

CHAPTER IV

FINDINGS AND DISCUSSION

A. Findings

To find out more about the students' writing skill who use and do not use clustering technique, the researcher tested the students using test, the researcher gave the test to students and they write down the descriptive text. Here, the researcher describes about result of the research on the field that collected by techniques of data collection. English learning process at MAN 3 Banjar for tenth grade students have been done six times in three weeks, for class X that is taught by Mrs. Hj. Hasnah, S.Pd.I.

The researcher did the research on February, 7th 2017, until February 28th 2017, then January 10th 2017 the researcher gave the research letter from Official of Education in Martapura City to Headmaster of MAN 3 Banjar.

This is result of writing descriptive paragraph by using clustering technique in class X MIPA 2 and X AGAMA 2 to know the different score between pre-test and post-test.

First, the researcher did normality and homogeneity test by using One-sample Kolmogorov-Smirnov SPSS version 23.

1) The result of normality test

Table 4.1 Result of Normality Test

N Variable	Statistics	Sig.
28	0,103	0,200

Based on the result by One-sample Kolmogorov-Smirnov SPSS version 23, it shows that the statistic value of variable test was 0,103 and the significant value of variable test was 0.200. Based on the table the researcher was given two interpretations :

- a. Statistic value was 0.103 for variable test. In Kolmogorov-Smirnov for Normality test, statistic value is an Absolute value where the values get after calculating positive and negative data in most extreme different. Absolute value is the largest value from positive and negative that the value usually called D absolute. For answer the question normality test by D absolute, the hypotheses as follows:

- H_0 : The data has normal distribution
- H_a : The data has not normal distribution

According to hypotheses the researcher uses D table to found D_{α} Level of significance: 0.05 and N: 28 So, D_{α} was 0.2655 from D table and the absolute value can be written, as follows:

- If the $D_{value} < D_{\alpha}$ H_0 is accepted.
- If the $D_{value} > D_{\alpha}$ H_0 is rejected.

The value of D was 0.103 for variable test $D_{alpha} = 0.2655$ for more information can be seen in appendix. Because the $D_{value} = 0.103 < 0.2655$ H_0 for test was accepted and the data was normal. To make it sure the researcher continued the interpretation two of the significance table.

- b. Significance is a value that usually used by many researcher to know whether different or not the data with the significance level or to answer significance hypothesis. Therefore, after the data was interpreted by D Absolute to make sure the data has normal distribution or not. The hypotheses, as follows:

- If $pvalue < p_{alpha}$ H_0 rejected or abnormal
- If $pvalue > p_{alpha}$ H_0 accepted or normal

Meanwhile, the level of significance 0.05 and $pvalue$ for variable test 0.200. In case study the test was normal distribution, because the test $0.200 > 0.05$.

After made two interpretation of normality test the researcher concluded that variable is on normal distribution and the researcher would use t-test.

2) The result of homogeneity test

Table 4.2 The result of Homogeneity test

Variable	Sig.	Criteria
Test	0,081	Equal

Moreover, that variable was normal and also the data was homogenous or equal cause the result of significance test was $0.081 > 0.05$. Those the data was homogeneous cause the significance p value $> p_{\alpha}$ and the research continued by using t-test. For more information about the result, it can be seen in the appendix.

1. Description about the students' writing descriptive paragraph by using clustering technique in pre-test and post-test in the class X MIPA 2

The researcher conducted the English writing test for the tenth grade at MAN 3 Banjar 10th of February and 24th of February in class X MIPA 2. The scoring is based on five categorize of descriptive text, they are : Content, Organization, Grammar, Vocabulary, and Mechanics. More information about the scores can be seen in appendix table 4.3-4.5. .

To know the writing skill of students who use clustering technique between pre-test and post-test at tenth grade at MAN 3 Banjar academic year 2016/2017 the researcher uses the accounting of formula as follows:

a. Giving interpretation for “ t ” with consulting t table (“ t_{tabel} ”):

$$Df = N - 1$$

$$= 30 - 1$$

$$= 29$$

- b. Looking for standard Deviation for X1 MIPA 2 by using the following formula:**

$$S = \sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n - 1}}$$

$$S = \sqrt{\frac{\sum 95368,75 - \frac{274306}{30}}{30 - 1}}$$

$$S = \sqrt{\frac{3791,8833}{29}}$$

$$S = \sqrt{130,754597}$$

$$S = 11,435$$

The post test using the same formula and get $S = 9,764$

- c. looking for t , by using the following formula:**

$$t = \frac{x_1 - x_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2} - 2r\left(\frac{s_1}{\sqrt{n_1}}\right)\left(\frac{s_2}{\sqrt{n_2}}\right)}}$$

x_1 : mean of pre-test

x_2 : mean of post-test

s_1 s_2 : standard deviation 1 and 2

r : correlation

N : Subject

$$\begin{aligned}
 & \frac{55,25 - 80,17}{\sqrt{\frac{130,759225}{30} + \frac{95,335696}{30} - 2(0,220) \left(\frac{11,435}{5,47722558} \right) \left(\frac{9,764}{5,47722558} \right)}} \\
 & \frac{-24,92}{\sqrt{7,53649736 - 1,63755298}} \\
 & t = \sqrt{5,89894438} \\
 & t = -10,26032
 \end{aligned}$$

Thus, $-t_{\text{count}} = -10,3 < -t_{\text{table}} = -2,04$. $-T_{\text{count}}$ is lower than $-T_{\text{table}}$. **H_o (Null Hypothesis) is rejected and H_a (Alternative Hypothesis) is accepted.** By this result, the researcher concludes that **H_a is accepted.**

As a result, there are significant differences in students who use clustering technique in class X MIPA 2 between pre-test and post-test in their writing skill of of descriptive paragraph on tenth grade at MAN 3 Banjar academic year 2016/2017.

The researcher use SPSS to more convinencing the count, and the result: see appendix.

2. Description about the students' writing descriptive paragraph without using clustering technique in pre-test and post-test in the class X AGAMA 2

The researcher conducted the English writing test for the tenth grade at MAN 3 BANJAR 7th of February and 21th of February in class X AGAMA 2. The scoring is based on five types with descriptive text, they are : Content, Organization, Grammar, Vocabulary, and Mechanics. More information about the scores can be seen in appendix the table 4.6-4.8.

To know the writing skill of students who do not use clustering technique between pre-test and post-test at tenth grade at MAN 3 Banjar academic year 2016/2017 the researcher uses the accounting of formula as follows:

a. Giving interpretation for “ t ” with consulting t table (“ t_{tabel} ”):

$$Df = N - 1$$

$$= 28 - 1$$

$$= 27$$

b. Looking for standard Deviation for X Agama 2 by using the following formula:

$$S = \sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n - 1}}$$

$$S = \sqrt{\frac{80667,1875 - \frac{78625,5022}{27}}{27}}$$

$$S = \sqrt{75,6179740741}$$

$$S = 8,696$$

The post test using the same formula and get $S = 12,565$

c. Looking for t , by using the following formula:

$$t = \frac{x_1 - x_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2} - 2r\left(\frac{s_1}{\sqrt{n_1}}\right)\left(\frac{s_2}{\sqrt{n_2}}\right)}}$$

$$t = \frac{52,99 - 73,42}{\sqrt{\frac{8,696^2}{28} + \frac{12,565^2}{28} - 2(0,601)\left(\frac{8,696}{\sqrt{28}}\right)\left(\frac{12,565}{\sqrt{28}}\right)}}$$

$$t = \frac{-20,43}{\sqrt{2,700 + 5,638 - 1,202(1,643)(2,374)}}$$

$$t = \frac{-20,43}{\sqrt{3,65}}$$

$$T = -10,69$$

Thus, $-t_{count} = -10,69 < -T_{table} 5\% = -1,70$. **H_o (Null Hypothesis) is rejected and H_a (Alternative Hypothesis) is accepted.** By this result, the researcher concludes that **H_a is accepted.**

As a result, there are significant differences in students who do not use clustering technique in class X AGAMA 2 between pre-test and post-test in their writing skill of descriptive paragraph on tenth grade at MAN 3 Banjar academic year 2016/2017.

The researcher use SPSS to more convincing the count, and the result: (see appendix)

This is result of writing descriptive paragraph using clustering technique and without clustering technique in class X MIPA 2 and X AGAMA 2 to know the different score in post-test.

3. Description about the students' writing using clustering technique and without clustering technique in the class X MIPA 2 and X AGAMA 2

The researcher conducted the English writing test for the tenth grade at MAN 3 Banjar 7th of February, 10th of February, 21st February and 24th of March in class X MIPA 2 and X AGAMA 2. The scoring is based on five criteria with descriptive text they are : Content (Topic and Detail), Organization (Identification and Description), Grammar (Use Present Tense and Agreement), Vocabulary, and Mechanics (Spelling, Punctuation, and Capitalization). More information can be seen in appendix table 4.9.

The total score of every students counted by Brown's formula so that the maximum score is 100 (example, $3*4+2*3+2*3+1,5*3+1,5*2/4*10 = 78,75$), so, based on the table above, it shows that the highest score of students who use clustering technique is 92,5 and then, the lowest score is 62,5, and accumulate score is 2405.

Based on the result of the test, it is found that the categories of the writing skill of students who use clustering technique of tenth grade at MAN 3 Banjar academic year 2016/2017 are categorized in:

- a. Excellent category, 16 students (53,33%) with score 80-100
- b. Good category, 11 students (36,66%) with score 70-79
- c. Fair category, 3 students (10%) with score 60-69
- d. Low category, 0 student (0%) with score 50-59
- e. Very low category, 0 student (0%) with score 0-49

Table 4.10 The frequency distribution of the writing descriptive paragraph and category of students who use clustering technique

No	Score	Frequency	Percentage	Categories
1	80-100	16	53,3%	Excellent
2	70-79	11	36,7%	Good
3	60-69	3	10%	Fair
4	50-59	0	0%	Low
5	0-49	0	0%	Very Low
		30	100%	

To know the writing descriptive paragraph of students who use clustering technique on tenth grade at MAN 3 Banjar academic year 2016/2017 the researcher uses the accounting of Mean formula as follows:

$$M_x = \frac{\sum f \times}{N}$$

$$M_x = \frac{2405}{30}$$

$$M_x = 80,1667 \rightarrow 80$$

Thus the students' writing descriptive paragraph who use clustering technique on tenth grade at MAN 3 Banjar academic year 2016/2017 can be concluded in excellent category. For the result of students' writing descriptive paragraph without using clustering technique in class X AGAMA 2 can be seen in appendix table 4.11.

The total score of every students counted by Brown's formula so that the maximum score is 100 (example, $3*4+2*3+2*3+1,5*3+1,5*2/4*10 = 78,75$), so, based on the table above, it shows that the highest score of students who use

clustering technique is 91,25 and then, the lowest score is 50, and accumulate score is 2055,75.

Based on the result of the test, it is found that the categories of the writing skill of students who do not use clustering technique of tenth grade at MAN 3 Banjar academic year 2016/2017 are categorized in:

- a. Excellent category, 9 students (32,14%) with score 80-100
- b. Good category, 12 students (42,85%) with score 70-79
- c. Fair category, 3 students (10,71%) with score 60-69
- d. Low category, 4 student (14,28%) with score 50-59
- e. Very low category, 0 student (0%) with score 0-49

Table 4.12 The frequency distribution of the writing skill and category of students who do not use clustering technique

No	Score	Frequency	Percentage	Categories
1	80-100	9	32,14%	Excellent
2	70-79	12	42,85%	Good
3	60-69	3	10,71%	Fair
4	50-59	4	14,28%	Low
5	0-49	0	0%	Very Low
		28	100%	

To know the writing descriptive paragraph of students who do not use clustering technique on tenth grade at MAN 3 Banjar academic year 2016/2017 the researcher uses the accounting of Mean formula as follows:

$$M_x = \frac{\sum f \times}{N}$$

$$M_x = \frac{2055,75}{28}$$

$$M_x = 73,41 \rightarrow 73$$

Thus the students' writing descriptive paragraph who do not use clustering technique on tenth grade at MAN 3 Banjar academic year 2016/2017 can be concluded in good category.

Then researcher counting the comparison between using clustering technique and without using clustering technique.

To know the comparison of the writing skill between students who use and do not use clustering technique, the researcher uses " t_{test} ". After that the collected data have been processed, the researcher analysis them make conclusion by using t_{test} formula: $t = \frac{M_1 - M_2}{SE_{M_1 - M_2}}$

Based on the result of the test in appendix, the researcher calculates the mean formula of each major student. To keep the subject identity, the researcher just uses number of identifying the subject.

a. Looking for Mean Variable I by using the following formula:

$$M_x \text{ Or } M_1 = \frac{\sum fx}{N_1}$$

$$M_x \text{ Or } M_1 = \frac{2405}{30}$$

$$M_x \text{ Or } M_1 = 80,1667$$

b. Looking for Mean variable II by using the following formula:

$$M_y \text{ Or } M_2 = \frac{\sum fy}{N_2}$$

$$M_y \text{ Or } M_2 = \frac{2055,75}{28}$$

$$M_y \text{ Or } M_2 = 73,4196$$

- c. Looking for standard Deviation for variable I by using the following formula:**

The result of $\sum fx^2$ of variable I can be seen in appendix .

$$SD_x \text{ or } SD_1 = \sqrt{\frac{\sum fx^2}{N_1}}$$

$$SD_x \text{ or } SD_1 = \sqrt{\frac{2860,12946}{30}} = \sqrt{95,3376487} = 9,76409999 \rightarrow 9,76410$$

- d. Looking for standard Deviation for Variable II by using the following formula:**

The result of $\sum fy^2$ of variable II can be seen in appendix.

$$SD_y \text{ or } SD_2 = \sqrt{\frac{\sum fy^2}{N_2}}$$

$$SD_y \text{ or } SD_2 = \sqrt{\frac{4420,89273}{28}} = \sqrt{157,889026} = 12,56539$$

- e. Looking for Standard Error for Mean Variable I by using the following formula:**

$$SE_{M_x} \text{ Or } SE_{M_1} = \frac{SD_1}{\sqrt{N_1 - 1}}$$

$$SE_{M_x} \text{ Or } SE_{M_1} = \frac{9,6}{\sqrt{30-1}} = \frac{9,6}{\sqrt{29}} = \frac{9,5998}{5,3851} = 1,78267256$$

- f. Looking for Standard Error for Mean Variable II by using the following formula:**

$$SE_y \text{ Or } SE_{M_2} = \frac{SD_2}{\sqrt{N_1 - 1}}$$

$$SE_{M_y} \text{ Or } SE_{M_2} = \frac{12,33}{\sqrt{28-1}} = \frac{12,33}{\sqrt{27}} = \frac{12,3389}{5,1961} = 2,37463698$$

g. Looking for standard Error for comparative Mean Variable I and

Mean variable II by using the following formula:

$$SE_{M_1} - M_2 = \sqrt{SE_{M_1}^2 + SE_{M_2}^2}$$

$$SE_{M_1} - M_2 = \sqrt{1,78267^2 + 2,37464^2}$$

$$SE_{M_1} - M_2 = \sqrt{3,17791233 + 5,63891513}$$

$$SE_{M_1} - M_2 = \sqrt{8,81682746} = 2.94376091$$

h. looking for t_o , by using the following formula:

$$t = \frac{M_1 - M_2}{SE_{M_1} - M_2}$$

$$t = \frac{80,166 - 73,41}{2.94376091}$$

$$t = \frac{6,7471}{2.9437} = 2,292$$

i. Giving interpretation for “ t ” with consulting t table (“ t_{tabel} ”):

- Looking for Degree of Freedom

$$\frac{df}{db} = (N_1 + N_2 - 2)$$

$$\frac{df}{db} = (30 + 28 - 2) = 56$$

After the researcher found the df (degrees of freedom), which is 56, and then consult with t_{tabel} , can be seen in appendix.

j. The researcher makes a conclusion.

- 1) To know the students ‘ writing descriptive paragraph between students who use and do not use clustering technique with the analysis below

a) H_a : Students' writing descriptive paragraph who use clustering technique better than students' writing skill who do not use clustering technique ($M_{x_1}) > (M_{x_2})$

b) Mean students' writing descriptive paragraph who use clustering technique:

$$M_{x_1} = 80,166$$

Mean students' writing descriptive paragraph who do not use clustering technique:

$$M_{x_2} = 73,41$$

c) So, students' writing descriptive paragraph who use clustering technique better than students' writing skill who do not use clustering technique.

2) After that to know the differences students' writing descriptive paragraph between students who use and do not use clustering technique of tenth grade at MAN 3 Banjar.

- Consulting score of “db/df” with “ t_{tabel} ”

t_{tabel} = Value of critic “t”

➤ In significant degrees t table 5% = 2,00

➤ In significant degrees t table 1% = 2.66

- Making hypothesis interpretation:

➤ H_o (Null Hypothesis): there are no significant differences.

➤ H_a (Alternative Hypothesis): there are significant differences.

➤ Consulting “ t ” with “ t_{table} ”

$$2,292 > 2.00$$

$$\frac{df}{db} = (N_1 + N_2 - 2)$$

$$\frac{df}{db} = (30 + 28 - 2) = 56$$

After that the researcher finds the df (degrees of freedom), which is 56..

The table is put in appendix.

Thus, $t_{table} 5\% = 2.00 < t_{count} 2,292$. T_{table} is lower than t_{count} . **H_o (Null Hypothesis) is rejected and H_a (Alternative Hypothesis) is accepted.** By this result, the researcher concludes that **H_a is accepted.**

As a result, there are significant differences in students who use and do not use clustering technique in their writing descriptive paragraph of tenth grade at MAN 3 Banjar academic year 2016/2017.

Then, researcher interpretate the data with effect size table, for more information see table Cohen's D iin appendix :

$$\text{Cohen's } d = (M_2 - M_1) / SD_{\text{pooled}}$$

$$\text{Cohen's } d = (73.4196 - 80.1667) / 11.252259 = 0.599622 = 0,6$$

0.6	73%	Fair
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Researcher make interpretation there is an improvement of students writing descriptive paragraph by using clustering technique is 0,6 by 73% which means in fair category.

4. Description about the effective or not in using clustering technique

The researcher conducted the English writing test for the tenth grade at MAN 3 BANJAR. The researcher concluded from the results that have been obtained, that the experimental class has increased significantly than the control class in the writing descriptive paragraph. So, using clustering technique in learning more effective than without using clustering technique.

B. Discussion

From the statistical measurement above shows that H_o (Null Hypothesis) is not accepted or rejected; H_a (Alternative Hypothesis) is accepted, because value of t_{count} is higher than of t_{table} (value of critic “t”). It means :

- “there is significant difference in students’ writing descriptive paragraph using clustering technique between pre-test and post-test in class X MIPA 2”.
- “there are significant differences in students’ writing using and without using clustering technique of tenth grade at MAN 3 Banjar academic year 2016/2017”.
- “there is effective to students’ in writing descriptive paragraph by using clustering technique more than without clustering technique”.

Based on result of the test there are different highest and lowest scores of the test. The highest score of students who use clustering technique is 92,5 and the highest score of students who do not use clustering technique is 91,25. While the lowest score of the students who use clustering technique is 62,5 and the lowest score of the students who do not use clustering technique is 50.

Based on the table 4.7, writing descriptive paragraph of students who use clustering technique with five components, they are content, organization, grammar, vocabulary, and mechanics. content total score is 107, organization total score is 104, grammar total score is 84, vocabulary total score is 86, and then mechanics total score is 86. This evidence supports the claims of Peregoy and Boyle (2005, p. 235) clustering technique can help students to explore their ideas and make a piece of writing easier.

Based on the table 4.9, writing descriptive paragraph of students who do not use clustering technique with five components, they are content, organization, grammar, vocabulary, and mechanics. content total score is 97, organization total score is 86, grammar total score is 71, vocabulary total score is 75, and then mechanics total score is 70.

Based on the result of the test, there are differences between the highest and lower score. The highest score of the tests students' writing descriptive paragraph who use clustering technique total score is 92,5. The highest score of the test of the writing descriptive paragraph students who do not use clustering technique total score is 91,25. And then the lowest score of the writing descriptive paragraph of students who use clustering technique total score is 62,5. The lowest score of writing descriptive paragraph students who do not use clustering technique total score is 50.

The researcher also finds a difference mean score between the students who use and do not use clustering technique. The mean score of the students who use clustering technique is 80,166, it means the writing descriptive paragraph of

students who use clustering technique is in excellent category. In other hand, the mean score of students who do not use clustering technique is 73,41, it means the writing skill of students who do not use clustering technique is in good category. Then, it is related with the collecting numerical data that are analyzed using mathematically. The researcher found the result of the test from the subjects or t_{count} is higher than t_{table} . The conclusion is there are significant differences in writing descriptive paragraph between students who use and do not use clustering technique.

According to the result of the research, the students who use clustering technique can influence their writing skill than the students who do not use clustering technique. According to English teacher, the students have difficulties in writing english paragraph and get confused where they should start to write, and also their proficiency in writing skill are not in the same level. The students need a strategy to make their writing easier.

Based on Langan (2001, p. 29) says “clustering is a way to think on paper about various ideas and details to one another”. Based on this statement, clustering is defined as a way to collect ideas on paper, the students would get the instruction and information about descriptive paragraph and clustering technique to make their writing easier. Then, when the researcher tested the writing skill of all of students, the result is the students who use clustering technique are better than the students who do not use clustering technique in writing descriptive paragraph.

Based on the result of the research, the researcher gives the interpretation that clustering technique can influence students' proficiency, especially in writing descriptive paragraph. Therefore, based on the result of the research the writing descriptive paragraph of students who use clustering technique is better than the writing descriptive paragraph of students who do not use clustering technique. Finally, findings revealed that the use of clustering technique made more effective the process approach implemented in the class. There was a marked improvement in writing descriptive paragraph of using clustering technique. Finding that is in line with Langan (2001, p. 29) says "clustering is a way to think on paper about various ideas and details to one another" which means clustering is a way to help collect ideas on paper.