CHAPTER IV

RESEARCH FINDING AND DISCUSSION

A. Presentation of Data

This research was conducted in SMP Negeri 1 Pademawu in academic year of 2021/2022. To conducted this research, the researcher takes two classes as the sample of research. The researcher takes VIII D which has 29 students as the experimental class and VIII C which has 32 students as the control class. Therefore, the total of the sampel is 61. In collecting the data, the researcher used essay test as instrument of the research. The researcher has gave pre-test and post-test in class. To determin the level of students' achievement, test scores are interpreted according to the table on the following criteria.¹

VALUE	GRADE	Level Of Achievement
80-100	А	Very Good
66-79	В	Good
56-65	С	Fair
40-55	D	Poor

 Table 4.1. Classification of Students' Achievement

¹Suharsimi, Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik* (Jakarta: rineka cipta.2006). 245

<39	Е	Fail

1. Data Presentation of The Writing Test From The Pre-Test

The researcher used the result of the test from both classes; control group and experimental group. Pre-test is done to get the data from the students before giving treatment. By doing pre test, the researcher want to know the students' achievement in writing skill without using clustering technique. The researcher ask the students to write descriptive text about animal (pet). Then, post-test is done to get the data after giving treatment. Here, the steps that the researcher did when gave the treatment by using clustering as a technique to the students' in writing skill.

- a. Stating the subject in a few words in the center of a blank sheet of paper.
- b. Then, put the ideas in boxes or circles around the subject
- c. And draw lines to connect them to each other and to the subject.
- d. Put minor ideas or details in smaller boxes or circles, and use connecting lines to show how they relate as well.
- e. Then, the researcher ask the student to make descriptive text about animal (pet) with minimal one paragraph.The analysis of pre-test and post-test of control group experimental group and done by students can be show below.

Table 4.2

No	Experimental Group	Score	No	Control Group	Score
1	S.1	70	1	s.1	69
2	S.2	76	2	s.2	70
3	S.3	70	3	s.3	60
4	S.4	70	4	s.4	80
5	S.5	65	5	s.5	65
6	S.6	64	6	s.6	60
7	S.7	85	7	s.7	70
8	S.8	70	8	s.8	69
9	S.9	70	9	s.9	65
10	S.10	70	10	s.10	65
11	S.11	70	11	s.11	60
12	S.12	70	12	s.12	65
13	S.13	70	13	s.13	65
14	S.14	65	14	s.14	65
15	S.15	70	15	s.15	60
16	S.16	70	16	s.16	65
17	S.17	70	17	s.17	65
18	S.18	68	18	s.18	65
19	S.19	75	19	s.19	60
20	S.20	70	20	s.20	60
21	S.21	70	21	s.21	65
22	S.22	70	22	s.22	56
23	S.23	66	23	s.23	56
24	S.24	70	24	s.24	60
25	S.25	60	25	s.25	65
26	S.26	75	26	s.26	65
27	S.27	60	27	s.27	65
28	S.28	78	28	s.28	65
29	S.29	65	29	s.29	65
			30	s.30	65
			31	s.31	65
			32	s.32	65

The result of writing in Pre-Test

The total students of experimental group is 29 and the total students of control group is 32. From the data above shown the highest score of pre-test in experimental group is 85 and control group is 80. The lowest score of pre-test in experimental is 60 group and control group is 56.

The researcher conducted the pre-test in control and experimental group on 7th October, 2021. The pre-test was conduct before giving treatment for experimental group. The question of pre-test is the same for control and experimental group.

Chart 1



The result of Pre-Test in Experimental and Control Group

The chart above shows the result of pre-test in the experimental group and control group. There was no student who are in fail category between experimental and control group. In the poor category, there was no student from experimental and control group. The students who belong to the fair category are 6 students from experimental group and 27 students from control group. In good category there are 22 students from experimental group and 4 students from control group. And the last very good category there are 1 students from experimental and control group.

2. Data Presentation of The Writing Test From The Post-Test

Table 4.3

No	Experimental Group	Score	No	Control Group	Score
1	S.1	72	1	s.1	70
2	S.2	78	2	s.2	70
3	S.3	72	3	s.3	60
4	S.4	72	4	s.4	80
5	S.5	70	5	s.5	65
6	S.6	65	6	s.6	60
7	S.7	86	7	s.7	70
8	S.8	75	8	s.8	69
9	S.9	75	9	s.9	65
10	S.10	72	10	s.10	65
11	S.11	72	11	s.11	60
12	S.12	75	12	s.12	65
13	S.13	72	13	s.13	65
14	S.14	70	14	s.14	65
15	S.15	78	15	s.15	60
16	S.16	78	16	s.16	65
17	S.17	78	17	s.17	65
18	S.18	70	18	s.18	65
19	S.19	75	19	s.19	60
20	S.20	70	20	s.20	60
21	S.21	70	21	s.21	70
22	S.22	70	22	s.22	56
23	S.23	79	23	s.23	60
24	S.24	70	24	s.24	60
25	S.25	86	25	s.25	70
26	S.26	86	26	s.26	70
27	S.27	60	27	s.27	70
28	S.28	78	28	s.28	65
29	S.29	70	29	s.29	65
		70	30	s.30	65
			31	s.31	65
			32	s.32	70

The result of writing in Post-Test

The total students of experimental group are 29 and the students of control group are 32. From the data above shown the highest score of post-test in experimental group is 86 and control group is 80. The lowest score of post-test in experimental group is 60 and control group is 56.

The researcher conducted the post-test in experimental and control group on 21th October, 2021. And the post-test was conduct after giving

treatment for experimental group. The questions of post-test is same among the experimental and control group.

Chart 2



The Result of Post-Test in Experimental and Control Group

The chart above shows the result of post-test in experimental and control group. There was no student who are in fail category in both of experimental and control group. In the poor category, there were no student from experimental and control group. In fair category there are 2 students from experimental group and 22 students from control group. The students who belong to the good category are 25 students from experimental group and 9 students from control group. The last in very good category, there are 2 students from experimental group.

3. The Writing Result Of Experimental Group

To get the answer of research problem "Is there an influence of clustering technique on the student's achievement in writing descriptive text?" the researcher did the test of their writing in experimental group. Experimental group was the group which was gave the treatment by the researcher. In this the researcher taught writing material used clustering technique in teaching learning. In this discussion, the researcher calculated the pre-test and post-test result of experimental group. The researcher calculates the result by formula as follows.

a. Central Tendency

1) Mean

a) Pre-test

$$Me = \frac{\sum x}{n}$$
$$Me = \frac{2022}{29}$$

Me = 69,72.

The mean score of experimental group is 69,72. it can be categorized as good.

b) Post-test

$$Me = \frac{\sum x}{n}$$
$$Me = \frac{2141}{29}$$
$$Me = 73.82$$

The mean score of experimental group is 73,82. It can be categorized as good.

2) Median

The median of pre-test is 70 and post-test is 72.

3) Mode

The mode of pre-test is 70 and post-test is 70.

- b. Measurement of Dispersion
 - 1) Standard Deviation
 - a) Pre-test

$$SD = \sqrt{\frac{\sum (x_i - \tilde{x})^2}{n - 1}}$$
$$SD = \sqrt{\frac{703,37}{28}}$$
$$SD = \sqrt{25,12}$$
$$SD = 5,01$$

The standard deviation of pre-test is 5,01..

b) Post-test

$$SD = \sqrt{\frac{\sum(x_i - \tilde{x})^2}{n-1}}$$
$$SD = \sqrt{\frac{1.048,9}{28}}$$
$$SD = \sqrt{37,46}$$
$$SD = 6,12$$

The standard deviation of post-test is 6,12.

2) Variance

a) Pre-test

$$S^{2} = \frac{\sum (x_{i} - \tilde{x})^{2}}{n - 1}$$
$$S^{2} = \frac{703,37}{28}$$
$$S^{2} = 25,12$$

Variance of pre-test experimental group is 25,12.

b) Post-test

$$S^{2} = \frac{\sum (x_{i} - \tilde{x})^{2}}{n - 1}$$
$$S^{2} = \frac{1.048,9}{28}$$
$$S^{2} = 37,46$$

Variance of post-test experimental group is 37,46.

- 3) Range
 - a) Pre-test
 - $R = x_t x_r$ R = 85-60R = 25

Range of pre-test in experimental group is 25.

- b) Post-test
 - $R = x_t x_r$ R = 86-60R = 26

Range of post-test in experimental group is 26.

From the data computation above between pre-test, the highest score of pre-test (H) is 85, the lowest score (L) is 40, the range (R) is 25, the median (Me) is 70, the mode (Mo) is 70, the mean (M) is 69,72, the standard deviation (SD) is 5,01, the variance (S^2) is 25,12 and the total score (T) is 2022. Meanwhile, the highest (H) score of post-test is 86, the lowest (L) score is 60, the range (R) is 26, the median (Me) is 72, the mode (Mo) is 70 the mean (M) is 73,82, the standard deviation (SD) is 612, the variance (S^2) is 37,46 and total score (T) is 2141. Below is the table of writing result of experimental group.

Table 4.4

Control Group	Pre-Test	Post-Test
Sum	2022	2141
Mean	69,72	73,82
Median	70	72
Mode	70	70
High Score	85	86
Low Score	60	60
Standard Deviation	5,01	6,12

Variance	25,12	37,46
Range	25	26

Table 4.5

Interval	Interpretation	Рі	re-Test	Post-Test		
Interval		F	Percentage	F	Percentage	
80-100	Very Good	1	3,4%	2	6,9%	
66-79	Good	22	75,9%	25	86,2%	
56-65	Fair	6	20,7%	2	6,9%	
40-55	Poor	0	0,0%	0	0,0%	
<39	Fail	0	0,0%	0	0,0%	
Σ		29	100%	29	100%	

Degree Mastery of Pre-Test and Post-Test Score of Experimental Group

Based on the table above, in pre-test of experimental group there was no student who are in fail and poor interpretation, 6 students (20,7%) is fair interpretation, 22 students (75,9%) is good interpretation and 1 student(3,4%) is very good interpretation. In post-test that there was no student who are in fail and poor interpretation, 2 students (6,9%) is fair interpretation, 25 students (86,2%) is good interpretation, 2 students (6,9%) is belonged to very good interpretation.

4. The Writing Result of Control Group

To get the answer of the research problem "Is there an influence of clustering technique on the student's achievement in writing descriptive text?" the researcher did the test to their writing of control group. Control

group was the group which was not given the treatment by researcher. In this group, the researcher taught writing material without used clustering technique in teaching learning. In discussion, the researcher calculated the pre-test and post-test result of control group. And the researcher calculates the result by formula as follows.

a. Central Tendency

1) Mean

- a) Pre-test
 - $Me = \frac{\sum x}{n}$ $Me = \frac{2060}{32}$ Me = 64,37

The mean score of control group is 64,37. It can be categorized as fair.

- b) Post-test
 - $Me = \frac{\sum x}{n}$ $Me = \frac{2090}{32}$ Me = 65,31

The mean score of control group is 65,31. It can be categorized as fair.

2) Median

The median of pre-test is 65 and post-test 65.

3) Mode

The mode of pre-test is 65 and post test is 65.

- b. Measurement of Deviation
 - 1) Standard Deviation
 - a) Pre-test

$$SD = \sqrt{\frac{\sum (x_i - \tilde{x})^2}{n - 1}}$$
$$SD = \sqrt{\frac{631,27}{31}}$$
$$SD = \sqrt{20,36}$$
$$SD = 4,51$$

The standard deviation of pre-test is 4,51.

b) Post-test

$$SD = \sqrt{\frac{\sum (x_i - \tilde{x})^2}{n-1}}$$
$$SD = \sqrt{\frac{718,86}{31}}$$
$$SD = \sqrt{23,19}$$
$$SD = 4,81$$

The standard deviation of post-test is 4,81.

- 2) Variance
 - a) Pre-test

$$S^{2} = \frac{\sum (x_{i} - \tilde{x})^{2}}{n - 1}$$
$$S^{2} = \frac{631,27}{31}$$
$$S^{2} = 20,36$$

Variance of pre-test control group is 20,36.

b) Post-test

$$S^{2} = \frac{\sum (x_{i} - \tilde{x})^{2}}{n - 1}$$
$$S^{2} = \frac{718,86}{31}$$
$$S^{2} = 23,19$$

Variance of post-tst control group is 23,19.

- 3) Range
 - a) Pre-test $R = x_t - x_r$ R = 80-56 R = 24Range of pre-test in control group is 24.
 - b) Post-test
 - $R = x_t x_r$ R = 80-56R = 24

Range of post-test in control group is 24.

From the data computation above between of pre-test, the highest (H) score of pre-test is 80, the lowest (L) score is 65, the range (R) is 24, the median (Me) is 65, the mode (Mo) is 65, the mean (M) is 64,37 the standard deviation (SD) is 4,51 the variance (S^2) is 20,36. And the total score (T) is 2022. Meanwhile, the higher (H) score of post-test is 80, the

lowest (L) is 56, the range (R) is 40, the median (Me) 65, the mode (Mo) is 65, the mean (M) is 65,31, the standard deviation (SD) score is 4,81, the variance (S^2) is 23,19. And the total (T) score is 2090. Below is the table of writing result of control group.

Table 4.6

Pre-Test	Post-Test
2022	2090
64,37	65,31
65	65
65	65
80	80
56	56
4,51	4,81
20,36	23,19
24	24
	2022 64,37 65 65 80 56 4,51 20,36

Descriptive Statistic of Pre-Test and Post-Test in Control Group

Table 4.7

Degree Mastery of Pre-Test and Post-Test Scoreof Control Group

Interval	Interpretation	Рі	re-Test	Post-Test		
interval	interpretation	F	Percentage	F	Percentage	
80-100	Very Good	1	3,13%	1	3,1%	
66-79	Good	4	12,50%	30	93,8%	
56-65	Fair	27	84,38%	1	3,1%	
40-55	Poor	0	0,00%	0	0,0%	
<39	Fail	0	0,00%	0	0,0%	
Σ		32	100,00%	32	100%	

Based on the table above, in pre-test of control group there was no student who are in fail and poor interpretation, 27 students (84,38%) is fair interpretation, 4 students (12,50%) is good interpretation, 1 student (3,13%) is very good interpretation. In post-test there was no student who are in fail and poor interpretation, 1 student (3.13%) is fair interpretation, 30 students (93,8%) is good interpretation, 1 student (3,13%) is very good interpretation.

Table 4.8

The Writing Result Post-Test of Experimental and Control Group

Group	Н	L	Me	Mo	R	SD	Μ	V	Т
Experimental	86	40	72	70	26	6,12	73,82	37,46	2141
Control	80	56	65	65	24	4,81	65,31	23,19	2090

Notes :

H : The highest score

SD : Standard deviation

L : The lowest score

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M : Mean
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Me : The median

V : Variance

Mo : The modus

T : The total score

R : The range

The researcher described that there are differences score of posttest between experimental group which did get treatment using Clustering Technique and control group which did not get treatment using clustering technique. The table above shows that the highest (H) score of experimental group 86 and the control group is 80, the lowest (L) score of experimental group 60 and 56 from control group, the median (Me) of experimental group is 72 and control group is 65, the mode (Mo) of experimental group is 70 and control group.

While the Mean (M) of experimental group is 73,82 and 65,31 from control group, the range (R) experimental group is 26 and control is 24, the variance (S^2) from experimental group is 37,46 and 23,19 from control group. While standard deviation (SD) from experimental group is 6,12 and control group is 4,81. While the total scores from experimental group is 2141 and from experimental group is 2090.

5. Test Normality Using Chi Square (X²)

The computation of test of normality was done by using Chi-Square formula that the data is normal. It is done by comparing the normal curve of collected data and the standard normal curve.² The calculation of normality test as follows:

a. Post-Test Experimental Group

 $Class interval = \frac{the \ higher \ score-the \ lowest \ score}{6 \ (number \ of \ class \ interval)}$

$$=\frac{85-60}{6} = 4,16$$
 (overall to 5)

Table 4.9

Interval of Post-Test Experimental Group

INTERVAL	fo	fh	fo-fh	fo-fh^2	fo-fh^2/fh
60-66	2	2	0,0	0,0	0
67-73	13	15	-2	4,0	0,27
74-80	12	11	1	1,0	0,09
81-87	2	1	1	1,0	1
88-94	0	0	0	0,0	0
95-101	0	0	0	0,0	0
SUM	29	29	0,0	6,0	1,36

The table above shows that the result is 1.36. The researcher used the Chi-Square table at the significance of 5% with 29 samples was 11.07. It shows that the result of manual calculation less than chi-square table (1.36 < 11.07). Therefore, the data is normal.

b. Post-Test Control Group

²Sugiyono, *Metode Penelitian Kuantitatif dan Kualitatif, dan R &D* (Bandung: Alfabeta CV,2015),79.

 $Class interval = \frac{the \ higher \ score-the \ lowest \ score}{6 \ (number \ of \ class \ interval)}$

$$=\frac{80-56}{6}=4$$

Table 4.10

Interval of Post-Test Control Group

INTERVAL	fo	fh	fo-fh	fo-fh^2	fo-fh^2/fh
55-60	2	1	-1,0	1,0	1,0
61-66	9	11	2,0	4,0	0,4
67-72	11	12	1,0	1,0	0,1
73-78	9	6	-3,0	9,0	1,5
79-84	1	2	1,0	1,0	0,5
85-90	0	0	0,0	0,0	0,0
SUM	32	32	0,0	16,0	3,45

The table above shows that the result is 3,45. The researcher used Chi-Square table at the significance of 5% with 32 samples was 11.07. it shows that the result of manual calculation less than chi square table (3.45 < 11.07). Therefore, the data is normal.

6. Test of Homogeneity

The researcher applied the variance homogeneity test to test the variance of two samples, experimental and control group. To know whether the variance of two samples is homogenous or not, the researcher used F test.³ The computation of F test is as follows.

 $F = \frac{\textit{the highest variance}}{\textit{the lowest variance}}$

³Sugiyono, *Metode Penelitian Kuantitatif dan Kualitatif, dan R & D*(Bandung: Alfabeta CV,2010),204.

$$=\frac{37,46}{25,12}=1.49$$

A	N1	N2	F Table	F Value	Result
0.05	29	32	1.84	1.49	Homogenous

Based on the table of Ftable, it is known that the F value on significant level 0.05 is 1.49. The F value is lower than F table. The result is 1.49<1.84, it meant that the variance of two samples is homogenous.

B. Hypothesis Testing

To test the hypothesis, the researcher used the t-test to know the result of post-test of experimental and control group can be seen by the following calculation:

t = t value

$$X^{1} = 73,82$$

 $X^{2} = 65,31$
 $S_{1}^{2} = 37,46$
 $S_{2}^{2} = 65,31$
 $N^{1} = 29$
 $N^{2} = 32$

$$t = \frac{\tilde{X}_1 - \tilde{X}_2}{\sqrt{\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2}} \left[\frac{N_1 + N_2}{N_1 \cdot N_2}\right]}}{t = \frac{73,82 - 65,31}{\sqrt{\frac{(29 - 1)37,46 + (32 - 1)65,31}{32 + 29}} \left[\frac{32 + 29}{32 - 2}\right]}}$$

$$t = \frac{8.51}{\sqrt{\frac{(28)37.46+(31)65.31}{59}} \left[\frac{61}{928}\right]}}$$
$$t = \frac{8.51}{\sqrt{\frac{1.048.88+2.024.61}{59}} [0,06]}$$
$$t = \frac{8.51}{\sqrt{\frac{3.073.5}{59}} [0,06]}$$
$$t = \frac{8.15}{\sqrt{3.4225}} [0,06]$$
$$t = \frac{8.15}{\sqrt{3.1225}}$$
$$t = \frac{8.15}{1.7670}$$
$$t = 4.816$$
T table : 1.999
T value : 4.816

Table 4.11

The level of significant α	T table	
50%	3.457	
20%	3.222	
10%	2.912	
5%	1.999	
2%	2.389	
1%	2.658	

The value of t table.

It means that t value is greater than t table, so the hypothesis is **accepted.**

By using T test that have 5% significant, we can use this rule :

- Null Hypothesis: there is no an influence of clustering technique on the students achievement in writing descriptive text at eight grades of SMPN 1 Pademawu in the academic year 2021/2022.
- Alternative Hypothesis: there is an influence of clustering technique on the students achievement in writing descriptive text at eight grades of SMPN 1 Pademawu in the academic year 2021/2022.

From the explanation above, it can conclude that t-table is 1.999 the obtained t-value is 4.816. There for, the t-value is higher than the critical value on the table (4.816>1.999).

Based on the hypothesis testing above, it means that Ho is rejected and Ha is accepted. Therefore, the hypothesis in this research Ha says there was an influence of clustering technique on the student's achievement in writing descriptive text at eight grades of SMPN 1 Pademawu in the academic year 2021/2022.

C. Discussion

1. The Result Score of Experimental Group

In this section, the researcher can conclude the hypothesis testing. From 29 samples, there are 2 students are very good, 25 students are good, 2 students are fair. There was no student in poor and fair category. Meanwhile, the highest score of students of experimental group at eight grade students of SMP Negeri 1 Pademawu is 86 and the lowest score is 60. Thus, the mean score of post-test of experimental group is 73,82. It is included in the interval 66-79. It means that there was an influence of clustering technique on the students achievement in writing descriptive text at eight grades of SMPN 1 Pademawu in the academic year 2021/2022.

2. The Result Score of Control Group

From 32 samples, there were 1 students were very good, 9 students are good, 22 students are fair and no students in poor and fail category. Meanwhile, the highest score of the students of control group at the eight grade students of SMP Negeri 1 Pademawu is 80 and the lowest score is 56. The mean score of post-test of the control group 65,31. It is include in the interval 56-65. It means that students of control group of the eight grade students of SMP Negeri 1 Pademawu categorized as fair on their writing ability in writing descriptive text without clustering technique.

3. As the mentioned above, the hypothesis of this research says "there is an influence of clustering technique on the students achievement in writing descriptive text at eight grades of SMPN 1 Pademawu in the academic year 2021/2022. From the previous analysis, it shows that the level of significant is 5%, the result of the computation of t-value is 4.816 and t-table is 1.999. The computation shows that t-value is higher than t-table that is 4.816>1.999. So, the researcher concludes that there is an influence

of clustering technique on the students achievement in writing descriptive text at eight grades of SMPN 1 Pademawu in the academic year 2021/2022.