	64	22
24	RR	40	58	18
25	RA	46	60	14
26	SN	48	60	12
27	SWH	40	54	14
28	SW	42	52	10
29	SM	50	64	16
30	SP	40	50	10
	TOTAL	$\sum X=$ 1384	$\sum X=$ 1950	

N=30	AVERAGE	M= 46	M= 65	∑ 890

Table 4.8 above showed that the difference score between pre-test and post-test at the control class. The difference score was the result from the post-test scores reduced pre-test score. There was significant difference score between pre-test and post-test at the control class by the highest score was 26 and the lowest was 8 The graphic describes the table as follow:
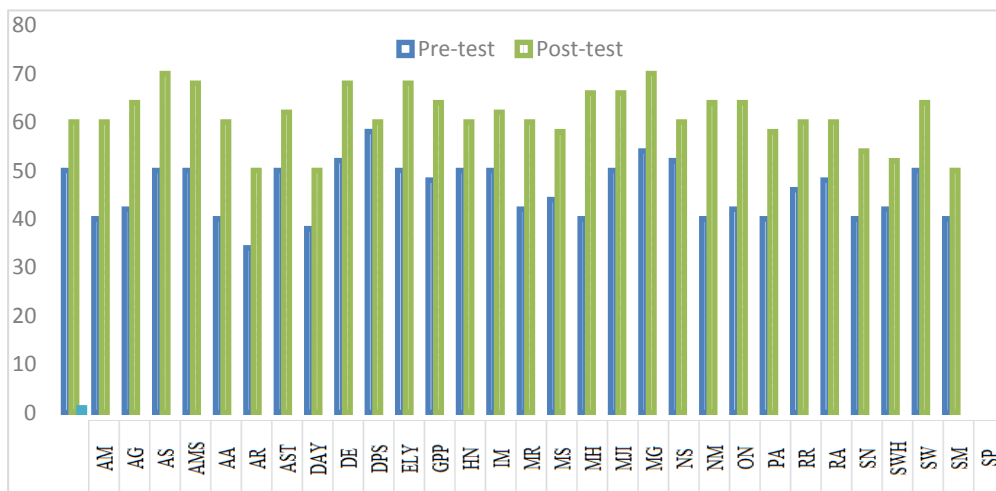
Graphic 4.2

The different score between pre-test and post-test of

experimental class

$$t_0 = \frac{M_1 - M_2}{\left(\frac{\sum x_1^2 + \sum x_2^2}{N_1 + N_2 - 2}\right)\left(\frac{N_1 + N_2}{N_1 \cdot N_2}\right)}$$

Notes:

t_0 = t observation

M_1 = Mean score of the experiment class

M_2 = Mean score of the control class

$\sum x_1^2$ = Sum of square deviation score in experiment class

$\sum x_2^2$ = Sum of square deviation score in control class

N_1 = Number of students of experiment class

N_2 = Number of students of control class

2   = Constant number

df   = Degree of Freedom (df = $N_1 + N_2 - 2$)

Table 4.9

The result calculation of post-test at the experimental class

(X_1^2) and the control class (X_2^2)

No	X_1	X_2	x_1	x_2	x_1^2	x_2^2
1	70	60	-5	-5	25	25
2	76	60	1	-5	2	25
3	70	64	-5	-1	25	1
4	78	70	3	5	9	25

5	74	68	-1	3	1	9
6	60	60	-15	-5	225	25
7	78	50	3	-15	9	225
8	78	62	3	-3	9	9
9	70	50	-5	-15	25	225
10	90	68	15	3	225	9
11	76	60	1	-5	25	25
12	80	68	5	3	25	9
13	86	64	6	-1	36	1
14	70	60	-5	-5	25	25
15	78	62	3	-3	9	9
16	72	60	-3	-5	9	25
17	72	58	-3	-7	9	49
18	78	66	3	1	9	1
19	70	66	-5	1	25	1
20	76	70	1	5	1	25
21	90	60	15	5	225	25
22	80	64	5	-1	25	1

23	72	58	-3	-7	9	49
24	80	60	5	-5	25	25
25	74	60	-1	-5	1	25
26	80	64	-3	-1	9	1
27	72	54	-15	-11	225	121
28	60	52	-3	-13	9	169
29	72	64	-3	-1	9	1
30	74	50	-1	-15	1	225
$\sum$	2256	1950	-7	14	1241	1378

From the table above, the researcher got the data $\sum X_1 = 2556$, $\sum X_2 = 1950$, $\sum x_1^2 = 1241$ $\sum x_2^2 = 1378$ where as $N_1 = 30$ and $N_2 = 30$. After that the writer calculated them based on the t-test formula, the steps as follow:

1. Determine mean of variable X_1 and X_2

    Variable X_1 $M_1 = \frac{\sum x_1}{N_1} = \frac{2556}{30} = 75$

    Variable X_2 $M_2 = \frac{\sum x_2}{N_2} = \frac{1950}{30} = 65$

2. Determine t-test

    $\sum x_1^2 = 1241$

$$\sum x_2^2 = 1378$$

$$\mathrm{df} = N_1 + N_2 - 2 = 30 + 30 - 2 = 58$$

Note :

X_1 = Score Post-test (Experimental Class)

X_2 = Score Post-test (Control Class)

x_1 = X_1 - M_1(Mean X_1)

x_2 = X_2 - M_2 (Mean X_2)

x_1^2 = The Squared Value of x_1

x_2^2 = The Squared Value of x_2

3. Determine t-test

$$t_o = \frac{M_1 - M_2}{\sqrt{\left(\frac{\sum x_1^2 + \sum x_2^2}{N_1 + N_2 - 2}\right)\left(\frac{N_1 + N_2}{N_1 \cdot N_2}\right)}}$$

$$= \frac{75 - 65}{\sqrt{\left(\frac{1241 + 1378}{30 + 30 - 2}\right)\left(\frac{30 + 30}{30 \cdot 30}\right)}} = \frac{10}{\sqrt{\left(\frac{2619}{58}\right)\left(\frac{60}{900}\right)}}$$

$$= \frac{10}{\sqrt{45.155 \times 0{,}067}} = \frac{10}{\sqrt{2.76}}$$

$$= \frac{10}{1.66} = 6.02$$

So after the writer calculates this data based on the formula t-test, the obtained t_o or $t_{observation}$ was 6.02

C. Hypothesis Testing

The data obtained from experimental class and control class were calculated with the assumption as follow:

If $t_0 > t_t$: the alternative hypothesis was accepted. It means there was significant effect of using peer tutoring technique in teaching student's reading comprehension than without using peer tutoring technique. If $t_0 < t_t$: null hypothesis was rejected. It means there was no significant effect of using peer tutoring technique in teaching students' reading comprehension than without it.

From the result of calculation above, it is obtained that the value of t_o ($t_{observation}$) was 6,02, the degree of freedom (df) = 58. In the degree significance 5% = 2,00 in degree of significance 1% = 2,66. After that the writer compared the data with t_t (t table) both in degree significance 5% and 1%. Therefore $t_o : t_t$ = 6,02 > 2,00 in degree of significance 5% and $t_o : t_t$ = 6.02 > 2,66 in degree significance 1%.

The statistic hypothesis states that if t_o is higher than t_t, it shows that H_a(alternative hypothesis) of the result is accepted and H_o(null hypothesis) is rejected. It means that there was an effect of peer tutoring in teaching student's reading comprehension.

D. Interpretation Data

From the result of the research that the mean of pre-test score obtained by students of SMPN 3 Cikande in the class VIII B (experimental class) 48 was higest than class VIII D (control class) 46. The highest score of pre-test in VIII B (experimental class) was 68 and in the class VIII B (control class) was 58. The lowest score of pre-test in class VIII B (experimental class) was 38 and in the class VIII D (control class) was 34. It means that the distribution of score in experimental score was greater than control class.

The mean of post-test score in experimental class was 75 was greater than in control class was 65. The highest score in experimental class was 90 and in control class was 70. The lowest score in experimental class was 60 and in control class was 50. It means that the distribution of score post-test in experimental class was greater than class control.

It can be proved the average score of post-test of students in the experimental class 75 is greater than the average score of pre-test of students in the same class 48. There is an increase of average score of 27 points in the experimental class after being given treatment using peer tutoring technique.

Based on the data obtained from the research of experimental class and control class among average score, t

observation and comparison with t table. The writer summarize that the students taught by using peer tutoring technique has significance effect on students reading comprehension especially on descriptive text than the students taught without using peer tutoring technique. The students who taught by using peer tutoring technique were easily to students reading comprehension in learning especially on descriptive text and the students get good or better scores by using peer tutoring than witout using peer tutoring. it can be seen of the experimental class score is higher than score of control class.