

CHAPTER IV

FINDING AND DISCUSSION

This chapter was mean to present the researcher's finding during the research of the eight grade at Junior High School 36 Sijunjung. The research was started at 03th November 2017 until 21th November 2017. The analysis of the collected data was carried out to answer the research problem that is to find out whether using brainstorming technique gives significant effectiveness to improve students' writing ability of the Eight Grade at Junior High School 36 Sijunjung. The research was started by giving pre-test to experimental group and at the end of the research was given post-test. Based on the data it can be seen whether students' writing ability improvement or not and the technique has significance effect or not.

A. Research Finding

1. Description of the Data

After conducting the research, the writer obtained two kinds of data; the scores of pre-test and post-test. Before doing the study the pre-test was given to the students that are proposed to identify the students' writing basic ability. After doing the pre-test the researcher taught writing to the students by using brainstorming technique in the class for four meeting. At the end of the meeting, the post-test was given to the students.

The writing test of pre-test and post-test was the same where the students were asked to write descriptive text about describing people, the writing test of pre test describe about “My classmate “ and the post test describe about “My Idol”. They would describing well which consist of 80 minutes. This test was prepared by the researcher. The result of writing was evaluated by considering five aspects namely: content, organization, vocabulary, language use and mechanics.

Students’ writing score are evaluated by considering Jacob’ Theory of Scoring Writing. And then, all of the data or scores were analyzed to find out the maximum and minimum scores, mean score, standard deviation of pre-test and post-test of experimental class.

a. The Pre-Test Scores

The pre-test is the test which is given to the students before the treatment. It is aimed to know students’ writing basic skill. The result of the pre-test can be seen on the table below:

Table 4.1
The Data of Writing Pre-Test Scores

No.	Component of Writing					Score
	Content	Organi zation	Vocab ulary	Language Use	Mech anics	
1.	17	13	12	12	2	56
2.	17	14	12	12	2	57
3.	22	16	16	18	3	75
4.	23	15	12	15	3	68
5.	25	17	17	18	3	80
6.	17	13	11	11	2	54

7.	21	15	13	16	3	68
8.	18	10	13	13	2	56
9.	21	13	12	13	2	61
10.	21	14	13	14	3	65
11.	19	13	12	13	2	59
12.	21	15	15	17	3	71
13.	19	13	12	15	3	62
14.	18	13	12	14	3	60
15.	11	9	11	9	2	42
16.	13	11	11	11	3	49
17.	14	11	11	9	2	47
18.	17	14	11	12	3	57
19.	23	16	14	14	3	70
20.	21	15	14	11	3	64
21.	11	9	11	11	2	44
22.	17	13	12	14	3	59
23.	15	10	11	11	2	49
24.	14	11	11	9	2	47
25.	11	9	9	9	2	40
26.	24	17	17	18	4	80
27.	16	12	11	11	2	52
28.	17	14	13	11	3	58
29.	16	12	12	11	2	53
30.	17	14	13	11	2	57
31.	17	14	12	11	2	56
32.	22	16	15	14	3	70
33.	21	15	14	11	3	64
34.	21	16	14	12	3	66
35.	21	15	14	11	3	64
36.	18	13	12	11	3	57
37.	17	14	12	11	2	56
38.	11	9	8	9	2	39
39.	15	14	12	11	2	54
40.	15	14	11	11	2	53
41.	19	13	13	12	2	59
Sum	733	544	511	507	103	2398
Mean	17.87	13.26	12.46	12.36	2.51	58.48
Max	25	17	17	18	3	80
Min	11	9	8	9	2	39
Total Student						41

Based on the table above, researcher found the result as table below:

Table 4.2
Pre-Test Score Result of Experimental Class VIII

Class	N	The Highest score	The Lowest Score	Mean	Total Score	Standard Deviation
Experimental	41	80	39	58	2398	9.79

Descriptive Statistics

	Mean	Std. Deviation	N
PRETEST	58.48	9.79	41
POSTTEST	81.60	7.42	41

Based on the table above, the highest score of students' writing before giving treatment by using brainstorming technique was 80, while the lowest score was 39. The mean score was 58.48 and the standard deviation was 9.79. (See appendix 7)

This table below also shows the mean score of each writing skill components:

Table 4.3

The Mean Score of Pre-Test in Term of Content, Organization, Vocabulary, Language Use and Mechanics

COMPONENTS				
Content	Organization	Vocabulary	Language Use	Mechanics
17.87	13.26	12.46	12.36	2.51

Based on the above table it can be seen that students' mean score, in organization was 13.26, in vocabulary was 12.46, in language use was

12.36, in mechanics was 2.51 while in content students' mean score was 17.87.

From the above writing pre-test result researcher also got the interval data of pre-test of experimental class (VIII)

Table 4.4
The Interval Students' Writing Score of Pre Test

No	Interval (Students' Writing Scores)	Number of students	Percentage
1	75-80	3	7.31%
2	69-74	3	7.31%
3	63-68	7	17.07%
4	57-62	11	26.82%
5	51-56	9	21.95%
6	45-50	4	9.75%
7	39-44	4	9.75%
Total		41	100%

From the table 4.4, the researcher found that most of students' writing score was at interval 57-62. They were 11 students by percentage 26.82%. Meanwhile, there were 9 students who got score at interval 51-56 by percentage 21.95%, 7 students who got score at the interval 63-68 by percentage 17.07%, 4 students who got score at interval 45-50 by percentage 9.75%, 4 students who got score at interval 39-44 by percentage 9.75%, and then 3 students who got score at interval 75-80 by percentage 7.31%, the last 3 students who got score at interval 75-80 by percentage 7.31%.

b. The Post-Test Scores

Researcher gave the post-test after giving the treatment to experimental class. The data of the post-test score can be seen in the table below:

Table 4.5
The Data of Writing Post-Test Scores

No.	Component of Writing					Score
	Content	Orgaization	Vocabulary	Language Use	Mechanics	
1.	24	17	17	18	4	80
2.	25	17	17	21	4	84
3.	28	18	18	22	4	90
4.	25	17	17	19	4	82
5.	29	18	18	22	4	91
6.	25	17	17	17	4	80
7.	24	17	17	21	4	83
8.	28	18	18	22	4	90
9.	24	17	17	19	4	81
10.	25	17	17	21	4	84
11.	26	17	17	17	4	81
12.	29	19	18	22	4	92
13.	25	17	17	18	4	81
14.	25	17	17	18	4	81
15.	25	16	16	17	4	78
16.	21	13	13	16	3	66
17.	25	17	17	17	4	80
18.	26	17	16	17	4	80
19.	26	17	18	20	4	85
20.	27	17	17	21	4	86
21.	21	13	13	15	3	65
22.	21	14	14	18	4	71
23.	27	17	17	18	4	83
24.	21	13	14	19	3	70
25.	21	15	16	18	3	73
26.	29	19	19	23	4	94
27.	23	16	14	14	3	70
28.	27	17	17	18	4	83
29.	25	17	16	18	4	80
30.	28	18	17	19	4	86

31	26	16	15	18	4	79
32	28	18	18	22	4	90
33	28	17	17	21	4	87
34	28	18	18	20	4	88
35	26	17	17	19	4	83
36	29	18	19	23	4	93
37	28	18	18	17	4	85
38	24	16	14	15	3	72
39	21	13	13	17	3	67
40	24	18	17	21	4	84
41	27	18	18	21	4	88
Sum	1044	686	680	779	157	3346
Mean	25.46	16.73	16.58	19	3.82	81.60
Max	29	19	19	23	4	94
Min	21	13	13	14	3	65
Total Student						41

Table 4.6
Post-test Score Result of Experimental Class VIII
at Junior High School 36 Sijunjung

Class	N	The Highest score	The Lowest Score	Mean	Total Score	Standard Deviation
Experimental	41	94	65	81.60	3346	7.42

Based on the table above, the highest score of students' writing after given the treatment by using brainstorming technique was 94, while the lowest score was 65. The mean score was 81.60 and the standard deviation was 7.42.

This table below also shows the mean score of each writing skill components:

Table 4.7
The Mean Score of Post-Test in Term of Content, Organization
Vocabulary, Language Use and Mechanics

COMPONENTS				
C	O	V	LU	M
25.46	16.73	16.58	19	3.82

Based on the above table it can be seen that students' mean score after giving the treatment in organization was 16.73, in vocabulary was 16.58 in language use was 19, in mechanics was 3.82, while in content of students' writing text mean score was 25.46.

From the result above in the table 4.7, researcher got the interval data of post-test score of experimental class (VIII).

Table 4.8
The Interval Students' Writing Score of Post Test

No	Interval (Students' Wrting Scores)	Number of students	Percentage
1	89-94	7	17.07%
2	83-88	14	34.14%
3	77-82	12	29.26%
4	71-76	3	7.31%
5	65-70	5	12.19%
	Total	41	100%

From the table 4.8, it was found that most of students' writing score of post-test in the experimental group is about 83.88. there were 12 students got score at that interval 77-82 by percentage 29.26%, 7 students got score at interval 89-94 by percentage 17.07%, then 5 students got the

score at interval 65-70 by percentage 12.19%, and 3 students got score at interval 71-76 by percentage 7.31%.

Based on the pre-test and post-test of experimental class, it was found the description of students' pre-test and post-test score.

Table 4.9
Description of Pre-Test and Post-Test Scores
of Experimental Class

Description	Pre-Test	Post-Test
Total Students	41	41
Highest Score	80	94
Lowest Score	39	65
Sum of Score	2398	3346
Mean Score	58.48	81.60
Standard Deviation	9.79	7.42

From the table above, it can be seen that the students' writing score in post test is higher than students' writing score in pre test. It can be proved by the highest score of students increased from 80 to be 94, the lowest score from 39 to be 65, sum of score from 2398 to be 3346, the mean score from 58.48 to be 81.60, and the standard deviation from 9.79 to be 7.42.

2. Analysis of the Data

To know whether students' writing ability improve after giving treatment by using brainstorming technique in teaching writing, the researcher then, compare the result of students' writing before and after teaching writing by using brainstorming technique. The comparison of the pre-test and post-test result can be seen as the table below:

Table 4.10
The Comparison of Pre Test and Post Test Result

Num	Score of Pre-Test (X)	Score of Post-Test (Y)	D (Y-X)	D ² (Y-X) ²
1.	56	80	24	576
2.	57	84	27	729
3.	75	90	15	225
4.	68	82	14	196
5.	80	91	11	121
6.	54	80	26	676
7.	68	83	15	225
8.	56	90	34	1156
9.	61	81	20	400
10.	65	84	19	361
11.	59	81	22	484
12.	71	92	21	441
13.	62	81	19	361
14.	60	81	21	441
15.	42	78	36	1296
16.	49	66	17	289
17.	47	80	33	1089
18.	57	80	23	529
19.	70	85	15	225
20.	64	86	22	484
21.	44	65	21	441
22.	59	71	12	144
23.	49	83	34	1156
24.	47	70	23	529
25.	40	73	33	1089
26.	80	94	14	196

27.	52	70	18	324
28.	58	83	25	625
29.	53	80	27	729
30.	57	86	29	841
31.	56	79	23	529
32.	70	90	20	400
33.	64	87	23	529
34.	66	88	22	484
35.	64	83	19	361
36.	57	93	36	1296
37.	56	85	29	841
38.	39	72	33	1089
39.	54	67	13	169
40.	53	84	31	961
41.	59	88	29	841
	2398	3346	$\sum D = 948$	$\sum D^2 = 23878$

Based on the data in the table above, the researcher calculated the result of $\sum D = 3346$ and $\sum D^2 = 23878$. Then, researcher tried to find out the t-test with the formula as follow:

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}$$

Where:

$$\bar{D} = \frac{\sum D}{N}$$

$$\bar{D} = \frac{948}{41}$$

$$\bar{D} = 23$$

So,

$$t = \frac{41}{\sqrt{\frac{23878 - \frac{(948)^2}{41}}{41(41-1)}}$$

$$t = \frac{41}{\sqrt{\frac{23878 - \frac{898740}{41}}{41(40)}}$$

$$t = \frac{41}{\sqrt{\frac{23878 - 21920}{1640}}$$

$$t = \frac{41}{\sqrt{\frac{1958}{1640}}}$$

$$t = \frac{41}{\sqrt{1.193}}$$

$$t = \frac{41}{1.09}$$

$$t = 37.61$$

From the result above it can be found that the t-test was 37.61. Based on the result, it indicates that there is a difference of degree as much 37.61. Then, to complete the result of the research, the researcher finds out the degree of freedom (df) with the formula:

$$df = N-1$$

$$= 41-1$$

$$= 40$$

The result of t-test is compared with the degree of significance 5% and 1%. At the degree of significance 1%, the t-table is 2.42, while at the 5%, the t-table is 1.68. So, the result is $1.68 < 37.61 > 2.42$.

The result of analyzing the data by using the above formula shows that the t-test is 37.16; it means that there is a significance increase after the brainstorming technique is used in teaching writing. It is because the value of t-test 37.16 is bigger than t table of the degree freedom (df) 40 (obtained from $N-1 = (41-1= 40)$).

To get more explanation that brainstorming technique can improve students' writing ability can be seen from the comparison of students' mean score of pre-test and post test in content, organization, vocabulary, language use, and mechanics. The calculation of those components can be explained as table below:

Table 4.11
The Comparison of Mean Score of Pre-Test and Post Test
of Experimental Class in Term of Content, Organization, Vocabulary,
Language Use and Mechanics

No.	Components	Pre-Test	Post-Test	Difference
		Mean Score	Mean Score	
1.	Content	17.87	25.46	7.59
2.	Organization	13.26	16.73	3.47
3.	Vocabulary	12.46	16.58	4.12
4.	Language Use	12.36	19	6,64
5.	Mechanics	2.51	3.82	1.31

From the table above, it can be explained that:

1. Content

The total score of students' content in pre-test was 733. Based on the score the mean score of the students' content in pre test was 17.87, while in post test the total score of content was 1044. So the mean score was 25.46. It can be conclude that the difference between pre test and post test was 7.59.

2. Organization

The total score of students' organization in pre-test was 686. Based on the score got the mean score of the students' organization in pre test was 13.26, while in post test the total score of organization was 544. So, the mean score was 16.37. It can be conclude that the difference between pre test and post test was 3.47.

3. Vocabulary

The total score of students' vocabulary in pre-test was 511. Based on the score got the mean score of the students' vocabulary in pre test was 12.46, while in post test the total score of vocabulary was 680. So, the mean score was 16.58 . It can be conclude that the difference between pre test and post test was 4.12.

4. Language Use

The total score of students' language use in pre-test was 507. Based on the score got the mean score of the students' language use in pre test was 12,36, while in post test the total score of fluency was 779. So, the mean score was 19. It can be conclude that the difference between pre test and post test was 6.64.

5. Mechanics

The total score of students' mechanics in pre-test was 103. Based on the score got the mean score of the students' mechanics in pre test was 2.51, while the total score of post test in mechanics was 157. So, the mean score was 3.82. It can be conclude that the difference between pre test and post test was 1.31.

Based on the table above we can see that all of the components of writing that students' work has improved such as content, organization, vocabulary, language use and mechanics. Beside that all of students' writing ability has improved, that be affected by brainstorming technique in teaching writing, and brainstorming technique give positive influnce in generating ideas. Because, content has high significance to be better in writing test, the difference mean score about pre-test and post-test is 7.59.

Hypothesis Testing

Having analyzing the data of pre test and post test by using t-test formula, the result shows that the value of t-test was 37.16. It means that there is a significance increase in teaching writing by using brainstorming technique.

From the result of calculation, it is obtained the value of the t-observation (t_o) or t-test was 37.16, the degree of freedom (df) is 40. In the table of significance of 1 %, the value of degree of significance is 2.42 and 1.68 in the value of degree of significance of 5%. The comparison of t-test and the value of degree of significance was $1.68 < 37.16 > 2.42$. Since the t-test is bigger than t-table it can be concluded that the hypothesis was accepted.

B. Discussion on Finding

Brainstorming technique is one of the techniques in teaching and learning writing. After applying brainstorming technique was proved by the research finding this technique gives significant effect on students' writing ability that refers to content, organization, vocabulary, language use, and mechanics. Based on the data above, the value of t-test in students' writing post-test score was 37.16 is bigger than t-table 2.42. This result is seen by the degree of significance 1% on the table, it means that teaching writing by using brainstorming technique gives significant effect on students' writing ability. The mean score posttest of the students' content (25.46) was higher

than the mean score of pretest (17.87). It means that the students' ability in writing, especially in generating the ideas increased after getting treatments with brainstorming.

As Brown (1994) maintained that the generation of the ideas in writing can happen in numerous ways, one of the effective ways is brainstorming. While, related to the result of the research indicated that the students' mastery in generating the ideas as reflected in the content of their writing developed better after the application of brainstorming technique. The mean score gained by the students in pretest in the term of content as mentioned above was different about 7.59 than the mean score of post test. It explained that brainstorming technique gives positive influence in generating ideas. It is also conformed to Reid (1988) that suggested brainstorming as a way in conducting the generation the ideas in prewriting activity.

During the research, researcher found that by using brainstorming technique in teaching and learning process students can improve their writing ability. Brainstorming is one of the beneficial techniques that can be implemented by the classroom practitioners in writing instruction. The using of this technique in teaching writing can help the students to generate their ideas in a strong unity of writing. Moreover, applying brainstorming technique stimulates the students to be more active and interested in writing learning process.

In this research, actually, there are five components of writing that should be measured in conducting the writing activity, namely: content,

organization, vocabulary, language use, and mechanic. In this case, the researcher tried to assess these all of components. And the students' achievement for each component has been mentioned in the last description.

Then, Rizky Ayu M. (2006). Using The Brainstorming Technique To Improve The Eighth Grade Students' Writing Ability At SMP N 1 Nanggulan Kulon Progo, the result of the study showed that brainstorming could improve the students' writing ability. She explained that brainstorming activities could encourage the students to create as many ideas as possible. It facilitated the students to activate their prior knowledge before they practiced their writing. Furthermore, brainstorming also improved the students' motivation and involvement to build their confidence to generate ideas in writing.

Then, it can be concluded that theoretically, through the brainstorming technique, it has proved that students got the improving in writing ability and also brainstorming technique gives significant effect on students' writing ability, especially in generating ideas.