



**THE CORRELATION BETWEEN CRITICAL THINKING SKILLS AND  
CRITICAL READING SKILLS OF THE ENGLISH EDUCATION STUDY  
PROGRAM STUDENTS OF SRIWIJAYA UNIVERSITY**

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**Abstract:** Critical thinking skill is one of the most crucial life skills that should be possessed by the students. The objectives of this study were: (1) to find out whether or not there was a significant correlation between student's critical thinking and critical reading skills, (2) to know the student's level of their critical thinking skills, (3) to know the student's level of critical reading skills, (4) to find out the contribution of each aspect of critical thinking skills toward each aspect of critical reading skills, (5) to seek the mean difference of student's critical thinking skills based on their gender, and (6) to seek the mean differences of student's critical reading skills based on their gender. This research was conducted using correlational research design. In collecting the data, there were two tests administered in this study, those were CAAP for Critical Thinking Test and the SAT for Critical Reading skills. The population of this study consisted of 170 undergraduate students of English Education Study Program of Sriwijaya University in Bukit Besar campus in the academic year 2011/2012. 114 out of 170 undergraduate students became the samples of this study who were chosen using proportionate stratified random sampling technique based on the student's gender. Based on the data collected and the analyses applied in this study, the findings revealed that (1) the student's level of critical thinking skill was in the level of analysis, (2) the students were categorized as poor in critical reading skills, (3) there was a significant and positive correlation between student's critical thinking and critical reading skills with  $r$ -value 0.713, (4) only two out of three aspects of critical thinking –analysis and evaluation– that contributed the influence toward each aspect of critical reading skills, (5) there was no mean difference between male and female students toward their critical thinking skills, and (6) there was no mean difference between male and female students toward their critical reading skills.

**Key words:** *Critical Thinking Skills, Critical Reading Skills, and Gender*

## **INTRODUCTION**

It is worth helping the students improve their ability of critical thinking and reading proficiency. In a college level, the students must have both critical thinking and critical reading skills. The most fundamental reason to why it is important to teach critical thinking because it can help the students to be successful in life, either in their education or in their careers. Having good thinking skill is very beneficial for our life today. First, thinking skills can lead us to be a good decision maker. We can decide which one is correct or incorrect; decide what we have to do; decide what we have to choose; and so on. It is in line with Steven D. Schafersman (1991) who suggested that a critical thinker is a good decision maker who can responsibly judge any information well and

can contribute good things to her or his society. Second, good at thinking skills can help the people to be ready to take part in more complex and challenging era of the globalization. Then, having the skill to think critically can help someone to think rationally and reasonably. It means that people always have the rationale for what they think, say, and do. In other words, if thinking skills can be cultivated well, it can empower the people to achieve a life's success either in their academic, carrier, and social life. The quality of our life depends on the quality of our thinking. The better someone in thinking is, the wiser he or she will be. It is clear that good at thinking skill is very crucial for all people.

Thinking skills cannot develop naturally and automatically. They need to be taught, learned, and practiced (Schafersman, 1991; Cottrell, 2005). The practice of critical thinking should be integrated in classrooms through questioning and reasoning. The students should be encouraged to question all information they got and they must also have reasons for their beliefs and actions. A study conducted by Choy and Cheach (2009) found that most of teachers had good perspectives toward the integration of teaching critical thinking in the classroom since this skill can be an intellectual stimuli to facilitate student's learning. Therefore, education for now on should pay close attention to the development of student's thinking skills. The cultivation of thinking skill has been the focus of education for years. It is one of the most life skills that should be possessed by all people in order to survive in the future life (UNESCO, 2011).

Besides thinking skills, good at reading literacy is also important because it can help people to engage with the progress of communication in the global era. Reading is not only the way to share ideas between the writer and the readers, but also a very common way used by most of people in order to get information and enrich their knowledge. Reading is a receptive skill, but it practically involves an active process of thinking and has cognitive consequences for the readers. First, reading involves an active thinking process because it demands the readers to activate their thinking to process all information or messages from the printed symbols and then to relate the information with their prior knowledge during reading. Second, it brings cognitive impacts for the readers that can enrich their minds, their perspectives, and their knowledge through reading. To read critically, the readers need to think critically first. To process and understand the information found in the reading passages, the skills of thinking critically and reading critically work hand in hand (Kurland, 2006). Reading critically is important to comprehend the text. According to Paul and Elder (2007), critical reading is the art of analyzing and evaluating text and thinking with a view to improve the nature of thought. To read critically, the readers need to analyze and evaluate what they read, and then synthesize their own beliefs or ideas based on what they read from the text. To do that, the



readers will also connect or relate their background knowledge with the information found in the text to interpret, evaluate, and decide their alternative responses or interpretations.

In the Faculty of Teacher Training and Education of Sriwijaya University, the students are practiced and taught to be a teacher. Ideally, a teacher should be good at thinking and reading skills. For English majoring, reading skill is taught from semester 1 to semester 5. The writer assumes that critical thinking and critical reading skills are practiced during the reading classes. As the response of the issues elaborated above, the writer will conduct a study to see and find out students' critical thinking skills level and to seek the relationship between critical thinking and critical reading skills of English Education Study Program Students of Sriwijaya University Palembang in the academic years 2011/2012. In relation to the arguments states above, this study was mainly conducted to find out the correlation between critical thinking and critical reading skills of English Education Study Program undergraduate students of Sriwijaya University.

### **CRITICAL THINKING SKILLS**

The one and only human capacity used when they are learning is their thinking. Learning demands the students to think critically. If someone thinks well while learning, she or he will study well and vice versa (Paul & Elder, 2007). Critical thinking has been the focus in education for years. Critical thinking is assumed as one of the most important life skill that should be possessed by people. It is one of the higher-order thinking skills, which deals with problem solving and decision making. Critical thinking skills enable someone to acquire knowledge, understanding, insights, and skills for any fields of subjects (Paul & Elder, 2007).

Many definitions of critical thinking have been formulated by the scholars variously, but most of the definitions have similar principles. Critical thinking can be defined as a cognitive process which involves someone's mind to think using skills of analyzing and evaluating to assess the arguments in order to create a reasonable perspective or thought (Cottrell, 2005; Duron et al., 2006; Paul & Elder, 2007). Critical thinking is assumed as reasoning thinking which is associated with our capacity to think rationally. Thinking rationally here needs the skills of analyzing and evaluating something in detail.

### **CRITICAL READING SKILLS**

It has been stated above that critical reading skill covers the ability to analyze, evaluate, and synthesize or generate ideas based on what one reads. Pirozzi (2003, 325) defines critical reading as "very-high level comprehension of written material requiring interpretation and evaluation skill and it also entails using reference to go beyond what is stated explicitly, filling in informational gaps,

and coming to logical conclusions.” Based on the definition, it is clear that reading is an active process that requires the readers to be critical in processing the information because they should involve the skills of interpretation and evaluation. A critical reader does not simply receive all information they got from their reading, but they will use their cognitive skills in processing the information before they come to the conclusions. Moreover, critical reading refers to a careful, active, reflective, and analytic reading (Kurland, 2006).

Based on the description above, we can say that reading critically can make the readers really comprehend what they read, not only literal meaning but also implied meaning. Comprehension is very essential part in reading process. Critical reading includes some elements; such as: decoding vocabulary, identifying main ideas, identifying causes and effects, identifying detailed information, identifying sequences, and making inferences.

## **GENDER IN LANGUAGE TEACHING**

As we know, gender is one of the most factors influencing students’ achievements in learning process. Mostly, the findings of the studies have revealed that the different gender among the students contributed the gap on students’ achievements. Regarding the students’ critical thinking achievement, there is a disagreement among the study results which investigated the condition of students’ critical thinking skills in terms of their gender. Many studies revealed that males are more critical in thinking than females (Chen, 1996; Aliakbari & Sadeghdaghighi, 2011). However, a study conducted by Babalhavaeji and Ghiasi (2011) revealed that female is better in critical thinking skill than male. Female have higher rate in critical thinking skills than male. These disagreements may depend on cultural or social differences.

Regarding the students reading achievement, the latest survey of PISA in 2009 found that mostly female students performed better than male students in reading achievement (OECD, 2010). Male students performed better than female students in Math. In relation to critical reading skills, female students tend to be better in this skill than male do. It is not really surprised because females enjoy reading more than male students do. Their interests in reading are also different. Female students tend to read more on adventurous books. Meanwhile, male students tend to read comics and humorous books.

## **METHODOLOGY**

The study was conducted on the basis of correlation study which was mainly aimed at finding out whether or not there was a significant correlation between students’ critical thinking skills and critical reading skills.



The subjects of the study were 114 students of English Education Study Program of Siwijaya University in the academic 2011/2012, which were chosen using *proportionate stratified random sampling technique*. They consisted of 11 male students and 103 female students who were form second, fourth, and sixth semester. Gender was used as one consideration in choosing the sample. Data were collected using tests which measured student's critical thinking and critical reading skills. Student's critical thinking skills were measured by using Collegiate Assessment of Academic Proficiency (CAAP) Critical Thinking test which consisted of 32 items of multiple choices. Then, the writer took and then adapted test items which were taken from a ready-made test of the SAT for critical reading published by Thompson. The test consisted of some passages and 20 items of multiple choices. The contents of critical reading test measured the student's skills to decode vocabulary; identify main ideas, details, writer's intention, cause and effect; and make inference. Then, the data collected were analyzed using descriptive and inferential analysis.

## FINDINGS

### The Results of Inferential Analyses

The inferential analyses covered the following results of analyses: (1) the students' level of critical thinking and critical reading skills; (2) the correlation analysis using Pearson Product Moment (PPM analysis); (3) the contribution of each aspect of critical thinking skills toward each aspect of critical reading skills using *Stepwise* method of regression analysis; and (4) the differences between male and female students regarding to their critical thinking and critical reading skills using Independent Sample T-Test.

### Students' Level of Critical Thinking Skills

The percentage analysis used in this study indicated that the percentage of each aspect of critical thinking skills was as follows: 63.7 % in analyzing the arguments; 22 % in evaluating the arguments; and 14.3 % in extending the arguments (creating the argument). It meant that the level of critical thinking skills of the undergraduate students of English Education Study Program of Sriwijaya University in Palembang campus was in the level of analysis. The detailed summary of percentage analysis of student's critical thinking skills was presented in the following table.

**Table 2**  
**The Summary of Student's Level of Critical Thinking Skills**

No.	Aspects of Critical Thinking Skills	Percentage (%)
1.	Analyzing argument	63.7
2.	Evaluating argument	22



3.	Synthesizing argument	14.3
<b>Total</b>		<b>100</b>

### The Students' Level of Critical Reading Skills

The percentage analysis indicated that 5.3 % or 6 out of 114 students were very good in critical reading skill; 27.2 % or 31 out of 114 students were categorized as good in critical reading skill; 25.4 % or 29 out of 114 students were categorized as average in critical reading skill; and 42.1 % or 48 out of 114 students were categorized as poor in critical reading skill. It could be concluded that the undergraduate students of English Education Study Program of Sriwijaya University in Palembang campus were in poor level; with the percentage was 42.1 %. The summary of the student's level of critical reading was presented in the following table.

**Table 3**  
**The Summary of the Student's Level of Critical Reading Skills**

No.	Qualification	Score Range	Frequency	Percentage (%)
1	Very Good	86-100	6	5.3
2	Good	71-85	31	27.2
3	Average	56-70	29	25.4
4	Poor	≤ 55	48	42.1
Total			114	100

### The Correlation Analysis of Critical Thinking Skills and Critical Reading Skills

Based on the analysis using Pearson Product Moment, the correlation among the variables was high, with the  $r$ -value was 0.713. Because the correlation coefficient showed a positive  $r$ -value, it meant that there was a positive correlation among the variable. The more critical students are in thinking, the more critical they are in reading.

### The Contribution of Each Aspect of Critical Thinking Skills toward Each Aspect of Critical Reading Skills

In this study, independent variable -critical thinking skills- consisted of three aspects, those are: analyzing skill, evaluating skill, and creating skill. Whereas, dependent variable of this study – critical reading skills- consisted of six aspects, those are: skill of decoding vocabulary; skill of identifying main ideas, details, cause & effect, and writer purposes; and skill of making inferences. To determine which of each aspect of critical thinking skills toward each aspect of critical reading skills, stepwise regression analysis was applied.



The results revealed that only two aspects of critical thinking skills contributed toward each aspect of critical reading skills. They were analyzing skill and evaluating skill. Analyzing skill gave contribution toward all aspects of critical reading skills. Meanwhile, evaluating skills only contributed the influence toward student's critical reading skills in identifying the details and identifying the writer's purposes. Extending (creating) skill did not contribute the influence toward each aspect of student's skill in reading critically. The summary statistics of regression analysis using *stepwise* method was presented in the table 10 below.

**Table 4**

**The Summary Statistics of the Contribution of Each Aspect of Critical Thinking Skills toward Each Aspect of Critical Reading Skills**

Model	Independent Variables	Dependent Variables	R	R <sup>2</sup>	F	Sig.
1	Analyzing Skills	Decoding Vocabulary	0.239	0.057	6.786	0.010
		Identifying the writer's purposes	0.367	0.135	17.470	0.000
		Identifying the details	0.384	0.148	19.395	0.000
		Identifying the main ideas	0.300	0.090	11.098	0.001
		Identifying the cause and effect	0.378	0.143	18.640	0.000
		Making inferences	0.406	0.165	22.124	0.000
2	Analyzing and Evaluating Skills	Identifying the writer's purposes	0.407	0.166	11.023	0.000
		Identifying the details	0.433	0.188	12.814	0.000

The contribution of analyzing skill toward student's critical reading skills was as follows: 0.057 or 5.7% in decoding vocabulary, 0.090 or 9% in identifying the main ideas, 0.143 or 14.3% in identifying the cause and effect, 0.165 or 16.5% in making inferences, 0.135 or 13.5% in identifying the writer's purposes, and 0.148 or 14.8% in identifying the details. Whereas, the combination of analyzing and evaluating skills contributed the influences toward student's skills in identifying the writer's purposes for 0.166 or 16.6%, and in identifying the details for 0.188 or 18.8%. It meant that evaluating skill contributed the influences toward student's skill in identifying the writer's purpose for 0.031 or 3.1%, and in identifying the details for 0.040 or 4%. Creating skill or Extending the arguments did not show its contribution when it was combined with other skills.

**The Difference of Critical Thinking Skills and Critical Reading Skills Based on Student's Gender**

To know the differences of students' critical thinking and critical reading skills regarding to their gender, independent sample t-test was used. In this case, the total number of male and female students was imbalance. To analyze the mean difference with an imbalanced number of samples, one formulation of independent sample t-test, called *pooled variance*, was used.



**The Difference between Male and Female Students in terms of their Critical Thinking Skills**

Based on the result of independent sample t-test, the mean difference between male and female students regarding to their critical thinking was -0.5185. The following table presented the summary of the independent sample t-test results for critical thinking skills regarding to the student’s gender.

**Table 5**  
**The Result Summary of Independent Sample t-test**

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2 tailed)
<b>Critical Thinking Skills</b>	2.281	.134	-.121	112	.904

To see whether or not there were mean differences between male and female students regarding to their critical thinking skills, it was necessary to compare between the value of  $t_{obtained}$  and the value of  $t_{table}$ . Furthermore, the  $p$ -value (Sig.2-tailed) is  $< 0.05$ . The data shown in the table above indicated that the  $t_{obtained}$  was -0.121. Meanwhile, the value of  $t_{table}$ , with df was 112 and in the 95% confidence interval, was about 1.980. It showed that  $t_{obtained}$  (-0.121) was less than  $t_{table}$  (1.980). Then, the  $p$ -value (sig.2-tailed) was 0.904. This value was higher than 0.05. The significant difference between male and female exist, if the  $t_{obtained}$  is higher than  $t_{table}$ , and if the  $p$ -value (sig.2-tailed)  $< 0.05$ . Since the value of  $t_{obtained} < t_{table}$  and the  $p$ -value (Sig.2-tailed)  $> 0.05$ , it meant that there was no a significant difference between male and female students regarding to their critical thinking skills.

**The Difference between Male and Female Students in Terms of their Critical Reading Skills**

Based on the result of independent sample t-test, the mean difference between male and female students in terms of their critical reading skills was 2.816. The result of Independent Sample T-test was presented in the following table.

**Table 6**  
**The Result of Independent Sample T-test of Critical Reading Skills based on Gender**

	Levene’s Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	Df	Sig. (2-tailed)
Critical Reading Skills	.810	.370	.600	112	.550



The data shown in the table above indicated that the value of  $t_{\text{obtained}}$  was 0.600. Whereas, the value of  $t_{\text{table}}$  was 1.980 (with df 112 and the confidence interval for 95%). It meant that  $t_{\text{obtained}} < t_{\text{table}}$ . Next, the  $p$ -value (sig.2-tailed) was 0.550. It was higher than 0.05. Judging from those findings, it could be concluded that there was no a significant difference of students' critical reading skills based on gender. The result summary of independent sample t-test of critical reading skills based on gender was presented in the following table.

## Discussion

Based on the findings of the study, there are some interpretations that can be described. First, critical thinking skills are correlated positively to students' critical reading skills. It might be caused by the aspects of critical thinking skills, i.e.: analyzing, evaluating, and creating skills; can influence the students' skill in reading critically. This result is in line with the study conducted by Fahim and Sa'eepour (2011) which revealed that critical thinking skills could influence student's language proficiency, especially reading skills. Moreover, a theoretical framework done by Aloqaili (2011) highlighted that there was a well-established correlation between critical thinking skills and reading comprehension.

Second, the finding also revealed that the undergraduate students of English Education Study Program of Sriwijaya University in Bukit Besar campus in the academic year 2011-2012 were in the level of analyzing skill. Mostly the students were able to analyze the arguments. It could be said that the students are still categorized poor in thinking critically. They tent to not be able to evaluate the arguments or even create their own arguments. It was not in line with what have been suggested by Paul and Elder (2007) that the students of higher education level must be able to evaluate and then create their own arguments. It might be caused that the students were not engaged with the teaching and learning process which practiced and demanded the students to think critically when the students were in early education level. Meanwhile, good thinking skills should be promoted and cultivated through education since it cannot be developed naturally (Schaffersman, 1991; Cottrell, 2005). Analyzing skill was the most influential aspects of critical thinking skills toward the students' critical reading skills. As the result, most of students were still classified as poor in critical reading skills. This condition might be influenced by the condition that most of students just could analyze the arguments. It could be concluded that students could not understand the complicated reading passages well. It might be caused they were rarely involved in reading the complex reading passages.

Third, based on the results of regression analysis using stepwise method, it could be interpreted that all aspects of critical reading skills were mostly influenced by the skill of analyzing the arguments. Partly, the analyzing skills of the argument alone mostly influenced the student's skills in making inferences, identifying the details, and identifying the writer's purposes. Meanwhile, analyzing skill only contributed the small influences toward the student's skills of identifying decoding vocabulary and identifying the main ideas. It might be caused the students faced the problem in finding the meaning by using context clues that require the students to analyze the meaning of the words using context. Moreover, in identifying the main ideas the students demand to relate and find out the relevant main gist of each paragraph. This small contribution of analyzing skill might be caused the students were failed to relate the information of each paragraph.

The skill of evaluating the argument just influenced two aspects of critical reading skills, those were: identifying the details and identifying the writer's purposes, when this skill was combined with the skill of analyzing. It was surprised that creating skill did not contribute the influence toward the aspects of critical reading, even in making inferences. It might be caused by the low level of critical thinking skill that the students had.

Fourth, this study found that there was no a significant difference of student's critical thinking and critical reading skills based on gender. This study revealed that male students were the same with female students in terms of critical thinking skills. This result was not in line with the results of the previous study conducted by Chen (1996) which found that male students were more critically in thinking than female students. The same thing was also found in students' critical reading skills. This study also revealed that there was no a significant difference among gender in critical reading skills. This finding rejected the report of the survey of PISA (2009) which highlighted that female students performed better than male students in reading skills. It might be caused there was no a significant mean difference regarding to critical thinking skills.

## **CONCLUSION**

Based on the findings and interpretations, there are some conclusions made. First, critical thinking skill was significantly and positively correlated with students' critical reading skill. Second, the students' level of critical thinking skills was in the level of analyzing the arguments. Third, critical reading skill of the students was in the poor level. Fourth, the aspect of critical thinking skills which was mostly correlated with the student's critical reading skills was analyzing skill. This sub-skill also gave the highest contribution toward the student's critical reading skills, especially decoding vocabulary, identifying main ideas, identifying causes and effects, identifying



details, identifying the writer purposes, and making differences. Meanwhile, evaluating the arguments contributed the influence toward the student's critical reading skill in identifying the writer's purpose and in identifying the details. Fifth, there was no significant difference between male and female students regarding to their critical thinking skills. Finally, there was no significant difference between male and female students regarding to their critical reading skills.

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