CHAPTER IV

RESULT AND DISCUSSION

A. Data Description

In this chapter, the researcher explains about the result of the research. The researcher will attempt to submit the data as outcomes of research has hold in first grade of SMA Negeri 1 Pandeglang. The researcher takes 66 students as subject of the research. It is divided into two groups. They are 33 students from X MIA 4 as the experimental class and 33 students from MIA 7 as the control class.

The data of this research were collected the score of pre-test and post-test of both, experimental and control class. In giving pre-test and post-test, the researcher asks students to write recount text about their holiday experience. Then the students writing were evaluated by concerning the five components of writing in the text. The components that evaluated are: content, organization (orientation, events, and reorientation), grammar, vocabulary and mechanic. Each component had its score.

After pre-test, the researcher evaluates students writing as the result of the test. The score of pre-test is low especially, in the grammar, organization, vocabulary and mechanic on writing. So, the researcher provides treatment to experimental class, whereas in the control class

there is no specific treatment was given. In the Experimental class, the researcher use metacognitive strategies on writing recount text as the treatment. The treatment was carried out in two meetings. After the treatment was considered sufficient, the researcher conducted a post-test on both classes, experimental and control class. After the researcher gave treatment to the experimental class using metacognitive strategies the score students have significant improved, while the post-test score of control class is no significant improved.

B. The Process of Experimental Class Score

The Score of Pre-test and Post-Test of Experimental Class

Table 4.1

The Result Score of Pre-test and Post-test in Experimental Class

No	Nama	Pre-Test	Post-Test
1	AA	45	66
2	ASR	52	74
3	AA	63	73
4	ARA	57	70
5	AS	71	76
6	AL	39	67
7	AVA	50	75
8	DNK	58	86
9	DO	45	65
10	FS	50	74
11	FRJ	46	76
12	IJ	62	80
13	KM	48	73
14	MPB	62	87
15	MS	50	82
16	MRW	49	55

17	MBR	54	66
18	MNA	47	71
19	NDK	60	74
20	NFR	61	82
21	NVH	53	77
22	NM	68	81
23	RIR	51	60
24	ROS	58	72
25	RSJ	48	84
26	SNA	47	74
27	SN	47	77
28	SF	58	75
29	TGP	50	79
30	TS	61	91
31	VBG	45	75
32	VK	56	91
33	WA	50	75
$\sum X_1$		1761	2483
M_1		53,36	75,24

Mean by formula:

Pre-test

$$M_1 = \frac{\sum X_1}{N_1}$$

$$M_1 = \frac{\sum 1761}{33}$$

$$= 53.36$$

Post-test

$$M_1 = \frac{\sum X_1}{N_1}$$

$$M_1 = \frac{\sum 2483}{33}$$

$$=75.24$$

Note:

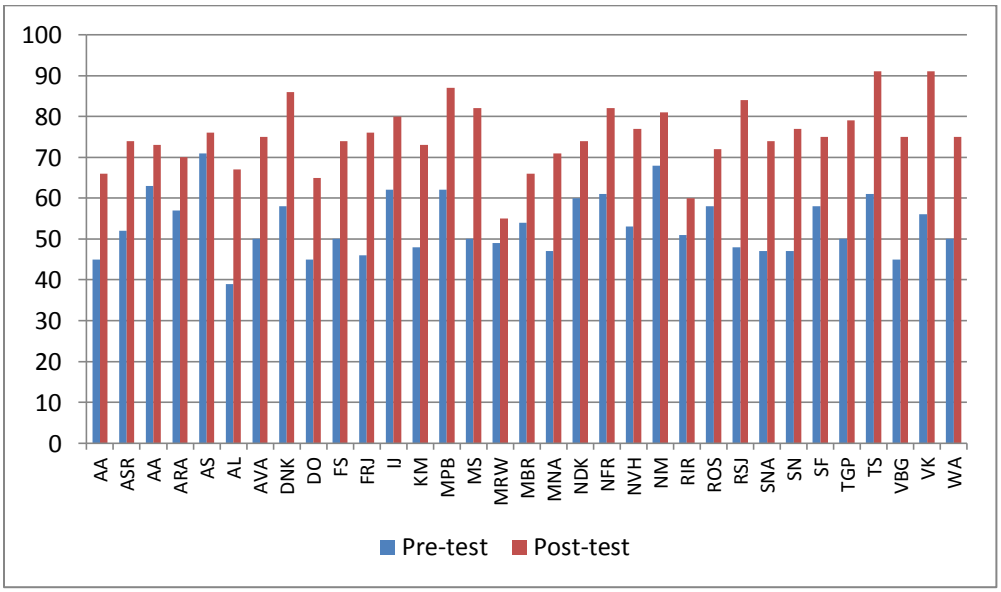
$\sum X_1$: The score of pre-test and post-test experimental class

M_1 : Mean of pre-test and post-test experimental class

N_1 : Numbers of students of experimental class

Based on the data above, it can be seen that the minimum score of the pre-test from experimental class is 39 and the maximum score is 71 with the mean 53.36. Meanwhile, after the researcher gave treatment to the experimental class using metacognitive strategies, the students' score improved. The minimum score of students' post-test is 55 and the maximum score is 91 with the mean score 75.24.

Graphic 4.1
The score pre-test and post-test in Experimental class



C. The Process of Control Class Score

The Score of Pre-test and Post-test of Control Class

Table 4.2

The Result of Pre-test and Post-test in Control Class

No	Nama	Pre-Test	Post-Test
1	ACH	56	62
2	AS	37	56
3	ATF	50	48
4	AF	58	62
5	AH	50	55
6	FF	44	51
7	FR	59	35
8	FA	54	57
9	HAL	48	53
10	HF	48	64
11	IMW	60	67
12	JRS	35	35
13	JGM	60	60
14	MA	49	46
15	MDD	48	49
16	MAHR	59	67
17	MD	38	42
18	MN	52	53
19	NZR	55	65
20	NNA	53	58
21	NRK	45	54
22	PSA	53	56
23	RC	89	90
24	RDS	87	89
25	RNMM	52	69
26	RDPR	51	53
27	RS	51	65
28	SNC	59	68
29	SRZ	50	69

30	SKD	56	59
31	TI	65	70
32	TAR	69	73
33	VO	58	66
$\sum X_2$		1798	1966
M_2		54.48	59.57

Mean by formula :

Pre-test

$$M_2 = \frac{\sum X2}{N2}$$

$$M_2 = \frac{\sum 1798}{33}$$

= 54,48

Post-test

$$M_2 = \frac{\sum X2}{N2}$$

$$M_2 = \frac{\sum 1966}{33}$$

=59,57

Note:

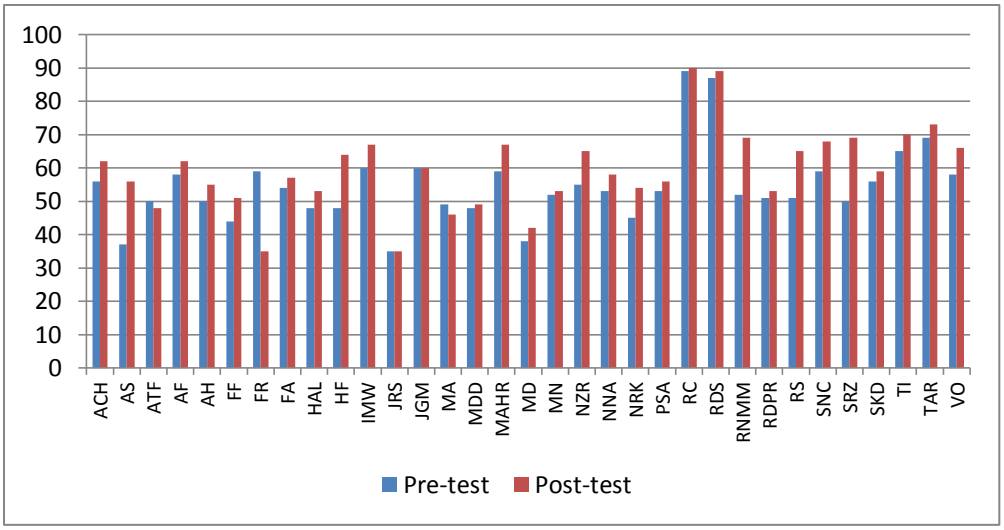
$\sum X_2$: The score of pre-test and post-test control class

M_2 : Mean of pre-test and post-test control class

N_2 : Numbers of students of control class

Based on the data above, it can be seen that the minimum score of the pre-test from experimental class is 35 and the maximum score is 89. Meanwhile, the minimum score of students' post-test is 35 and the maximum score is 90.

Graphic 4.2
The Score Pre-test and Post-test in Control Class



Based on graphic above, it showed that the result of control class did not have the significant improvement, it is seem from average score of post-test that is score of pre-test 59.57 > 54.48. This class also realized can effect improvement but lower than experimental class.

D. Comparison of Post-Test Experimental and Control Class

The data that researcher get from students' pre-test and post-test from both classes were then the researcher analyzed the post-test score by using T-test. T-test is used to know whether there is significant effect of using metacognitive strategies for the student achievement in writing descriptive text. The experimental class is symbolized as variable X and

control class is symbolized as variable Y. T-test formula that used by the researcher with degree of significant 5% and 1%, the steps of doing T-test are describe as follows :

Table 4.3.

The Score of Distribution Frequency

NO	SCORE		X_1	X_2	X_1^2	X_2^2
	X1	X2	$(X1-M_1)$	$(X2-M_2)$		
1	66	62	-9.24	2.43	85.3776	5.9049
2	74	56	-1.24	-3.57	1.5376	12.7449
3	73	48	-2.24	-11.57	5.0176	133.8649
4	70	62	-5.24	2.43	27.4576	5.9049
5	76	55	0.76	-4.57	0.5776	20.8849
6	67	51	-8.24	-8.57	67.8976	73.4449
7	75	35	-0.24	-24.57	0.0576	603.6849
8	86	57	10.76	-2.57	115.7776	6.6049
9	65	53	-10.24	-6.57	104.8576	43.1649
10	74	64	-1.24	4.43	1.5376	19.6249
11	76	67	0.76	7.43	0.5776	55.2049
12	80	35	4.76	-24.57	22.6576	603.6849
13	73	60	-2.24	0.43	5.0176	0.1849
14	87	46	11.76	-13.57	138.2976	184.1449
15	82	49	6.76	-10.57	45.6976	111.7249
16	55	67	-20.24	7.43	409.6576	55.2049
17	66	42	-9.24	-17.57	85.3776	308.7049
18	71	53	-4.24	-6.57	17.9776	43.1649
19	74	65	-1.24	5.43	1.5376	29.4849
20	82	58	6.76	-1.57	45.6976	2.4649
21	77	54	1.76	-5.57	3.0976	31.0249
22	81	56	5.76	-3.57	33.1776	12.7449
23	60	90	-15.24	30.43	232.2576	925.9849
24	72	89	-3.24	29.43	10.4976	866.1249
25	84	69	8.76	9.43	76.7376	88.9249
26	74	53	-1.24	-6.57	1.5376	43.1649
27	77	65	1.76	5.43	3.0976	29.4849

28	75	68	-0.24	8.43	0.0576	71.0649
29	79	69	3.76	9.43	14.1376	88.9249
30	91	59	15.76	-0.57	248.3776	0.3249
31	75	70	-0.24	10.43	0.0576	108.7849
32	91	73	15.76	13.43	248.3776	180.3649
33	75	66	-0.24	6.43	0.0576	41.3449
$\sum$	2483	1966			2054.06	4808.06
Mean	75.24	59.57			62.24	145.70

Note :

X1 : Score post-test (Experimental Class)

X2 : Score post-test (Control Class)

X_1 : X1-M_1 (Mean X1)

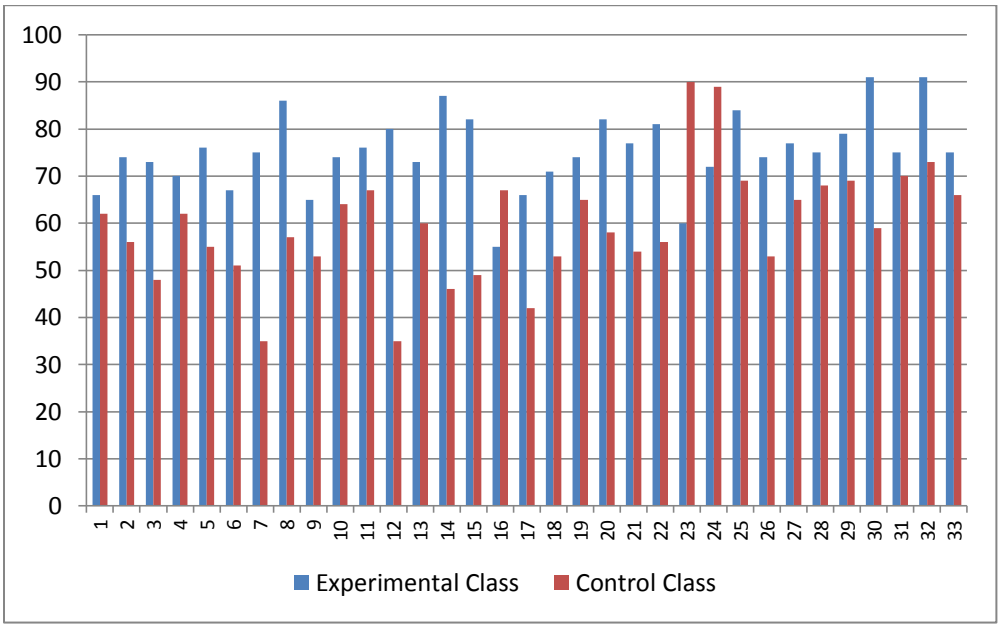
X_2 : X2-M_2 (Mean X2)

X_1^2 : The squared value of X_1

X_2^2 : The squared value of X_2

Graphic 4.3

The Score of Distribution Frequency



According to the graphic above the experimental class : 2483 that higher than score of control class : 1966. This score show that experimental class and control class had different value. The experimental class was higher than the control class.

From the table above, the researcher also got the data $\sum X1 = 2483$, $\sum X2 = 1966$, $\sum X1^2 = 2054.06$, $\sum X2^2 = 4808.06$, where as N1 = 33 and N2 = 33

From the data above, the researcher use the data for doing normality test by the formula as follows :

Table 4.4
Assistant Table for Experimental Group

NO	X	F	FX	X_1	X^2	FX^2
1	55	1	55	-20.24	409.6576	409.6576
2	60	1	60	-15.24	232.2576	232.2576
3	65	1	65	-10.24	104.8576	104.8576
4	66	2	132	-9.24	85.3776	170.7552
5	67	1	67	-8.24	67.8976	67.8976
6	70	1	70	-5.24	27.4576	27.4576
7	71	1	71	-4.24	17.9776	17.9776
8	72	1	72	-3.24	10.4976	10.4976
9	73	2	146	-2.24	5.0176	10.0352
10	74	4	296	-1.24	1.5376	6.1504
11	75	4	300	-0.24	0.0576	0.2304
12	76	2	152	0.76	0.5776	1.1552
13	77	2	154	1.76	3.0976	6.1952
14	79	1	79	3.76	14.1376	14.1376
15	80	1	80	4.76	22.6576	22.6576
16	81	1	81	5.76	33.1776	33.1776
17	82	2	164	6.76	45.6976	91.3952
18	84	1	84	8.76	76.7376	76.7376
19	86	1	86	10.76	115.7776	115.7776
20	87	1	87	11.76	138.2976	138.2976
21	91	2	182	15.76	248.3776	496.7552
	Total	33	2483			2054.061
	Mean		75.24			
	SD		7.9			

Counting standard deviation of experiment group (X1) by using formula as follows:

$$SD = \sqrt{\frac{\Sigma FX^2}{\Sigma F}}$$

$$SD = \sqrt{\frac{2054.061}{33}}$$

$$SD = \sqrt{62.24}$$

$SD = 7.9$

The data above are used to test of normality by using Liliefors method as follows:

Table 4.5

Normality Test of Experimental Group.

No	X1	Z	F(Z)	S(Z)	(F(Z)-S(Z))
1	55	-2.56	0.0052	0.03	-0.0248
2	60	-1.98	0.0239	0.06	-0.0361
3	65	-1.29	0.0985	0.09	0.0085
4	66	-1.17	0.121	0.12	0.001
5	66	-1.17	0.121	0.15	-0.029
6	67	-1.04	0.1492	0.18	-0.0308
7	70	-0.66	0.2546	0.21	0.0446
8	71	-0.54	0.2946	0.24	0.0546
9	72	-0.41	0.3409	0.27	0.0709
10	73	-0.28	0.3897	0.30	0.0897
11	73	-0.28	0.3897	0.33	0.0597
12	74	-0.16	0.4364	0.36	0.0764
13	74	-0.16	0.4364	0.39	0.0464
14	74	-0.16	0.4364	0.42	0.0164
15	74	-0.16	0.4364	0.45	-0.0136
16	75	-0.03	0.488	0.48	0.008
17	75	-0.03	0.488	0.51	-0.022
18	75	-0.03	0.488	0.54	-0.052
19	75	-0.03	0.488	0.57	-0.082
20	76	0.09	0.4641	0.60	-0.1359
21	76	0.09	0.4641	0.63	-0.1659
22	77	0.22	0.4329	0.66	-0.2271
23	77	0.22	0.4329	0.69	-0.2571
24	79	0.47	0.3192	0.72	-0.4008
25	80	0.60	0.2742	0.75	-0.4758
26	81	0.73	0.2327	0.78	-0.5473
27	82	0.85	0.1968	0.81	-0.6132
28	82	0.85	0.1968	0.84	-0.6432
29	84	1.10	0.4602	0.87	-0.4098
30	86	1.36	0.0869	0.90	-0.8131
31	87	1.49	0.0681	0.93	-0.8619
32	91	1.99	0.0233	0.96	-0.9367
33	91	1.99	0.0233	1	-0.9767

From computation above, it can be concluded that mean score is 75.24 and standard deviation is 7.9. Moreover, based on assistant table showed that the L_o score (-0.002) < L_t (0.161). It means that is the sample data of experimental group has normal distribution and can be used for research data.

In addition, for control group, the table below shows the calculation of normality test as follows:

Table 4.6
Assistant Table for Control Group

NO	**X**	**F**	**FX**	$\mathbf{X_2}$	$\mathbf{X^2}$	$\mathbf{FX^2}$
1	35	2	70	-24.57	603.6849	1207.37
2	42	1	42	-17.57	308.7049	308.7049
3	46	1	46	-13.57	184.1449	184.1449
4	48	1	48	-11.57	133.8649	133.8649
5	49	1	49	-10.57	111.7249	111.7249
6	51	1	51	-8.57	73.4449	73.4449
7	53	3	159	-6.57	43.1649	129.4947
8	54	1	54	-5.57	31.0249	31.0249
9	55	1	55	-4.57	20.8849	20.8849
10	56	2	112	-3.57	12.7449	25.4898
11	57	1	57	-2.57	6.6049	6.6049
12	58	1	58	-1.57	2.4649	2.4649
13	59	1	59	-0.57	0.3249	0.3249
14	60	1	60	0.43	0.1849	0.1849
15	62	2	124	2.43	5.9049	11.8098
16	64	1	64	4.43	19.6249	19.6249
17	65	2	130	5.43	29.4849	58.9698
18	66	1	66	6.43	41.3449	41.3449
19	67	2	134	7.43	55.2049	110.4098
20	68	1	68	8.43	71.0649	71.0649
21	69	2	138	9.43	88.9249	177.8498
22	70	1	70	10.43	108.7849	108.7849
23	73	1	73	13.43	180.3649	180.3649
24	89	1	89	29.43	866.1249	866.1249

25	90	1	90	30.43	925.9849	925.9849
	Total	33	1966			4808.062
	Mean		59.57			
	SD		7.7			

Counting standard deviation of control group (X2) by using formula as follows:

$$SD = \sqrt{\frac{\Sigma FX^2}{\Sigma F}}$$

$$SD = \sqrt{\frac{1966}{33}}$$

$$SD = \sqrt{59.57}$$

$$SD = 7.7$$

Table 4.7
The Normality Test of Control Group.

No	X2	Z	F(Z)	S(Z)	(F(Z)-S(Z))
1	35	-3.19	0.0007	0.03	-0.0293
2	35	-3.19	0.0007	0.06	-0.0593
3	42	-2.28	0.0113	0.09	-0.0787
4	46	-1.76	0.0392	0.12	-0.0808
5	48	-1.50	0.0668	0.15	-0.0832
6	49	-1.37	0.0853	0.18	-0.0947
7	51	-1.11	0.4562	0.21	0.2462
8	53	-0.85	0.1894	0.24	-0.0506
9	53	-0.85	0.1894	0.27	-0.0806
10	53	-0.85	0.1894	0.30	-0.1106
11	54	-0.72	0.2358	0.33	-0.0942
12	55	-0.59	0.2776	0.36	-0.0824
13	56	-0.46	0.3228	0.39	-0.0672
14	56	-0.46	0.3228	0.42	-0.0972
15	57	-0.33	0.3707	0.45	-0.0793
16	58	-0.20	0.4207	0.48	-0.0593
17	59	-0.07	0.4721	0.51	-0.0379
18	60	0.05	0.4801	0.54	-0.0599
19	62	0.31	0.3783	0.57	-0.1917

20	62	0.31	0.3783	0.60	-0.2217
21	64	0.57	0.2843	0.63	-0.3457
22	65	0.70	0.2061	0.66	-0.4539
23	65	0.70	0.2061	0.69	-0.4839
24	66	0.83	0.2033	0.72	-0.5167
25	67	0.96	0.1685	0.75	-0.5815
26	67	0.96	0.1685	0.78	-0.6115
27	68	1.09	0.1379	0.81	-0.6721
28	69	1.22	0.1314	0.84	-0.7086
29	69	1.22	0.1314	0.87	-0.7386
30	70	1.35	0.0885	0.90	-0.8115
31	73	1.74	0.0418	0.93	-0.8882
32	89	3.82	0.0001	0.96	-0.9599
33	90	3.95	0	1	-1

From computation above, it can be concluded that mean score is 59.57 and standard deviation is 7.7. Moreover, based on assistant table showed that the L_o score (-0.0379) < L_t (0.161). It means that is the sample data of control group has normal distribution and can be used for research data.

After get the data from pre-test and post-test, the researcher analysed it by using statistic calculation of T-test formula with the degree of significant 5% and 1% , the formula as follows:

1. Determine mean variable X1 and X2

Variable X1

$$M_1 = \frac{\sum X_1}{N_1}$$

$$M_1 = \frac{\sum 2483}{33}$$

$$= 75.24$$

Variable X2

$$M_2 = \frac{\sum X2}{N2}$$

$$M_2 = \frac{\sum 1966}{33}$$

$$= 59.57$$

2. Determine T-test

$$t_o = \frac{M_1 - M_2}{\sqrt{\left(\frac{\sum X_1^2 + \sum X_2^2}{N_1 + N_2 - 2}\right)\left(\frac{N_1 + N_2}{N_1 . N_2}\right)}}$$

$$t_o = \frac{75.24 - 59.57}{\sqrt{\left(\frac{2054.06 + 4808.06}{33 + 33 - 2}\right)\left(\frac{33 + 33}{33.33}\right)}}$$

$$t_o = \frac{75.24 - 59.57}{\sqrt{\left(\frac{2054.06 + 4808.06}{33 + 33 - 2}\right)\left(\frac{33 + 33}{33.33}\right)}}$$

$$t_o = \frac{15.67}{\sqrt{\left(\frac{6862.12}{64}\right)\left(\frac{66}{1089}\right)}}$$

$$t_o = \frac{15.67}{\sqrt{(107.22)(0.06)}}$$

$$t_o = \frac{15.67}{\sqrt{6.43}}$$

$$t_o = \frac{15.67}{2.54}$$

$$t_o = 6.17$$

Note :

M_1 = The average score of experimental class (Mean X1)

M_2 = The average score of control class (Mean X2)

$\sum X_1^2$ = Sum of the squared deviation score of experimental class

$\sum X_2^2$ = Sum of the squared deviation score of control class

N_1 = The number of student of experimental class

N_2 = The number of student of control class

2 = Constant number

3. Degree of Freedom

df = N1+ N2-2

= 33+33-2

= 64

The researcher uses the closer df from 64. In degree of significance 5% from 64 t_t = 1.67 and in degree of significance 1% from 64 t_t = 2.39.

According to the result of statistic calculation, it is obtained that the score of t_o = 6.17 > t_t = 1.67 in degree of significance 5%. The score of t_o = 6.17 > t_t = 2.39 in degree of significance 1%. To prove the hypothesis, the data obtained from the experimental class is calculated by using T-test formal with assumption as follow:

If $t_{observation} > t_{table}$: The alternative hypothesis is accepted. It means there is a significant effectiveness of metacognitive strategies in writing recount text.

If $t_{observation} < t_{table}$: The alternative hypothesis is rejected. It means there is no significant effectiveness of metacognitive strategies in writing recount text.

E. Interpretation Data

From the result of pre-test and post-test in experimental class, the researcher can be concluded that from the lowest score in pre-test is 39 and the maximum score is 71. After researcher conducted treatment of metacognitive strategies in writing recount text and also conducted post-test. The lowest score in post-test is 55 and the highest score is 91.

Before deciding the result of hypothesis, the researcher proposes interpretation towards with procedure as follow:

a. H_a : $t_{observation} > t_{table}$ = It means there is a significant effectiveness of metacognitive strategies on writing recount text.
b. H_o : $t_{observation} < t_{table}$ = It means there is no significant effectiveness of metacognitive strategies on writing recount text.

Based on the result above, the value of $t_{observation}$ is bigger than $t_{table.}$ $t_{observation} = 6.17 > t_{table.} = 1.67$. $t_{observation} = 6.17 > t_{table.} = 2.39$, so H_o is rejected and H_a is accepted.

From the result above, the researcher give conclusion that it means there is a significant effectiveness of metacognitive strategies

on writing recount text. It can be seen that the student got better achievement by metacognitive strategies. This could be seen after comparing the score of pre-test and post-test.

According to the data obtained from control and experimental class among the average scores, and t observation, the researcher summarizes that teaching recount text through metacognitive strategies has significant effectiveness toward students' writing because the purpose of this strategy was to create the class be active and the students' more have critical thinking. Beside that the students please be understand between contents and what students write.

The result of the research show that the experimental class (the students who are taught using metacognitive strategies in writing) has the mean value (75.24), meanwhile the control class (the students who are not using metacognitive strategies in writing) has the mean value (59.57). it can be conclude that the achievement score of experimental class is higher than the control class. The following was the table of ore-test and post-test students' average score.

Table 4.8

The Pre-Test and Post-Test Students' Average of Experimental Class and Control Class.

Class	The Average of Pre-Test	The Average of Post-Test
Experimental	53.36	75.24
Control	54.48	59.57

According to the result of pre-test and post-test above, it could be concluded:

Metacognitive strategy was effective to use in writing recount text in the first grade of SMAN 1 Pandeglang. It could be seen from the result of analysis by using T-test formula:

The first, achievement of writing recount text of experimental class and control class before treatment are equal. It can be seen from the mean of the pre-test of experimental class (53.36) and the mean of the control class (54.48) before treatment. There is no significant difference in students achievement between experimental and control class. Moreover, the score of control class is higher than experimental class before treatment.

Second, achievement of writing recount text of experimental class after treatment was better than experimental class achievement before treatment. It could be seen from the mean of post-test in the experimental class (75.24) is higher than the pre-test of the experimental class (53.36). there is an significant difference in students' writing achievement in experimental class.

Next, the achievement of writing recount text of control class after learning process without metacognitive strategies is higher than control class before learning process. It could be seen from the mean of the post-test of control class (59.57) is higher than the mean of pre-test of control class (54.48) after the learning process, but there is nothing significant value difference between pre-test and post-test of control class.

Moreover, based on the data, the achievement of writing recount text of experimental class after treatment is better than control class after treatment. It could be seen from the mean of post-test of the experimental class (75.24) is higher than mean of post-test of the control class (59.57) after the treatment.

Last, the case in both groups is the same that there is an improvement in each group's cognitive achievement. However, the improvement on control class is not as much as on the experimental

class. It is convinced by the statistical result of the hypothesis test. The test by mean of T-test formula shown that $t_o = 6.17 > t_{table.} = 1.67$. $t_{observation} = 6.17 > t_{table.} = 2.39$, with df = 33+33-2 =64. From the result of calculation T-test = 6.17. If compared between t_o and t_{table}, $t_o > t_{table}$. It means H_o is rejected and H_a is accepted. There is a significance difference of average score from pre-test and post-test of experimental class. From the calculation of interaction experimental class and control class, there was a different between students who taught by using metacognitive strategies and students who taught by not using metacognitive strategies.

So, it could be concluded that metacognitive strategies is effective to facilitate students' ability and understanding on recount text in experimental group. It could be seen at mean value of both groups. There is significant difference in the students' writing achievement between experimental and control group.