

CHAPTER IV

FINDINGS AND DISCUSSION

This chapter describe about finding, normality and homogeneity testing, data analysis, hyphotesis testing and discussion.

A. Findings

To investigate visual - learning - styled students in writing argumentative essay before and after taught using mind mapping, the researcher used questionnaire for knowing students who have a visual learning style, and writing test for measured their argumentative essay writing as the instrument in collecting the data.

The researcher distributes the questionnaire in TBI A-E class. The questionnaire score will be shown as below:

Table 4.1 Questionare score

No.	Criteria	Score
1.	Visual Student	61 – 96
2.	Non Visual Student	24 – 60

Based on the table above if the total score of questionare 61-96 it will be visual students. If the total score of questionare 24-60 it was not visual students.

After the researcher calculate all of the questionare from TBI A-E the biggest visual students in B class, it was 27 students.

The form of writing test in pre-test and post-test was a bit different in term of the topic. In pretest, the topic were “You agree or disagree if there are some school applying full day school” and “You agree or disagree if leader is female” while in post-test, the topic were “You agree or disagree some people doing early marriage” and “You agree or disagree about reclamation”. The visual students can choose both of topic in pre-test and post-test.

In this section, the researcher presented the result of the pre-test and post-test that had been done before and after treatment. Pre-test was held on Nopember 13th, 2017 at 14.40 until 15.40 pm. In pretest, the visual students started making the first draft and mind mapping in the class, and could revise and edit their works out of the class. Meanwhile, in post test was administered on 11th December, 2017 at 14.40 until 15.40 pm. In post test, the visual students were allowed to make the first draft and mind mapping in the class and revise and edit out of the class.

The final result of visual students’ writing after doing all of the steps in process writing in pre-test and post-test then were analyzed by using scoring rubric. Table 4.2 shows the visual students’ score before and after using Mind Mapping.

Table 4.2 The Result of Visual Students' Writing before and after Using Mind Mapping

No	Name	Pre-Test Score	Post Test Score
1	B1	90	95
2	B2	80	85
3	B3	82	85
4	B4	90	95
5	B5	70	80
6	B6	80	85
7	B7	70	90
8	B8	95	97
9	B9	70	95
10	B10	85	90
11	B11	90	90
12	B12	95	95
13	B13	93	96
14	B14	85	95
15	B15	90	95
16	B16	85	90
17	B17	85	85
18	B18	90	90
19	B19	75	95
20	B20	85	90
21	B21	95	95
22	B22	85	90
23	B23	75	70
24	B24	90	95
25	B25	94	95
26	B26	90	95
27	B27	87	90

Based on the table, the subject of this research was B class which consists of 27 visual students. The maximum score in pretest was 95 and post test was 97. The minimum score in pretest were same in 70. To know the visual

students' achievement that is good or not, the researcher gives criteria as follows:

Table 4.3 The Score's Criteria

No	Interval Class	Criteria
1.	91 – 100	Excellent
2.	81 – 90	Very good
3.	71 – 80	Good
4.	61 – 70	Fair
5.	0 – 60	Poor

B. Normality and Homogeneity Testing

1. Normality Testing

Normality tests are used to determine whether a data set is well modeled by a normal distribution or not, or to compute how normality testing is used to know whether the instrument has normality or not. Normality intended to show that the sample data come from a normally distributed population. To find the normality of the instrument, the researcher used *One Sample Kolmogrov Smirnov* with SPSS.16.

The instrument can be called as has normality if Asymp sig 0.05, so that H_0 (null hypothesis) is accepted and H_a (alternative hypothesis) is rejected. It was also can be concluded as follows:

- a. H_0 : The data is in normal distribution
- b. H_a : The data is not in normal distribution

The result of normality computed by SPSS 16.0 can be seen as follows:

Table 4.4 Normality Using *One Sample Kolmogorov Smirnov*

One-Sample Kolmogorov-Smirnov Test		Pretest	posttest
N		27	27
Normal Parameters ^a	Mean	85.22	90.67
	Std. Deviation	7.738	6.038
Most Extreme Differences	Absolute	.192	.245
	Positive	.103	.162
	Negative	-.192	-.245
Kolmogorov-Smirnov Z		.999	1.273
Asymp. Sig. (2-tailed)		.271	.078
a. Test distribution is Normal.			

Based on table 4.4 above, it showed that the test given to 27 visual students of B class. It also showed that the value of Asymp. Sig (2-tailed) in pre test was 0.271 and in post test was 0.78 which is higher than 0.05, ($0.271 > 0.05 < 0.78$). So that it can be concluded that resulted as H_0 (null hypothesis) was accepted and H_a (alternative hypothesis) was rejected and also it can be interpreted that has normal distribution.

2. Homogeneity Testing

Homogeneity testing is intended to make sure that the collected manipulation data in analysis is truly taken from population which is too different each others. To know the homogeneity, the researcher used *Levene* with SPSS.16. The result can be seen below:

Table 4.5 Homogeneity using *Levene*

Test of Homogeneity of Variances			
Hasil			
Levene Statistic	df1	df2	Sig.
1.377	2	20	.275

The test called homogeny if the significant score more than 0.05.

Based on the table above, the test is homogeneity because $0.275 > 0.05$.

C. Data Analysis

Data analysis was done to know the difference score of the visual students' achievement in writing argumentative essay before and after being taught using mind mapping. Referring to the data in the form of visual students' score gained from pretest and post test as stated above, the next step was analyzing those data by computing it using T-test. The researcher use T-test because the data is normal distribution.

To find out whether there is difference on visual students' in writing argumentative essay before and after taught using mind mapping, the researcher used percentage formula and divided the test result into five criteria; those are excellent, very good, good, fair and poor. It means that if the visual students can understand the writing argumentative essay well so they get excellent score, when the visual students still confused about writing argumentative

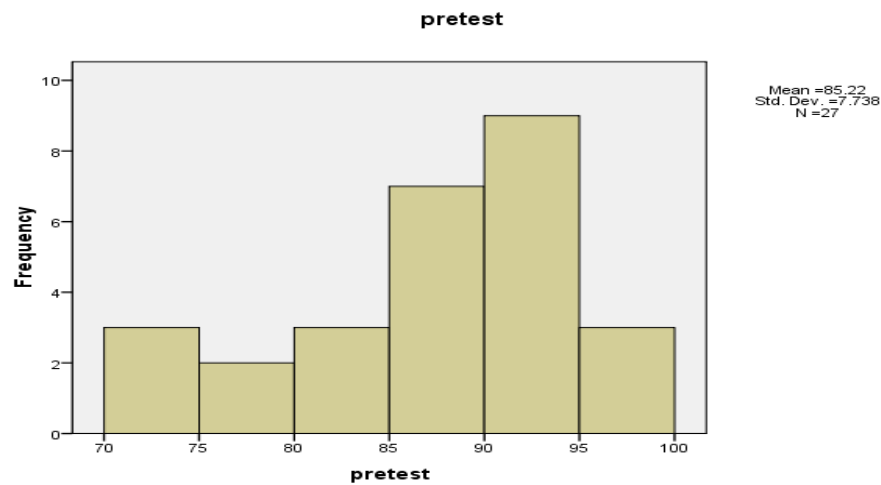
essay, they get very good and good score, fair and poor score is get by the visual students when they just understand a little writing argumentative essay.

To make the data set meaningful, the researcher organized the frequency and the percentage of score in pre-test by using SPSS 16.0 Table 4.6 and 4.8 represent the statistical result:

Table 4.6 Frequency of Score in Pre-test

Pretest					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	70	3	11.1	11.1	11.1
	75	2	7.4	7.4	18.5
	80	2	7.4	7.4	25.9
	82	1	3.7	3.7	29.6
	85	6	22.2	22.2	51.9
	87	1	3.7	3.7	55.6
	90	7	25.9	25.9	81.5
	93	1	3.7	3.7	85.2
	94	1	3.7	3.7	88.9
	95	3	11.1	11.1	100.0
	Total	27	100.0	100.0	

The researcher also gave an elaboration of histogram to make the data clear. The histogram of the results of pre-test score were presented below:



Based on table above showed that score minimum was 70 and score maximum was 95. Score 70 have 3 frequency (11,11%), score 75 have 2 frequency (7,40%), score 80 has 2 frequency (7,40%), score 82 has 1 frequency (3,7%), score 85 has 6 frequency (22,2%), score 87 have 1 frequency (3,7%), score 90 has 7 frequency (25,9%), score 93 has 1 frequency (3,7%), score 94 has 1 frequency (3,7%), and score 95 has 3 frequency (11,11%). Besides showing the frequency and the histogram of the result of pre-test, the researcher also showed the maximum and minimum score, range, mean, median, mode, variance and standard deviation by using SPSS 16.0 version:

Table 4.7 The Calculation of Pre-test

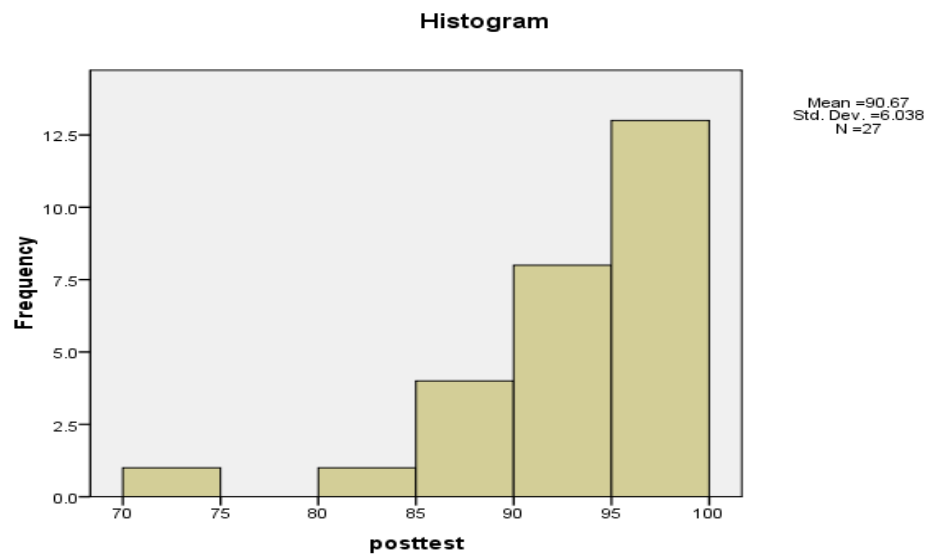
Statistics		
Pretest		
N	Valid	27
	Missing	0
Mean		85.22
Median		85.00
Mode		90
Std. Deviation		7.738
Variance		59.872
Range		25
Minimum		70
Maximum		95
Sum		2301

From the calculation result of visual students' score before being taught using mind mapping, the highest score achieved by students is 95 and the lowest one is 70, from the visual students number is 27. Mean of pre-test is 85.22. It was categorize as Very Good. Median is 85.00, mode is 90, range is 25, the variance is 59.872. The Standard Deviation is 7.738. The Standard Deviation is a short average of differences of all scores from the mean (Brown as cited in Isnawati 2012 : 64). The results of frequency post-test were presented below :

Table 4.8 Frequency of Post-test Score

Posttest					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	70	1	3.7	3.7	3.7
	80	1	3.7	3.7	7.4
	85	4	14.8	14.8	22.2
	90	8	29.6	29.6	51.9
	95	11	40.7	40.7	92.6
	96	1	3.7	3.7	96.3
	97	1	3.7	3.7	100.0
	Total	27	100.0	100.0	

The researcher also gave elaborate histogram to make the data clear. The histogram of the results of post test score were presented below:



Based on table above, it showed that score minimum was 70 and score maximum was 97. Score 70 has 1 frequency (3,70%), 80 has 1 frequency (3.70%), 85 have 4 frequency (14.80%), score 90 have 8 frequency (29,6%), score 95 have 11 frequency (40,7%), score 96 has 1 frequency (3,70%) and score 97 has 1 frequency (3,70%) Besides showing the frequency and the histogram of the result of post test, the researcher also showed the maximum and minimum score, range, mean, median, mode, variance and standard deviation by using SPSS 16.0 version:

Table 4.9 The Calculation of Post-test

Statistics		
Posttest		
N	Valid	27
	Missing	0
Mean		90.67
Median		90.00
Mode		95
Std. Deviation		6.038
Variance		36.462
Range		27
Minimum		70
Maximum		97
Sum		2448

From the calculation result of visual students score after being taught using mind mapping, the highest score achieved by visual students is 97 and the

lowest one is 70, from the visual students number is 27. Mean of post-test is 90.00. It was categorize as Very Good. Median is 90, mode is 95, range is 27, the variance is 36.642. The Standard Deviation is 6.038.

Table 4.10 Paired Sample Test

Paired Samples Test								
	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pretest - posttest	-5.444	6.670	1.284	-8.083	-2.806	-4.241	26	.000

The table clearly showed that mean of the score was -5.444. Meanwhile the standard deviation was 6.670. The standard error mean was 1.284. 95% confidence interval of the difference lower is -8.083 and upper is -2.806, the t-count is 4.241, while df is 26 and the significance (2-tailed) is 0.000. Based on the (Balnaves & Calputi, 2001), to reject null hypothesis the significance less than 0.05. As table 4.10 showed the sig. Was less than 0.05 ($0.000 < 0.005$). Thus, there was enough evidence indicating that the null hypothesis could be rejected and it could be conclude that there was significant difference on visual - learning - styled students in writing argumentative essay before and after taught using mind mapping.

D. Hypothesis Testing

The hypothesis testing of this research as follow:

1. When the significant level is less than 0.05, the alternative hypothesis (H_a) is accepted and null hypothesis (H_o) is rejected. It means that there was significant difference on visual - learning - styled students in writing argumentative essay before and after taught using mind mapping.
2. When the significant level is more than 0.05, the alternative hypothesis (H_a) is accepted and null hypothesis (H_o) is rejected. It means that there was no significant difference on visual - learning - styled students in writing argumentative essay before and after taught using mind mapping.

E. Discussion

The purposes of the research are to find out the score of visual students in writing argumentative essay on the fifth semester English Department before and after being taught by using mind mapping and to find out whether there is significant difference scores on visual learning style students in writing argumentative essay before and after using mind mapping. After the data collected, the data were analyzed by using SPSS 16.0.

Based on the data analysis, the sig. (2 tailed) was 0.000. It means that the significant level was less than 0.05 ($0.000 < 0.05$). Thus, the alternative hypothesis (H_a) was accepted and the null hypothesis (H_o) was rejected.

Therefore, there was significant difference on visual - learning - styled students in writing argumentative essay before and after taught using mind mapping.

From the data above, it could be seen that the visual students in writing argumentative essay on post test is much better than pre test. It means that the visual students had increased after getting treatment. Thus, it could be concluded that the use of mind mapping is effective to visual - learning - styled students in writing argumentative essay at IAIN Tulungagung.

Mind mapping is an alternative to support the visual students easier to get an idea. Mind mapping helps visual students in aspect of how to write something. Before writing, visual students can write the part of thing that they want to write. In this case, visual students know what thing that they should write in next. The interesting of visual students when writing argumentative essay also will be improved. Visual students are demanded to be more creative when write using mind mapping as a technique. Consequently, the score of the visual students after taught using mind mapping technique is better and higher.

The finding in this research showed the score of visual students writing before and after the treatment. The score of visual students change to be better. It made both lecturer and visual students are possible to implement this technique to support visual students writing achievement. It means by this research the lecturer and students can think about the way to support visual students in writing argumentative essay and this technique could be one of the choice.

Beside conducting the treatment, the researcher did general evaluation in one meeting before treatment. General evaluation did not only help the visual students to evaluate the essay but also helped the researcher to the progress of students' essay after they got the treatment. In the previous chapter, the researcher has explain the common mistake about content, paragraphing, capitalizing and sometimes there is no correlation between one sentence to other and from this general evaluation the researcher found the progress after the visual students got the treatment. This finding was in line with (Hay 2008, 309). Students have been taught to utilize mapping for note taking, project planning, and exam review. Some instructors use digital mapping tools to facilitate group brainstorming and discussion (Novak and Canas 2007). Maps have also been used to assess student learning. Students can be asked to make maps at strategic times in a course, "at the start to establish what students know about a topic before instruction begins, during instruction to demonstrate learning progress, and at the end of instruction as an indication of what the student has learned" (Daugherty, Custer, and Dixon 2012, 12).

Mind mapping and concept mapping are ways to visually represent information and ideas. Though often used interchangeably, educators define them in distinct ways. A mind map is a spontaneous way of showing the association between ideas. A concept map is a more deliberate and structured way of representing the relationship between ideas (Davies 2011, 280).

According to Beavers (2014) mind mapping usually contain several ideas articulated in words and images: a mind map contains arrows drawn between associated ideas while a concept map typically labels arrows with descriptions of how those ideas relate to each other. The visual, non-linear nature of both mapping techniques makes them useful tools for educators who want to help students think through complex ideas and processes in accessible ways. While mapping can be achieved with pen and paper, there are a range of mapping programs that allow teachers and students to easily create and share maps.

Based on the explanation above, teaching argumentative essay by using mind mapping is also good in increasing visual students ability in writing argumentative essay especially in students college not only in a school. From the result of data analysis, there is significant different score of visual students in writing argumentative essay before and after they are taught using mind mapping. So, the mind mapping technique is effective and suggested to be used to teach argumentative essay in college.

Based on the result of questionnaire and writing test, the lecturer should apply mind mapping technique in teaching English especially in teaching writing argumentative essay because mind mapping could help visual students to create their idea and thinking when they want to conduct writing. This technique is effective to make students easy to develop their argument in making argumentative essay, mind mapping help them to map their thinking

about what they want to write and also give them some improvisation in writing.

The way to visualize the students' think in the mind mapping is, first they write some sentences in their mind mapping and it will help them to make a good argument in their argumentative essay. Second, mind mapping helps students to make extensive thinking for example, some students want to write a critical argument about a certain topic, and they make a mind mapping before it, they could improve what should they write for their essay. Third, mind mapping makes a lecturer easier to explain how to make a good argumentative essay, the lecturers teach about the rule or some way to make mind mapping before writing.

This way could assist students assist for their essay especially argumentative essay, students can visualize how the topic is, what should they write, and of course the diction in their essay. Mind mapping also helps students to visualize the basic knowledge about the topic that they want to write. It seen based on the research that after students learn of mind mapping, their essay are become systematically well.