

# THE CORRELATION BETWEEN STUDENTS' CRITICAL THINKING AND ARGUMENTATIVE WRITING SKILLS AT THE FIFTH SEMESTER IN IAIN BUKITTINGGI

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## ABSTRACT

This research was directed to find out whether there any significant correlation between students critical thinking and argumentative writing skill at the fifth in IAIN Bukittinggi. The researcher found several problems at the field, the problems were students got difficulties in starting and developing their ideas into writing a paragraph, they have limited vocabulary in English language, and some of students don't use transition signals. This research employed correlation design. The population of this research was the students of fifth semester in Iain Bukittinggi. The researcher used random sampling were the students of class 5A, class 5B, and 5C to get the sample of the research. In collecting the data, the researcher used reading test to know of students of critical thinking and the researcher used of writing test to know of argumentative writing essay. The data were processed and analyzed by SPSS 22.0 Statistic technique of product moment t-test formula and consulted the result into t-table with level of significant  $\alpha = 0.05$ . The result of this study by the correlation coefficient ( $r_{xy}$ ) 0,787. It show that there was high correlation between students critical thinking and argumentative writing, it included the scale of r interpretation score between 0,60- 0,79. Futhermore, with  $df = 25$ . And the level of significance 0,05 ( $\alpha = 5\%$ ) obtained 0,396. So ,  $r_{xy} = 0,787 > t$  table 0,396. So,  $H_a$  was accepted and  $H_o$  was rejected. It means that there was correlation between students critical thinking and argumentative writing skill.

Keywords : Correlation, Critical Thinking, Argumentative Writing

## INTRODUCTION

Writing is the process to obtain information through the message which is conveyed by writer. As Brown (2000) mentioned that writing is a thinking process. In writing, the students should have ability to construct of the idea in written. The writer should be deliver their idea into good sentence, so the reader will understand easier. As the word of Allah in Surah Qs. Al- Alaq 1-5 which recites:

أَقْرَأْ بِأَسْمِ رَبِّكَ الَّذِي خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ اقْرَأْ وَرَبُّكَ الْأَكْرَمُ الَّذِي عَلَّمَ بِالْقَلَمِ عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ

*Recite in the name of your Lord who created. Created man from a clinging substance. Recite, and your Lord is the most Generous. Who taught by the pen. Taught man that which he knew not. (Al Alaq/96:1-5)*

Writing is an activity which convey the message by the writer. Writing is skill that can express the feeling, idea, the argument, opinion, and give the information through of written (Iksan & Duriani, 2015). In writing English, there are some of kinds of the essay which is learnt by the students, such as: descriptive, narrative, expository, persuasive, and argumentative essay. Writing is more useful for students, and the essential one is argumentative writing. In this research the researcher focused on argumentative. Argumentative writing is necessary in the field of education. It is used for writing essay, journal, article, conducting research, and applying scholarship. Therefore, Argumentative writing skill is also regarded as the most difficult skill than writing skill other. It is because composing argumentative essay requires students to have critical thinking, scientific ideas, and argumentative expression. Richard and Schmidt (2010) stated that argumentative writing is the ability to construct their idea to give their opinion or arguments which is supported by the evidence to become a strong reason.

Critical thinking is an important element of all field. Critical thinking means good thinking which is against irrational thinking (Reza Zabihi, 2011). That's mean critical thinking is rationally thinking. Moreover, Critical thinking and argumentative skill have influence of process of thinking which is involve of the idea arguments, and opinion toward of issue related of the topic. Critical thinking is cognitive activity, associated with using the mind (Stella Cottrell, 2005). that's mean critical thinking involved of mind to arguments though of message which is being conveyed through whether of speech or written (Richard and Carolyn, 2005). Similarly, Critical thinking relates to the activity to criticize people or things both in terms of the negative side and the positive side of them that may lead to the comprehension and best judgment about them (Washburn, 2010). Thus, critical thinking referred to analyze and giving arguments.

If the students can investigate about the writers ideas then form a conclusion based on the evidence you find, you will be thinking critically (Reza Zabihi, 2011). Moreover, Ability to write argumentative depends on students critical thinking. (M.Fahim & M.Mirzaii, 2014). Ability of critical thinking will influence to write argumentative skill of students.

The researcher found some problems of writing English language. First, some of students got difficulties in starting and developing their ideas into writing paragraph. The students are difficult to develop ideas into writing paragraph, especially the students make the main idea and give supporting detail related with the topic. Second, students have limited vocabulary in English Language. Some of students are difficult of using vocabulary, choosing of the word which is appropriate. Then, It will be influence of their thinking skills in writing paragraph, the students were difficult to write their opinion, and that will spend their time in writing. Third, some of students don't use transition signals. Transition signals are used to signal relationship between ideas, and transitional signal is the main ways to achieve good cohesion and coherence in writing. Eg ; Furthermore, However, Nevertheless, etc. In addition, The researcher found of problem critical thinking while students cannot

identify, analyze and giving argument by their writing. It necessary of cognitive skill. It maintained that instead of approaching of level thinking.

From the problems occurred above, the researcher need to do research of the correlation between critical thinking and Argumentative writing. Thinking is necessary in writing. And argumentative needs critical thinking, since writer need to analyze, evaluate and arguments to convince the reader. Therefore, in this research, the researcher intends to do research whether there is correlation between critical thinking and student writing skill. The formulation of the problem is : 1. Is there any significant correlation between students critical thinking and argumentative writing ? 2. What is the correlation direction between students critical thinking and argumentative writing? 3. What is the correlation magnitude between students critical thinking and argumentative writing ?

## METHODS

The design of this research was correlation. The correlation was a quantitative research between two variables. Gay stated that a correlational research involves collecting data in order to determine whether, and what degree, a relationship between two or more variables. The researcher identify whether there is a significant correlation between students critical thinking and argumentative writing. Besides, this research conduct to know the direction of correlation between students critical thinking and argumentative writing. This research used quantitative research because it is focus on the product (result of the test) to look learning process of students. The objectives of study to find out correlation between students critical thinking and argumentative writing. The researcher analyzed the data by using Correlation in SPSS (Statistical Program for Social Science) 22.0. The researcher collected the data by looking at the result of argumentative writing .

Table 1. Total Population

Class	Number of Students
A	38
B	37
C	36
Sum	111

Source : Administration staff of IAIN Bukittinggi

In this research, researcher took 25 % sample from total population. This is inline with Sugiyono (2008) who suggested that if the research more than 100 respondents, took 10 % to 25 %.

### ***Technique of data collection***

In this research, researcher use two instruments to get the data. The critical thinking was measured by reading test, and the argumentative writing measured by essay test. This test of critical thinking used Watson- Glaser Critical Thinking Appraisal (W-CGTA) that used measure test of cognitive ability. The test will given to English department students at the fifth semester of IAIN Bukittinggi.

### ***Technique of Data Analysis***

#### *Correlation*

The researcher will use the formulate correlation to analyze the data. The formula used based on correlation in SPSS (Statistical Program for Social Science) 22.0 as follows:

$$r_{xy} = \frac{N \sum XY - (\sum X) \cdot (\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

Note:

$\sum XY$  : The sum of multiplication between X and Y

N : Number of students

$\sum X^2$  : The sum of standard deviations from variable X

$\sum Y^2$  : The sum of standard deviations from variable X

$r_{xy}$  : The coefficient correlation between X and Y

Table 2. The Magnitude of Correlation

The correlation coefficient	Interpretation
0,00- 0,19	Very low correlation
0,20-0,39	Low correlation
0,40- 0,59	Moderate correlation
0,60- 0,79	High correlation
0.80-1,00	Very high correlation

## **RESULTS**

The result of this research was calculated by using formulated correlation. The formula used based on correlation in SPSS. Variable X is critical thinking measured by reading test, and Y which is argumentative writing measured by essay test. To identify whether there is correlation or not between two variables. The researcher used the calculation the product smoment formula. There are some steps that used in getting the correlation between critical thinking of students and argumentative writing. In helping the researcher to analyze the data after each score was ranked the data was tabulated a product moment table as follows:

Table 3. The Score of Critical Thinking by Reading Test

No	Students name of class A	Score	No	Students name of class B	Score	No	Students name of class C	Score
1	AO	74	10.	RN	70	19.	DH	80
2	NM	80	11.	EY	82	20.	ES	78
3	X	57	12.	F	80	21.	DOK	80
4	RSP	70	13.	IJ	74	22.	Y	62
5	SA	78	14.	AG	78	23.	RER	80
6	LA	60	15.	HA	58	24.	RW	78
7	SD	80	16.	CA	74	25.	SR	78
8	ON	78	17.	VS	82	26.	DA	76
9	OAR	82	18.	PFS	72	27.	X	72
$\Sigma$		73,22			75,33			76

Based on the table I. it can be concluded that the score of students critical thinking based on the data indicators of student critical thinking which collected from distributing critical thinking by reading test which is contained as much 27 respondents. it showed that average of class A was 73,22 ,the average of class B was 75,33, and the average of class C was 76.

Table 4. Table II. Score of Argumentative Writing

No	Students name of class A	Score	No	Students name of class B	Score	No	Students name of class C	Score
1	AO	70	10.	RN	90	19.	DH	95
2	NM	95	11.	EY	90	20.	ES	90
3	X	30	12.	F	95	21.	DOK	90
4	RSP	80	13.	IJ	80	22.	Y	75
5	SA	90	14.	AG	75	23.	RER	85
6	LA	70	15.	HA	50	24.	RW	65
7	SD	95	16.	CA	85	25.	SR	85
8	ON	85	17.	VS	100	26.	DA	70
9	OAR	100	18.	PFS	80	27.	X	75
$\Sigma$		79,44			82,78			81,11

Based on the table II, researcher found of average each of class, included class A, class B, and class C. it showed that average of class in was 79,44. The average of class B was 82,77. And the average of class C was 81,11. That's mean the high average of the class was B class.

Table 5. The Result of Coefficient Correlation

No	Name	X	Y	X <sup>2</sup>	Y <sup>2</sup>	XY
1	AO	74	70	5476	4900	5180
2	NM	80	95	6400	9025	7600
3	X	57	30	3249	900	1710
4	RSP	70	80	4900	6400	5600
5	SA	78	90	6084	8100	7020
6	LA	60	70	3600	4900	4200
7	SD	80	95	6400	9025	7600
8	ON	78	85	6084	7225	6630
9	OAR	82	100	6724	10000	8200
10	RN	70	90	4900	8100	6300
11	EY	82	90	6724	8100	7380
12	F	80	95	6400	9025	7600
13	IJ	74	80	5476	6400	5920
14	AG	78	75	6084	5625	5850
15	HA	58	50	3364	2500	2900
16	CA	74	85	5476	7225	6290
17	VS	82	100	6724	10000	8200
18	PFS	72	80	5184	6400	5760
19	DH	80	95	6400	9025	7600
20	ES	78	90	6084	8100	7020
21	DOK	80	90	6400	8100	7200
22	Y	62	75	3844	5625	4650
23	RER	80	85	6400	7225	6800
24	RW	78	65	6084	4225	5070
25	SR	78	85	6084	7225	6630

26	DA	76	70	5776	4900	5320
27	X	72	75	5184	5625	5400
$\Sigma$		2013	2190	151505	183900	165630

Table 6. The Magnitude of Correlation

The correlation coefficient	Interpretation
0,00- 0,19	Very low correlation
0,20-0,39	Low correlation
0,40- 0,59	Moderate correlation
0,60- 0,79	High correlation
0.80-1,00	Very high correlation

From table V, it can be seen of  $R_{xy} = 0,787$ . It displaying there are on interval 0,60-0,79. It can be concluded that the magnitude both of variables which is mean that there is high correlation. it is analyzed based on magnitude of correlation of X variable and Y variable.

## DISCUSSION

### *Hypothesis testing*

In testing researcher Hypothesis , $H_a$ : there is a magnitude between critical thinking of students and argumentative writing.  $H_o$  : there is no magnitude correlation between critical thinking of students and argumentative writing. The researcher regard the index (p) to the r -table. To regard with the r-table. To regard with the r-table, the researcher decided the degree of freedom (df) and also the significant level ( $\alpha$ ).

The degree of freedom in this research of freedom, in this research was  $N-2 = 27-2 = 25$ . Then the researcher used  $\alpha = 0,05$ , to know the critical value of this df. To measure whether the researcher will accept or reject the hypothesis, the researcher used this formulation:<sup>1</sup>

$R_{hit} \geq R_{table}$ , it means  $H_a$  is accepted and  $H_o$  is rejected

$R_{hit} < R_{table}$  it means  $H_a$  is rejected and  $H_o$  is accepted

Since the r- table value on  $df = 25$  and on  $\alpha = 0,05$  was 0,396 and r- hit score required was 0,787 It means the r- hits score was bigger rather then r-table value in the table r. in other words, the  $H_a$  was accepted and the  $H_o$  was rejected.

In addition, based on hypothesis testing, the researcher concluded that there was correlation between critical thinking of students and argumentative writing of IAIN

Bukittinggi. In detail the result that relation on  $df= 25$  and  $\alpha= 5\%$ ,  $r$ -table was obtained 0,396 which smaller than the value of  $r$ -xy 0,787. The result of this result supported the research hypothesis that there mean  $H_a$  is accepted.

### **Correlation Between Critical Thinking and Argumentative Writing**

This section discussed the research findings based on the theories related to the studies. Writing is the process to obtain information through the message which is conveyed by writer. Brown stated that writing is a thinking process. In writing English, there are some of kinds of the essay which is learnt by the students, such as: descriptive, narrative, expository, persuasive, and argumentative. Moreover, Argumentative skill is important to be learnt, because it helps students to convey their opinion or giving argument that helps students to develop their thinking skill. Ability of critical thinking will influence to write argumentative skill of students. In argumentative writing, the students needs to analyze, evaluate and giving arguments.

Argumentative writing is not only about word, phrases and sentence but also complex process that involves the topic, developing the statement, and organizing a coherent and deliver the ideas into writing ( Zhengwei pei and Chaouqu Zheng, 2017 ).That mean critical thinking necessary for a good writing. Because through of writing that can explore to think critically. As Zhengwei pei and Chaouqu Zheng stated that found critical thinking significantly correlated with argumentative writing.

This research was about the correlation between critical thinking and argumentative writing. Farahnaz Rimani stated that critical thinking skill correlate between the quality of writing. The students have good critical thinking skill, that's mean the students also good writing, especially argumentative writing. Meanwhile, the students lack to think critically, that the students poor argumentative writing skill. Because critical thinking will be able to develop their idea critically.

The result of this research was calculated by using formulated correlation. Based on the data analysis, the researcher found that the coefficient of correlation between critical thinking of student and argumentative writing was high correlation. Since the result had positive symbol, it means there was a positive correlation between critical thinking of students and argumentative writing of IAIN Bukittinggi. That means, the correlation between critical thinking of students and argumentative writing were correlate both of them. This research was about the correlation between critical thinking of students and argumentative writing at the fifth semester of English students in IAIN Bukittinggi. It stated that correlates between critical thinking of students as X variable and argumentative writing as Y variable. The data is achieved from reading test and argumentative essay.

Moreover, the magnitude between two variable is high correlation in level 0,60.0,79 it means that high correlation between critical thinking of students and argumentative writing. If the students use critical thinking, it convey a little bit increasing for their essay. Furthermore, critical thinking had influence in writing argumentative essay, In case, if the students critical thinking was good, so that the students write of argumentation also good



because the students able to express and develop their opinions into writing argumentations.

In conclusion, by using product moment formula, the data formula, the data found there is high correlation between critical thinking of students and argumentative writing. Meanwhile by using hypothesis testing the  $H_a$  is accepted that meaning there is high correlation between critical thinking of students and argumentative writing at the fifth semester of IAIN Bukittinggi.

## CONCLUSION

The purpose of this research is to know whether any magnitude correlation between critical thinking of student and argumentative writing in IAIN Bukittinggi. In this research, correlates the score of reading test to measure critical thinking of students, and score of writing essay to measure argumentative writing .

After analyzing the results of the study, the researcher concluded that :

1. The  $H_a$  hypothesis of this research is accepted. Thus , it can be stated that “ magnitude correlation between critical thinking of student and argumentative writing in IAIN Bukittinggi. “the result is required after the researcher consulted t-hit to r-table, t-hit gotten by the researcher was 0,787 whereas r-table on  $\alpha=0,05$  was 0,396 it means, the t-hit is bigger than t-table and  $H_a$  is accepted. That’s means there is significant correlation between critical thinking and argumentative essay.
2. This research result has positive direction between critical thinking of student and argumentative writing. It proves by the result gotten by researcher as much + 0,787.
3. The magnitude of the correlation between students critical thinking of students is level 0,60-0,79 It proves by the coefficient correlation is on category high correlation.

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