

CHAPTER IV

FINDING AND DISCUSSION

This chapter explains about the description of data, hypothesis testing and discussion based on the result of research.

A. The Description of Data

In this part, the researcher presents the students' score of familiarity of topic, argumentative essay and critical thinking. The researcher used test as the instrument of this research. To know the students' score familiarity of topic, the researcher asked students to make main map. In other hand, to know the students' score of argumentative writing and critical thinking the researcher asked students to write argumentative essay. So, the researcher used two instruction to got three data.

1. The Students' Score Familiarity of Topic

The researcher asked students to write main map about a topic that familiar for them. The students' familiarity on certain topic can be seen from the arrangement of concepts, links and linking lines, content, and text. The students' scores of each student showed in table 4.1.

Table 4.1
Students' Score of Familiarity of Topic

NO	NAME	FT
1.	MA	39
2.	SKN	40
3.	HM	44
4.	HJ	41
5.	FSR	43
6.	LIS	39
7.	RIS	41
8.	AQA	41
9.	SL	42
10.	SF	40
11.	N	56
12.	SCN	38
13.	YE	37
14.	FIM	55
15.	YM	40
16.	SK	42
17.	UNH	43
18.	NAR	44
19.	RAS	38
20.	UI	27
21.	AR	27
22.	SMS	52
23.	AL	50
24.	AAS	48
25.	NL	41
26.	AG	36
27.	DNA	42
28.	RKS	37
29.	NF	43
30.	HF	30
31.	EN	42
32.	FZ	41
33.	LW	42
34.	TI	35
35.	FM	31
36.	JW	27

2. The Students' Score of Argumentative Writing

The researcher asked students to write or develop their mind map to be argumentative essay about a topic that familiar for them. To measures an argumentative essay the researcher used some components. The components are content, organization, vocabulary, language use and mechanics. The students' scores of argumentative Writing is showed in table 4.2.

Table 4.2
Students' Score of Argumentative Writing

NO	NAME	ARGUMENTATIVE Writing
1.	MA	70
2.	SKN	69
3.	HM	66
4.	HJ	69
5.	FSR	70
6.	LIS	66
7.	RIS	68
8.	AQA	69
9.	SL	67
10.	SF	70
11.	N	85
12.	SCN	66
13.	YE	67
14.	FIM	80
15.	YM	66
16.	SK	68
17.	UNH	69
18.	NAR	67
19.	RAS	70
20.	UI	55
21.	AR	60
22.	SMS	71
23.	AL	71
24.	AAS	73
25.	NL	66
26.	AG	62
27.	DNA	66
28.	RKS	69
29.	NF	70
30.	HF	63
31.	EN	63
32.	FZ	66
33.	LW	66
34.	TI	65
35.	FM	62
36.	JW	61

3. The Students' Score of Critical Thinking

The students' score of critical thinking can be seen in the students' argumentative essay. To measure critical thinking of students the researcher used some components. The components are arguments, evidence, recognition of opposition, refutation, and conclusion. The students' scores of Critical Thinking each student showed in table 4.3.

Table 4.3
Students' Score of Critical Thinking

NO	NAME	CRITICAL THINKING
1.	MA	14
2.	SKN	17
3.	HM	14
4.	HJ	16
5.	FSR	14
6.	LIS	15
7.	RIS	13
8.	AQA	13
9.	SL	14
10.	SF	16
11.	N	22
12.	SCN	14
13.	YE	15
14.	FIM	21
15.	YM	16
16.	SK	14
17.	UNH	15
18.	NAR	17
19.	RAS	16
20.	UI	8
21.	AR	8
22.	SMS	13
23.	AL	18
24.	AAS	18
25.	NL	16
26.	AG	13
27.	DNA	15
28.	RKS	14
29.	NF	17
30.	HF	11
31.	EN	15
32.	FZ	16
33.	LW	15
34.	TI	13
35.	FM	11
36.	JW	12

B. Correlational Testing

In this research, the researcher used multiple correlation using SPSS 16 to analyze the data. According to Sugiyono (2010, 227) stated that there are some statistic correlational techniques. There are:

Data	Correlational Techniques
Nominal	Kontingency Coefficient
Ordinal	Spearman Rank Kendal Tau
Interval and Ratio	Pearson Product Moment Multiple Correlation Partial Corelation

The data of this research is interval data, and the researcher has two independent variables and a dependent variable. So, the researcher used Multiple Correlation to analyze the relationship of those.

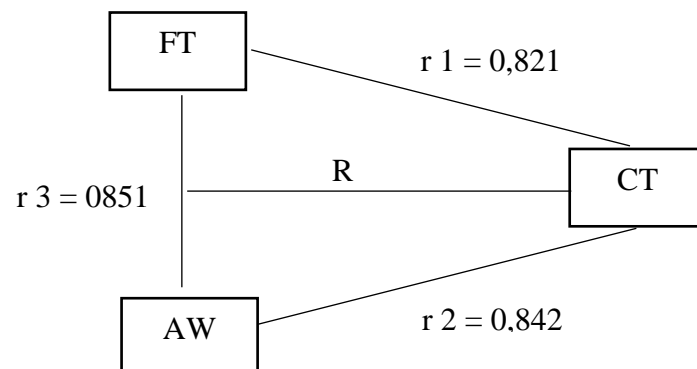
Before the researcher analyze the data, the researcher should count the correlation used Pearson Product Moment.

Correlations

		Familiarity Topic	Argumentative Writing	Critical Thinking
Familiarity Topic	Pearson Correlation	1	.851**	.821**
	Sig. (2-tailed)		.000	.000
	N	36	36	36
Argumentative Writing	Pearson Correlation	.851**	1	.842**
	Sig. (2-tailed)	.000		.000
	N	36	36	36
Critical Thinking	Pearson Correlation	.821**	.842**	1
	Sig. (2-tailed)	.000	.000	
	N	36	36	36

The result showed that:

1. The correlation between Familiarity Topic and Critical Thinking, $r_1=0,821$
2. The correlation between Argumentative Writing and Critical Thinking, $r_2=0,842$
3. The correlation between Familiarity Topic and Argumentative Writing, $r_3=0,851$



According to Sugiyono (2010, 234) stated that to analyze multiple correlation used formula;

$$R = \frac{\sqrt{(r_1)^2 + (r_2)^2 - 2 (r_1) (r_2) (r_3)}}{1 - (r_3)^2}$$

$$R = \frac{\sqrt{(0,821)^2 + (0,842)^2 - 2 (0,821) (0,842) (0,851)}}{1 - (0,851)^2}$$

$$R = \frac{\sqrt{0,674 + 0,708 - 1,176}}{1 - 0,7724}$$

$$R = \frac{\sqrt{1,382 - 1,176}}{0,276}$$

$$R = \frac{\sqrt{0,206}}{0,276}$$

$$R = 0,863$$

The result showed that the score of R or multiple correlation is 0,863. It means that the score of R highest than r1, r2, and r3. According to Prasetyowati (2010, 97) stated that coefficient correlation can be classified as:

0.00 - 0.20 : low correlation and it can be ignored

0.21 - 0.40 : low correlation

0.41 - 0.70 : enough correlation

0.71 - 0.90 : strong correlation

0.91 - 1.00 : very strong correlation

The result showed that R=0,863 classify in the strong correlation, because the score in the range 0,71 until 0,90. It means, Familiarity Topic, Argumentative Writing and Critical Thinking has strong correlation.

D. Discussion

The researcher used multiple correlation analysis. The researcher try-out the instrument to measure the instrument valid and reliable, after the instrument was valid and reliable the researcher used to collect the data. The researcher explained to students about the instruction to makes mind map and write argumentative writing. In this research the researcher used SPSS 16 to analyze the data and used multiple correlation analysis. The analysis used Pearson Product Moment, the result of SPSS 16 show that the correlation between Familiarity Topic and Critical Thinking (r_1) is 0,821. The correlation between Argumentative Writing and Critical Thinking (r_2) is 0,842. The correlation between Familiarity Topic and Argumentative Writing is (r_3) is 0,851. Moreover, the result of R (multiple correlation) is 0,863 and it showed that the score of R highest than r_1 , r_2 , and r_3 . It means that there is any positive correlation of Argumentative Writing with Critical Thinking and Familiarity of Topic with Critical Thinking clasify in the range strong correlation.

It has same line with Oliver-Hoyo (2003) she said the better writing performance is significant to promote the critical thinking as proven in this study which is in line with the finding of. In her research she uses the same rubric (see appendix 5) to measuring students critical thinking. The title of her research is the improvement in student's writing is shaped by feedback given during the introductory college chemistry course.

The contribution of writing performance toward critical thinking skills seems to indicate that the result of the writing namely the learner's essay is connected with cognitive domain (Overbaugh & Schultz, 2008) shown by the reflection of critical thinking elements. It's mean that the quality of writing performance is involve of critical thinking.

Critical thinking is context specific involving background knowledge on certain subject matter only and in another (Emilia, 2010). The familiarity of topic also knows as background, in that way we can take line the familiarity of topic involves the students critical thinking, so if the topic of students is insufficient then the critical thinking skill cannot be identified as well and vice versa.

Based on the finding, Familiarity of Topic, Argumentative Writing and Critical Thinking has positive correlation and each of them give impact in each other, this finding also similar with Indah (2013), On student initiated topic, the more familiar the students with their topic, the higher their writing performance will be, It implies that the specialized knowledge obtained in the reading process may influence the quality of the essay as the product of writing stage. The finding also signifies that the higher the students' writing performance, the better reflection of their critical thinking skills will be. Furthermore, the more familiar the students with their topic also entail better reflection of their critical thinking skills. So, the researcher concludes there are any correlation among familiarity of topic, argumentative writing and critical thinking in 6th semester of English department in IAIN Tulungagung.

The result of this research also full fill the Indonesian Government Regulation (*Peraturan Pemerintah Republik Indonesia/PPRI*) No. 70/2010 section 80.2, which describe the aims of higher education is developing students' critical, innovative, independent, self-confident and entrepreneurship-minded. So, this research can help Indonesian teacher to develop students' critical thinking.

This result of this research going to positive correlation because of students' initiated in choosing the topic of their mind map and argumentative writing. The teacher who will conduct lesson used the same thing as this research should pay attention about the topic that will be chosen by the teacher. Delaney (2008) found that there is positive yet weak correlation between student's performance or critical thinking in writing with teacher initiated topic and their writing performance.

However, a study conducted in Sultan Ageng Tirtayasa University assessed the student's critical thinking skills in sharing their argumentation on a text with topic Ambalat Island chosen by the teacher. The result of the critical thinking test was not satisfying since the students mostly included as unreflective critical thinkers' (Juniardi, 2009). The result of those research showed the critical thinking didn't develop, because the topic chosen by the teacher.

So, students initiated topic was suggested to be applied because it proved to be effective in developing students critical thinking. The more familiar the

students toward the topic, the more critical they are, and finally the higher their performance in writing argumentative text.