Critical Thinking Skills Reflected in Discussion Section of The Thesis

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ABSTRAK

Critical Thinking skill is the ability of cognitive process in developing logical and reflective judgement about what someone believes and does and the ability to analyze and evaluate thought.Critical thinking skill will help the students to decide what sources of information that will be used to support their idea, how to interpret those infomation and organize their writing to be more logical and accurate. The Discussion section in the thesis presents and discusses the findings in details and it needs the reseacher strong argument to convince the reader about the findings. The purpose of the research is to find out and explain the six core of critical thinking skills reflected in discussion section of the thesis written by the graduate english students of Universitas Negeri Padang. The source of data in this research was 9 documents of discussion section of the thesis written by graduate English students of Universitas Negeri Padang. Descriptive using qualitative approach was used in this research. The result of this research reveal that there were 244 times critical thinking skill reflected in the 9 documents of discussion section of the theses written by graduate english students of Universitas Negeri Padang. The finding shows that the students applied four skills out of six critical thinking skills in writing discussion section of the thesis. They were explanation skill 97 times (39.75%), analysis skill 95 times (38.93%), interpretation skill 43 times (17.62%), and inference skill 9 times (3.68%). The evaluation skill and self-regulation skill did not found in this research. Those skills are important skills in writing discussion section of thesis which basically contain depth exploration of the result of the research, interpreting it, and comparing it with existing and relevant theory.

Kata Kunci: Critical Thinking, Discussion Section

INTRODUCTION

Writing is a compulsory subject that has to be learnt by the students especially for students who learn language. It is important because almost all activities in learning process need writing skill, such as writing in doing assignment, doing the task and others. Writing is also a tool of communication to share their ideas, opinion, point of view, and information in the forms of essay, journal and paper.

In higher education, critical thinking is really important and it is listed among the objectives and outcomes in many programs (Guleker, 2015: 6). Critical thinking helps the students in giving guidance in thinking, working and assisting them in determining links with other things more accurately. The students who are critical thinkers will address argument and collect relevant information to support their thought and belief. If it is relate with writing, critical thinking skill will help the students to decide what sources of information that will be used to support their idea, how to interpret those infomation and organize their writing to be more logical and accurate.

Some studies have examined students' critical thinking in writing by several researchers. They found that there was a correlation and positive link between critical thinking and argumentative writing (Sharaqah, 2014; Pei, et all, 2017; Putri, 2018). Previously, other researchers conducted studies which focusing on critical thinking elements in writing (Indah, 2017; Widyastuti, 2018). Other studies have also attempted to reveal students' critical thinking which is reflected in students' text (Rachmawati, 2015; Pramonojati,et all, 2020). Rachmawati (2015) found out that all of the critical thinking aspects (in presenting arguments (claim, reason, evidence, and conclusion) covered in discussion text written by the students. Pramonojati, et all (2020) investigated students' critical thinking in writing background of the research by using table score of critical thinking from Finken and Ennis's book. Their research concluded that critical thinking skill is important aspect that used for create background of study in research.

From the previous research above, it can be seen that there is a gap that has not been discussed by some researchers, namely the skills of critical thinking. In previous studies there were only investigated critical thinking elements, critical thinking aspects and others but there is no one discussed the skills of critical thinking in discussion section of thesis like interpretation skills, analysis skill, inference skill, explanation and etc.

This research aimed to find out the critical thinking skills reflected in discussion section of thesis written by the graduate students. In this research, the researcher focused to find out the *interpretation, analysis, inference, evaluation, explanation, and self-regulation* skill reflected in discussion section of thesis written by the graduate students.

The result of this research may contribute to: theoretically, this research is expected to enrich the theories for the lecturer and students on the field of critical thinking area, especially in critical thinking skill in writing. Second, practically, the result of this research is expected to raise awareness among the lecturers and students about the critical thinking in writing subject. In order they can apply critical thinking in teaching and learning process, especially in writing disscussionsection of writing.

LITERATURE REVIEW

Argumentative text is one of the text genres that can promote students' critical thinking skills. Theses are one type of argumentative writing (Emilia, 2010:102). A thesis should have the element of : introduction, the Literature Review, Methodology, Result and Discussion, and Conclusion (Tim Penyusun, 2011).Introduction discusses the background of the problem that will be studied. The second chapter, Literature review, consists of the theories that will support the study. The methodology chapter discusses about the method that will be used in collecting the data. The fourth chapter is Result and Discussion that

contain research finding and discussion of the matter studied. The last chapter is conclusion and suggestion that summarize the findings briefly.

The Discussion and Result chapter plays significant rolesin every thesis (Paltridge and Stairfield in Emilia, 2010:102) because this chapter presents and discusses the findings in details and it needs the reseacher strong argument to convince the reader about the findings. In arguing the result, the writer should provide and explore the evidence and the data clearly. It can be in the form of graphs, tables, or pictures. The writer also need to dig up the data with the related theory and integrate the result to get the implication for current theory and study (Rudestam and Newton, 2001 in Qaseem (2017:16)). All of the aspects in this chapter contain deep arguments and for that critical thinking is needed.

There are some skills in critical thinking (Facione and Facione, 1994). First skill is interpretation. This skill express the meaning of a variety of experiences, situations, data , events and so on. The second skill is analysis.This skill notice and relate relationship among statements, questions, concept, or other form of representation that intends to express beliefs, judgements, experiences, reasons, information or opinion. The next skill is explanation. This skill convey, justify and present the argument to be clear and understandable. Then the inference skillneed to draw a logical conclusion and to form notion and hypothesis and to decide the consequences of data, statements evidences and etc. Evaluation skill is the other skill in critical thinking. This skill evaluate the credibilty of statements which are descriptions of a person's perception, experiences situation and so on. The last is self regulation skill. This skill self consciously monitor someone's coginitve activities , the aspects used in those activities in educing the result. Thus, it can be concluded that critical thinking skill is very essential in writing a thesis, especially in writing discussion chapter. Therefore, the students are expected to have those skills in order to produce a good writing thesis.

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METHOD OF THE STUDY

1.1. Research Method

Descriptive using qualitative approach was used for this reserach since the reseracher investigated a recent phenomenon happened in the place of the reserach.

1.2. Source od Data

The source of data in this research was 9 documents of discussion section of theses written by graduate English students of Universitas Negeri Padang. The data in this research were the sentences which contained critical skills in discussion section of thesis written by graduate English students of Universitas Negeri Padang.

RESULT

Based on the data collected, there were found around 244 times the critical thinking skills were reflected by the students in discussion section of their theses. The explanation skill around 97 times, analysis skill reflected around 95 times, interpretation skill reflected around 43 times, inference skill around 9 times, while evaluation skill and self-regulation skill did not find in these documents. It can be seen in the following table:

Table 1.
The frequency of critical thinking skills reflected by the graduate students in discussion section of THE thesis

No	Critical Thinking Skills	Frequency	Percentage
1	Explanation	97	39.75 %
2	Analysis	95	38.93 %
3	Interpretation	43	17.62 %
4	Inference	9	3.68 %
5	Evaluation	0	0 %
6	Self-regulation	0	0 %
	Total	244	100%

Here, the most frequent skills were reflected by the graduate students in their discussion section of thesis were explanation skill occurring 97 times (39.75%) and analysis skill occurring 95 times (38.93 %). Then, the least frequent skill were reflected by the graduate students in their discussion section of thesis were evaluation and self-regulation skill (0%). Both these skills were not reflected in students' writing discussion section in their thesis.

The detail description of each critical thinking skills were reflected by the graduate students in discussion section of their theses can be seen in the following explanation:

a. Explanation Skill

Explanation skill is communicating the findings and reasoning. It should be clear and understandable. Facione and Gittens (2013:33) state that an explanation skill are divided into three sub skills. They are *stating the results*, *justifying procedures* and *presenting argument* sub skills. This skill was reflected 97 times in the 9 sources of data. The following graphic shows the distribution of the application of the sub skills.

Table 2.
The distribution frequency of explanation skill

No	Sub skills	Frequency	Percentage
1	Stating result	91	93.81%
2	Justifying procedures	0	0%
3	Presenting argument	6	6.19
	Total	97	100 %

The table above explained that explanation skill was reflected 97 times in the 9 sources of data. The percentage was obtained by dividing the frequency of each skill with the total number of frequency and then multiplied by 100 %.The result shows that the *stating result* sub skill was mostly reflected by the students (93.81 %) and *presenting arguments*was reflected 6 times (6.19%) while the *justifying procedures*sub skill was not found (0%).

b. Analysis Skill

Analysis refers to the ability to examine *something* such as a problem, a set of data, information, or a text. Students with analytical skill can examine information, can understand what it means and can explain something in details. Facione and Gittens (2013:33) states analysis skill is the skill to identify the intended and actual inferential relationship among statements, questions, concepts, descriptions or other forms of representation intended to express beliefs, judgments, experiences, reasons, information or opinions. There are three sub skills in this analysis skill. They are *examining ideas*, *identifying argument*, and *identifying reason and claims*.

Table 3.
The distribution frequency of analysis skill

No	Sub skills	Frequency	Percentage
1	Examining ideas	34	35.78 %
2	Identifying argument	18	18.94 %
3	Identifying reason and claims	43	45.26 %
	Total	95	100 %

In the table above, the analysis skill was reflected 95 times of 9 sources of data. The percentage was obtained by dividing the frequency of each skill with the total number of frequency and then multiplied by 100 %. From the table above, itis shown that *the identifying reason and claims* was reflected 43 times (45.26 %) and *examining ideas* was reflected 34 times (35.78 %) and *identifying argument* was reflected 18 times (18.94%)

c. Interpretation Skill

Based the theory, Facione and Gittens(2013:33) states that interpretation refers to comprehend and express the meaning or significance of a wide variety of experience, situation, data, events, judgments, conventions, beliefs, rules, procedures, or criteria. Interpretation skill can be applied to anything, such as written messages, chart, diagram, map, graphs, etc. There are three sub skills that are included in this skill, they are *categorizing, decoding significance, and clarifying meaning*.

Table 4.
The distribution frequency of interpretation skill

No	Sub skills	Frequency	Percentage
1	Categorizing	1	2.32 %
2	Decoding significance	15	34.88
3	Clarifying meaning	27	62.79
	Total	43	100 %

From the table, it can be seen the number of each sub skills of interpretation reflected in the discussion section of thesis written by the students. There were 43 sub skills reflected in the 9 theses. The percentage was obtained by dividing the frequency of each skill with the total number of frequency and then multiplied by 100 %.Then, the result shows

clarifying meaning reflected 27 times (62.79 %) and *decoding significance* reflected 15 times (34.88 %) and *categorizing* reflected 1 times (2.32 %) .

d. Inference Skill

An inference is a conclusion coming to by analyzing information. According to Facione and Gittens (2013:33) states that inference belongs to identify and secure elements needed to draw reasonable conclusion, to form conjectures and hypothesis, to consider relevant information and to reduce the consequences flowing from the data. In writing a discussion section, the students' inference skill reflected from the conclusion that the writer stated. It should be based on the available evidence that he got in conducting the research. There are three sub skills in the inference skill. They are *querying evidence*, *conjecturing alternatives*, and *drawing conclusionusing inductive and deductive reasoning.*

Table 5.
The distribution frequency of inference skill

No	Sub skills	Frequency	Percentage
1	Query evidence	2	22.22 %
2	Conjecture alternatives	0	0 %
3	Draw conclusion using inductive and deductive reasoning	7	77.78 %
	Total	9	100 %

Based on the table above, it can be seen that inference skill was reflected 9 times ofthe 9 sources of data. The percentage was obtained by dividing the frequency of each skill with the total number of frequency and then multiplied by 100 %.The result shows that the *drawing the conclusion using inductive and deductive reasoning*sub skill reflected 7 times(77.78 %) and *querying evidence* reflected twice (22.22 %) and *conjecturing alternative* sub skill did not reflect in their writing.

e. Evaluation Skill

Evaluation skill is the ability to access the credibility of statement or other representation. It also refers to the ability to access the logical strength of the actual or intended inferential relationship among statement. According to Facione and Gittens (2013:33), an evaluation also defined as to judge the value or worth or someone or something. The sub skill of an evaluation skill are *accessing the credibility of claims* and *assessing quality of arguments* using inductive or deductive reasoning. Both the evaluation skill and its sub skill were not found in the students' writing of discussion section (0%).

f. Self-Regulation Skill

According to Facione and Gittens (2013:33), self-regulation skill in critical thinking means Self-consciously to monitor one's cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting either one's reasoning or one's results. This skill wasnot found in the students' writing in the discussion section (0%).

DISCUSSION

The result of this study found around 244 critical thinking skills reflected by the students in 9 discussion section of 9 theses. The explanation skill around 97 times, analysis

skill reflected around 95 times, interpretation skill reflected around 43 times, inference skill around 9 times, while evaluation skill and self-regulation skill did not find in these documents. It could be stated that critical thinking skills are reflected in writing a thesis, especially in discussion section. Almost all of the critical thinking skills and their sub skills were found in the discussion section. It occurs because critical thinking skills are relevant to argumentative writing and thesis is one type of argumentative writing (Emilia, 2010:102).

The most frequently reflected skill in the writing discussion section of thesis were *Explanation skill* and *analysis skill*. It was found that the *explanation skill* reflected 97 times and *analysis skill* reflected 95 times of 244 data. This happens because a discussion section of a thesis contains a review of the overall research results regarding to what was found in the research process. Then, discussion section also discusses how these findings contributed to the researchers' field study. In line with this, Bavdekar (2017: 40) states

> a well- written discussion section includes a statement of important result, reference to previously published relevant literature, comparison of study results with previously reported findings, explanation of results, elucidations of strengths and weaknesses of the study…

From the quotation above, it is clear that what should be stated in the discussion section is fulfilled by *explanation* and *analysis* skill.

There are three sub skills included in *explanation skill*; *stating result*, *justifying procedures*, and *presenting argument*. *The stating result* sub skill in explanation skill was frequently reflected in this research. In writing discussion section, a writer should present the result or finding clearly. In agreement with this, Bavdekar (2017:40) states that discussion section consists of describing the resultincluding all important observations. More over, the writer also presents the procedures by displaying graphs, figures, tables, and son and states the argument by providing the evidence such as statistics and example. To construct this becomes readable and understandble, the explanation skill is needed. Facione in Meiramova (2017:26) states that a good critical thinker should know how to illustrate what is in their mind and how they have come to the perception.

The second skill reflected in discussion section was *analysis skill*. There are three sub skills. They are *examining ideas*, *identifying argument*, and *identifying reason and claim*. All of those sub skillswere identified in students' writing discussion section. *Identifying reason and claim* sub skill in analysis skill was frequently found in the students' writing. This skill is comonly seen in giving argument related to the topic studied such as related to the previous studies or related theories and demanding the aspect discussed like citing the expert opinion or comment. In line with Swales and Feak (1994) in Emilia (2010:102) that one of very typically found in the discussion section of the thesis are comparison with other work/previous research.

The next skill identified in discussion section is *interpretation skill*. It is divided into three sub skills; *categorizing*, *decoding significance*, and *clarifying meaning*. Based on the result of the research, all sub skills of interpretation were found in discussion section. *The clarifying meaning* sub skill in interpretation skillwas the most frequently appeared in students'writing in

discussion section. Through thissub skill, thewriters explored the meaning to ensure the readers's understanding of the writers' instension.

A rare skill reflected in discussion section of thesis written by the graduate students is inference skill. There are three sub skills included in this skill. They are *querying evidence*, *conjecturing alternatives*, and *drawing conclusion* sub skills. The *drawing conclusion* sub skill was identifed more than the other sub skills of inference skill. Some writers drew conclusion in the discussion by reflecting to the evidence that got by the researcher. It supported by Swales and Feak in Emilia (2010:102) that reference to the theory underpinning the study and conclusion that might be drawn are very typically found in the discussion section of the thesis.

Yet, it is found there was no *evaluation skill* and *self-regulation skill* reflected in the discussion section of thesis. This happens because *evaluation skills* used to assess the credibility of the claims people make or post, and to assess the quality of reasoning people display when they make arguments or give explanation. Then, *self-regulation skill* means controlling one's cognitive activities, the element used in those activities, the result educed to one's own inferential judgments (facione and facione, 2006). Both skills did not find in this research. This is because the data collected only showed or described the data as they were. None of the sentences identified as evaluative and corrective word which judge something incorrect or correct.

CONCLUSION

Based on the research that has been conducted from the analyzing students' discussion section of thesis written by graduate students, there are some findings which can be discussed. It can be conclude as follows:

1. Critical thinking skills in discussion section of thesis in this research were reflected in 4 skills; interpretation, analysis, inference, and explanation. There were 2 skills, evaluation and self-regulation, did not reflect in in thisresearch.

2. There were 244 times of critical thinking skill reflected by the students in nine of discussion section of thesis in this research.

3. All of the skills of critical thinking reflected by the students in the form of statement and part of sentences that they stated in their thesis.

Based on the result of this research, there is implication for English graduate students in writing assignment especially in writing thesis. This researchmakes the students realize that critical thinking skills are needed in writingdiscussion section in their thesis. In can be seen from the result of this reserach which found that critical thinking skills were reflected in the discussion section oftheir thesis.

ACKNOWLEGMENT

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