

## Critical thinking implementation in an English education course: Why is it so challenging?

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### Abstract

*Critical thinking has been acknowledged essential in education field but there have been debates on unclear instruction in implementing critical thinking skill in the classroom. Due to the urgency on the needs of critical thinking skill cultivation, this research aims to investigate the implementation of critical thinking skill instructional strategies in Critical Reading and Writing I and the students' perception towards their critical thinking skill in CRW I. In order to attain the data, the researchers employed mixed-method. Observation sheet, interview guidelines, close-ended and open-ended questionnaires were utilized. The data of the close-ended questionnaire set in the Likert Scale distributed to 17 students was analyzed by measuring the central tendency or the mean and it indicates that the value of the students' perceived critical thinking skills is 3.89 (middle to high) in which the highest 4.18 is on interpretation skill and the lowest 3.71 is analysis skill. Meanwhile, for the open-ended questionnaire, the data was analyzed utilizing coding procedure. Further, in analyzing the data of the interview, the researchers recorded the data into transcripts and analyzed them utilizing selective coding and it reveals that the instructional strategies used are explicit instruction, teacher questioning and active and cooperative learning.*

**Keywords:** *Critical thinking; Instructional strategies; English education course*

### INTRODUCTION

In recent decades, critical thinking has been a popular topic being investigated by substantial number of researchers to explore its fundamental role in education field. The Indonesian government has categorized critical thinking as one of the most essential skills students must possess at primary to high school, as enacted by the 2013 Curriculum. Furthermore, in higher education, critical thinking skill is mentioned in the document published by Indonesian Ministry of Education and Culture (*Permendikbud*) explaining the guidelines for the development of the curriculum education in the industry era 4.0 to support *Merdeka Belajar – Kampus Merdeka* program (the freedom to learn). It is stated

that the learning outcomes formulated are required to cover the 21<sup>st</sup> century skills needed in the industrial era 4.0, which cultivate Higher Order Thinking Skills such as Communication, Collaboration, Critical thinking, Creative thinking, Computational logic, Compassion and Civic responsibility (Junaidi, 2020). Hence, it can be concluded that Indonesian government mandates that higher education can generate competent professionals (Ratnadewi & Yuniarti, 2019). These regulations also demonstrate that the Indonesian government intends to be responsive to the urgent needs to cope with the present challenges of the 4.0 industrial revolution era.

For these reasons, critical thinking needs to be taught and implemented in higher education, especially in teacher education program. It is because student teachers are going to teach this skill to their students at school as well. In English Language Study Program of Sanata Dharma University, a compulsory course, namely Critical Reading and Writing I (CRW I) conducted at odd semester for the second year students, is done as the follow-up of Basic Reading II, Basic Reading I, Paragraph Writing and Basic Writing. This course is a prerequisite course for the students to take Critical Reading and Writing II which is further intended to prepare students to have Academic Writing, Proposal Seminar and Thesis to accomplish their undergraduate program. As shown in the name of the course, it represents the main learning objective of the course. Thus, in order to accomplish the course, students should have critical thinking skill in reading and writing. Based on the course outline of CRW I, the objectives of CRW I course are to educate students to employ reasonable principles, meticulous standard of proof, and inquiry to the analysis and argument of claims, beliefs and issues.

Although all members of society have been aware of the essential role of critical thinking, there have been debates on the unclear instruction of critical thinking skill done inside the classroom. Puadi Ilyas (2016) agrees that there are no clear and explicit examples for teachers on how to promote students critical thinking skills. Further, Cottrell (2017) explains that there are some barriers to critical thinking skill such as lack of methods, strategies or practice of critical thinking skill. It is explained that although people are aware of the importance of critical thinking and willing to be more critical, some of them do not really understand what action to carry out in order to improve critical thinking skills. Moreover, it is also questionable whether students are aware of their critical thinking skill development in the process of teaching and learning inside the classroom. Thus, based on the existing research studies above, the researchers tried to fill the research gaps by addressing the following research questions: 1) What are students' perception towards their critical thinking skill in CRW I? 2) How are critical thinking skill instructional strategies implemented in CRW I?

### **Critical thinking**

Critical thinking is illustrated as a metacognitive method which entail a variety of subskills such as interpretation, evaluation, and inference that improve the chances of generating a rational deduction to arrive to a particular argument or a solution to a question when used appropriately (Dwyer et al., 2014). Furthermore, the term of critical thinking has been related to Higher Order Thinking as classified in Bloom's taxonomy (Al Zahrani & Elyas, 2017; Ennis, 1993). Bloom's revised taxonomy classified six types of thinking. The six types of thinking, classified from Lower Order Thinking skills (LOTs) to Higher Order Thinking skills (HOTs), are remember, understand, apply, analyze, evaluate, and create. Analyze, evaluate and create are often offered as a definition of critical thinking.

Furthermore, critical thinking is believed to primarily relate to the cognitive processes relating to the interpretation and assessment of knowledge. Through critical thinking, a person may draw conclusions based on the data presented and assess the available information with regard to the dimensions of validity and reliability (Salmon, 2013). Critical thinking is also explained as a mastery that is done by the possession and development of mental abilities linked to understanding and the rational assessment of insights from various sources (Hughes & Lavery, 2015). Summarizing and concluding previous researchers' ideas about critical thinking, Aygün and Fatih (2020) state that critical thinking is understood to be a purposeful, self-regulatory decision that results in the perception, examination, assessment, and inference of the conceptual, methodological, criteria, or contextual evidence on which that judgment is based.

Meanwhile, explaining critical thinking as a process, Cottrell (2017) defines critical thinking as a "complex process of deliberation" (p.2) which require an extensive series of attitudes and skills such as:

- (1) to distinguish the positions, claims and assumptions of others,
- (2) assessing evidence for various viewpoints,
- (3) objectively analyze competing claims and facts,
- (4) to be able to read between lines and to detect incorrect or unjust conclusions,
- (5) acknowledging strategies used to make those positions more acceptable,
- (6) reflecting in a systematic fashion on problems, applying rationale and perspective to work,
- (7) making claims on whether the arguments are legitimate and reasonable
- (8) to present a perspective in an effective manner which managed to convince others.

Whereas, Facione (2013) proposes six core skills a critical thinker should possess. They are interpretation, analysis, inference, evaluation, explanation and self-regulation.

### **Critical thinking in reading and writing**

In the context of English as a foreign language in Indonesia, most students still find challenges in developing critical thinking in English language. Specifically, in reading and writing skill, students encounter barriers to figure out information embedded on the passages and experience problems to elaborate the intended information into written text (Yudha, 2019). In order to overcome those challenges, it is stated that critical thinking skill in reading and writing can be used as students' knowledge, skills and attitudes in reading and writing (Cottrell, 2017). Further, in order to develop critical thinking skills in reading and writing, developing declarative, procedural and conditional knowledge are necessary to be conducted in teaching critical reading and writing (Brown, 1987). It is because describing and explaining what critical thinking is can be done by seeing it from the perspectives of metacognitive strategies. As cited in Mbato (2019), in reading and writing, the correlation between metacognition, critical thinking and text understanding cannot be separated. Further, it is stated that critical thinking in reading can be grouped into three phases of metacognition, namely planning, monitoring, and evaluating. They are explained using the three types of knowledge namely declarative, procedural and conditional knowledge. In line with that idea, Zhao et al. (2016) add that students need critical thinking abilities in English language learning to read beyond the literal, write persuasive essays, communicate their ideas with sufficient supporting evidence, and question the opinion of others.

### **Critical thinking instructional strategies**

Responding to the previous understanding on critical thinking, in order to understand the teachers' views of their own activities to develop the reflective practice of students, Almulla (2018) conducted a study about critical thinking as process-based approach. In the study, he saw that critical thinking covers the practices of promoting dialogue, building a supportive experience for learners, incorporating critical reflection into curriculum design, and offering problem-solving activities for the students.

In addition to the importance of conducting proper instructional strategies for critical thinking, Zhao et al. (2016) also further illustrate the possible instructional strategies for critical thinking, such as explicit instruction, teacher questioning and cooperative learning strategies. Explicit instruction is claimed to advance critical thinking skills by manifesting the clear expected critical thinking skills to students. Further, teacher questioning also proposes crucial role to stimulate critical thinking. Asking higher-level probing questions enable students to expand their ideas. At last, cooperative learning focusing on students' participation, cooperation, and interaction can also stimulate students to think critically.

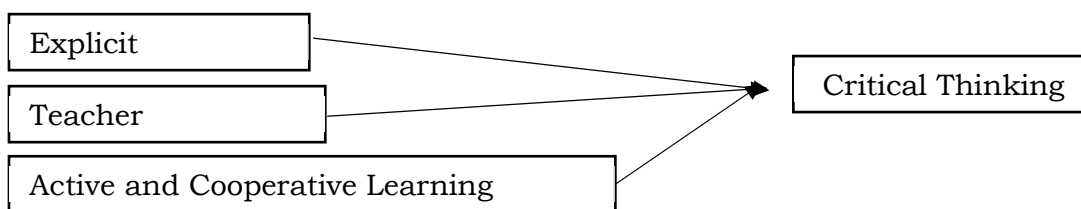


Figure 1. Instructional strategies for critical thinking (Zhao et al., 2016)

Furthermore, in responding to the confusion on the instructional strategies which can be used to teach critical thinking skills, a literature study conducted by Alsaleh (2020) reveals that the strategies to teach critical thinking skills are problem-based learning, collaborative learning, discussion methods, writing exercises, reading, questioning techniques, peer review and technology to enhance critical thinking strategies.

## **METHOD**

### **Participants**

This study sought to investigate how critical thinking skill instructional strategies were implemented in CRW I and the students' perception towards their critical thinking skill in CRW I during the online learning. Hence, the researchers observed the class and interviewed the lecturer who taught CRW I class in order to figure out the students' perception towards their critical thinking skill in CRW I. Further, 17 students of CRW I class participated voluntarily by filling in the close-ended and open-ended questionnaire in order to figure out the implementation of critical thinking skill instructional strategies in CRW I. The recruitment of those 17 participants was carried out by sending them invitation to participate the survey using Google Forms.

### **Procedures**

This research employed a mixed method. The researchers undertook three steps to collect the data. Firstly, the researchers conducted an observation in Critical Reading and Writing I to have more thoughtful understanding of the activities and curriculum implemented in the class. Secondly, in order to support the data gained from the observation, the researchers conducted a video call interview with the lecturer to obtain richer data about the implementation of critical thinking skill in CRW I class. In conducting the interview, the researchers used the reference framework of the study from Almulla (2018) and Zhao et al. (2016). At last, in order to investigate students' perception towards their critical thinking skill in CRW I, the researchers distributed a close-ended and an open-ended questionnaire. The questionnaire was adapted from Facione (2013) and (Salvador et al., 2017). The questionnaire and interview were written and carried in English.

## Data analysis

In order to present the data collected from the questionnaire, the Likert Scale data was analyzed by measuring the central tendency or the mean of the close-ended questionnaire result. Meanwhile, for the open-ended questionnaire, the data was analyzed using open coding. Further, in order to analyze the data of the interview, the researchers recorded the data into transcripts and analyze them utilizing selective coding by picking out categories based on the corresponding theories and overarching data. The main theories utilized are from Facione (2013) and Zhao et al. (2016).

## RESULTS AND DISCUSSION

### The students' perception towards their critical thinking skill in CRW I

In order to figure out students' perception towards their critical thinking skill in CRW I, a close-ended and an open-ended questionnaire were distributed using Google Forms. The close-ended questionnaire consisted of 13 items in which the ten items were intended to classify their perceived critical thinking skills categories. Meanwhile, the other three items of the close-ended questionnaire and four questions of the open-ended questionnaire were used to help them reflect on the implementation of critical thinking skill in the class. Further, the items ranged from 1-5 of the degree of agreements. The results of the survey are as follows.

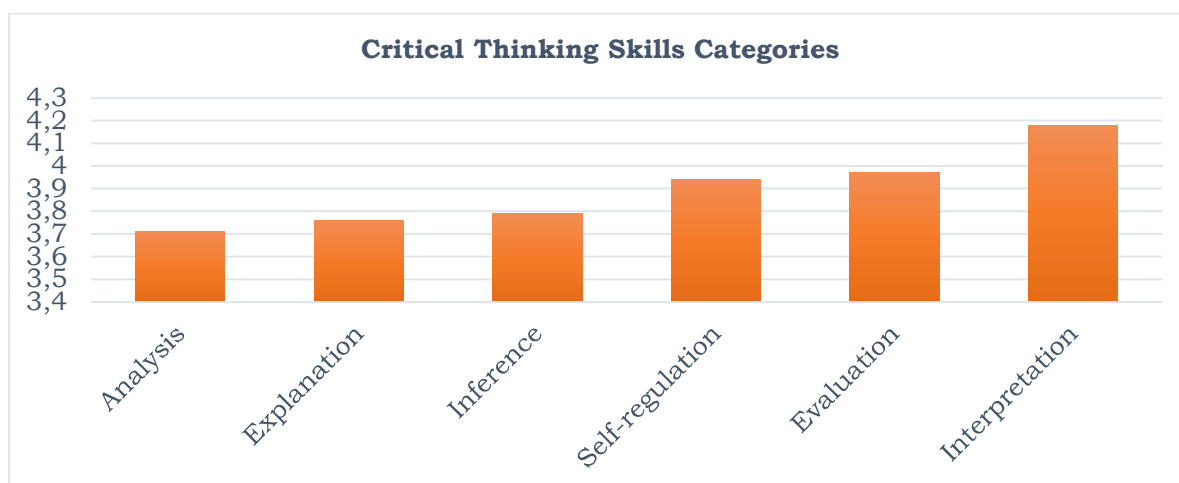


Figure 2. Students' perceived critical thinking skills categories

As demonstrated in Figure 2 above, the six critical thinking skills categories show different scores that represent the degree of agreements of students' perceived critical thinking skills. The six critical thinking skills are interpretation, analysis, inference, evaluation, explanation and self-regulation. Based on the result, the general mean score of the six categories is 3.89. Meanwhile, the highest mean score is interpretation and the lowest is analysis. The interpretation skill yields mean score of 4.18 while the analysis skill is 3.71. The rest of the skills which are explanation yielding mean score 3.76, inference

yielding mean score 3.79, self-regulation yielding mean score 3.94 and evaluation yielding mean score 3.97. The scores of inference and explanation skill differ only slightly.

Furthermore, students were asked to evaluate their perceived accomplishment of critical thinking in the class. The results are presented in the following table:

Table 1: Students' perceived critical thinking skills

| No. | Statements   | Mean |
|-----|--|------|
| 1   | The class has helped me to improve my skill in generating critical questions towards a product of reading and writing. | 4.12 |
| 2   | I was aware of how, why and when to give critiques or appreciation towards other people's arguments.                   | 3.71 |
| 3   | I have improved my ability to respond and give critical comments on reading texts and my friends' feedbacks.           | 3.76 |

In the open-ended items, students were asked four questions regarding their experience and perception towards the critical thinking implementation in the class. At first, students were asked to define what critical thinking is. Based on the result of the open-ended questionnaire, it was found out that there were several different perceptions towards critical thinking. The analysis of the results can be seen in the table below.

Table 2. Students' thoughts about critical thinking

| No. | Students' Thoughts about Critical Thinking  |
|-----|---|
| 1   | The ability not only to understand but also analyze, question, and relate them based on the existing facts and theories           |
| 2   | Curiosity about anything by questioning it using 5W+1H  |
| 3   | The ability to think rationally and engage in reflective and independent thinking   |
| 4   | The ability to think critically in dealing with a problem and look for relevant information and find a way out to solve a problem |

After being asked to define what critical thinking is, the students were requested to answer whether or not that critical thinking has been implemented in the class. All of them answered "yes". The students explained that the critical thinking was implemented through the instructions and activities of analyzing, questioning, evaluating, clarifying one's ideas by comparing with other sources.

In the implementation of critical thinking, some of the students encountered several challenges in accomplishing the tasks. Thus, in order to

overcome those challenges, the students used several strategies. The summary of the result is as follows.

Table 3. Challenges and strategies in critical thinking implementation

| <b>Challenges</b>                                  | <b>Strategies</b>        |
|--|--------------------------|
| Writing essays                                     | Working with friends     |
| Giving critical opinion towards reading            | Looking for many sources |
| Comprehending long reading with difficult dictions | Asking the lecturer      |
| Analyzing reading                                  |                          |
| Group assignment                                   |                          |

Based on the results of the close-ended questionnaire used to figure out students' perceived critical thinking skills classified in the six critical thinking skills categories, the general mean score is 3.89 which can be claimed as "middle to high". This general mean score is higher compared to the general mean score of the research done by Zhou et al. (2015) which was recorded at 2.67 value and slightly higher than the result of Orszag (2015) at 3.88. Further, the highest mean score of this research is 4.18 belonging to interpretation skill. This result is similar to the result of the research conducted by Salvador et al., (2017), yet is different with the result of the research by Zhou et al., (2015) whose the highest mean score is on inference skill and Orszag (2015) whose the highest is on evaluation skill. According to Facione (2013), the sub-skills of categorization in interpretation skill are decoding significance, and clarifying meaning. Interpretation skill is the skill to comprehend and articulate the meaning or significance of a broad range of information or ideas, which often means interpreting them from various perspectives by placing oneself in the perspective of another person and taking into account the wider social and cultural context in which information and concepts take place (Facione, 2013; Orszag, 2015). Specifically, it is also the skill which covers the ability to recognize the elements, structure, main idea and purpose of the text (Zhou et al., 2015). In this case, the students in CRW I class perceive themselves possess good interpretation skill as explained by previous theories.

On the other hand, the lowest mean score of the research is on analysis skill which has slight difference with explanation (at the level of 3.71 and 3.76). This result is quite similar to the research conducted by Salvador et al. (2017) whose lowest score is evaluation and analysis with slight difference, yet is different with Zhou et al. (2015) and Orszag (2015) whose lowest mean score is on self-regulation. In order to examine facts and evidence, obtain various viewpoints, or solve problems, analysis may usually be conducted and it can be interpreted as breaking down information into components and defining the organizational structure and relationships between thoughts. Training students to pay attention to the implied sense of the mood or attitude of the speaker, discern facts from opinions, refine various opinions, and find reasons to support views will help them master this skill (Facione, 2013; Orszag, 2015; Zhou et al., 2015).



In open-ended questionnaire, students gave further explanation about the challenges they encounter in the class and the strategies they used to handle them. In line with the result of the close-ended questionnaire that the lowest mean score of the six critical thinking skill categories are on analysis and explanation, in open-ended questionnaire, they also mentioned they struggled in analyzing reading, giving critical opinion towards reading and writing essays. The results of close-ended and open-ended questionnaire that students struggled in analyzing reading and giving critical opinion towards reading are in line with the result of the observation. It could be seen clearly that when the lecturer asked students their opinion about certain issues to be discussed, they did not seem to be enthusiastic or responsive to give their critical opinion. They also seemed to struggle to explain and correlate their original ideas with the issues in the reading.

In explanation skill, students should be able to express one's own view, find logical supporting arguments and leave reviews according to the text by clearly present their argument, defending their position and justifying their conclusions (Orszag, 2015; Zhou et al., 2015). This is in line with what has been explained by Facione (2013) that explanation skill is the skill to assert and justify that reasoning in terms of the evidential, conceptual, methodological, criteria, and contextual considerations on which one's findings were founded and to address one's reasoning in the form of solid arguments.

### **The implementation of critical thinking skill instructional strategies in CRW I**

To investigate the implementation of critical thinking skill instructional strategies in CRW I, the researchers undertook an observation and interview with the lecturer. Further, the lecturers of this course are required to help students develop declarative knowledge at the beginning of the lesson and move to procedural and conditional knowledge at the end of the course.

From the interview, the lecturer specified the context of critical thinking skill implemented in CRW I class into critical thinking in reading and writing. She stated that critical thinking in reading and writing is the ability to analyze and evaluate any kinds of ideas specifically in a form of written text. This is similar to the learning objectives of a first-year writing course intended for student's first introductions to significant features of critical thinking at university level which aims to prepare students to be able to review a formal report and evaluate it and write an essay (Harrell & Wetzell, 2015). These both studies, further, depict the higher order thinking skills proposed by Bloom's revised taxonomy which are analyze and evaluate.

Further, concerning the objectives of CRW I which are to develop students' declarative, procedural and conditional knowledge, the lecturer described declarative knowledge as the knowledge to understand what it is, such as identifying aspects in reading. Meanwhile, procedural knowledge means understanding what to write and for whom it is to write. The last, conditional

knowledge means understanding when to write and why using certain words. This metacognition is implemented to help students possess critical thinking skills specifically in reading and writing. On the other hand, Mehta and Al-Mahrooqi (2015) see it in a reversed way. They express that a transition phase of critical reasoning qualities and a successful retention and assessment technique is by means of undertaking the writing process itself. Further, they explain that much research has examined writing as the most effective techniques that would help to make the transition from declarative to procedural knowledge and make a life skill of critical thinking. However, this transition cannot be accomplished without proper instruction in the writing classroom.

In order to implement the critical thinking, the lecturer explain the activities have been conducted in the class are as follows.

“The activities designed to teach critical thinking are reading, identifying and analyzing the elements in the reading text. I also asked for responses and agreement or disagreement towards certain ideas which have to be developed into critical responses. Moreover, peer review activity is done not only to give response towards friends’ work but also to help them see what is good and what needs to be developed. This is done to help them as well in evaluating themselves.”

Based on the observation, besides conducting discussion or certain reading texts and issues, the lecturer also conducted peer review activity in the middle of their argumentative writing task. Similarly, Alsaleh (2020) also proposes several activities which can be conducted to teach critical thinking such as reading, writing exercises, peer review, discussion, collaborative task, etc. Further, in order to conduct these activities, the lecturer employed several strategies. The instructional strategies are namely explicit instruction, teacher questioning and active and cooperative learning.

### **Explicit instruction**

In implementing critical thinking, the lecturer used explicit instruction to direct the students perform the tasks. Regarding the use of explicit instruction in the class, she stated that

“Explicit instruction conducted to teach critical thinking can be seen in the reading text provided along with the exercises. For example, students are asked do analysis, identification, evaluation or summary of a reading text.” (Interview, 12 November 2020)

The lecturer provided students with clear instructions to do their task. The instruction facilitated students to understand better what to accomplish in the task. This explanation hits right on the nail of what it means by explicit instruction suggested by Zhao et al. (2016). It is stated that In EFL classrooms, explicit instruction demands that not only do teachers need to understand how critical thinking is associated to language learning, but also be prepared to

describe, demonstrate, and inculcate the principles of critical thinking into their classroom activities and lesson designs. For example, teachers should specifically teach the following main reading-related critical skills in English reading instruction. These skills involve (a) analytical skills (b) inferential skills and (c) evaluative skills.

By making the expected critical thinking skills and provisions transparent to learners, the explicit instruction aims to advance critical thinking competence. On the other hand, while students may well be interested in deep subject content learning in implicit instruction, basic critical thinking concepts are not introduced. Thus, it is anticipated that their critical thinking will be established as an expected outcome of content learning (Zhao et al., 2016).

### **Teacher questioning**

Regarding the necessity of teacher questioning in teaching critical thinking, the lecturer stated that

“Before reading activity, I asked questions to boost their curiosity. After that, I tried to stimulate their critical thinking by asking for their opinion. However, I am still adapting with the online learning. It is challenging to have online discussion. If it is offline, I can directly ask them questions and they can respond to me faster”. (Interview, 12 November 2020)

The lecturer’s explanation on questioning strategy she has mentioned confirms the data gained from observation that she did questioning strategy. The questions varied from lower-level questions to higher-level questions. The lower-level questions would be in a form of literal questions taken from the previous information. Whereas, the higher-level one required students to expand their ideas and give their own opinion or perception towards certain issues. It is also in line with her explanation that students did not respond to her questions quickly. The lecturer needed invite certain students to answer those questions.

Besides intended for checking students’ comprehension (Sano, 2014), teacher questioning is an essential way to stimulate students to think critically (Zhao et al., 2016). However, the lecturer should be aware of the level questions she is asking to the students. Higher-level questions will facilitate students to conclude, judge, analyze, expand their thoughts, and thus have great power to stimulate their critical thinking. Likewise, teachers must provide students with meaningful interaction and allow them adequate opportunities to reflect so that they can engage themselves in critical thinking, as it is not an easy task to do. This is supported by a research conducted in Korea concluding that higher-level questioning is not recommended for students below the intermediate level as they still struggle in comprehending the materials (DeWaelche, 2015).

Further, it is also emphasized that after a brief silent period, language teachers should deter to answer their own questions because it could be a detrimental teaching practice that moves away the work of thinking process and learning from students. Thus, it is such a big task for the lecturer as she

emphasized that in online learning, it takes much time for the students to give response since the students are still adapting to be more communicative.

### **Active and cooperative learning**

Realizing the essential of cooperative learning in teaching critical thinking, the lecturer explained that

“Almost all of the assignments in the course are done collaboratively. Although essay writing is an individual work, along the process they also do peer review which facilitates them to share ideas. Students love to interact with their friends as they are more motivated to do the assignments and they can share ideas.”  
(Interview, 12 November 2020)

Based on the observation, most of the activities required group discussion. They could be conducted by having synchronous activity such as video conference or asynchronous one. The collaborative activities were such as discussion on certain reading texts, exercises and presentation. Furthermore, the individual assignment such as writing still required collaborative working since they were assigned to do peer review.

It is stated that researchers have proposed the introduction of active and cooperative learning that focuses on student engagement, collaboration and interaction to help students improve their critical thinking (Zhao et al., 2016). A collaborative learning is one of effective strategies which can be undertaken to teach critical thinking (Alsaleh, 2020). The activities include group discussion, debate and peer-questioning.

### **CONCLUSION**

Based on the results of the research, it can be concluded that the students' perceived critical thinking seems to be quite moderate as the mean score is categorized as “middle to high level”. The students also feel confident in interpretation skill in which they are able to comprehend the information in the reading. However, they still find challenges and struggle in analysis and explanation skill. This result is corroborated with the findings obtained in the interview with the lecturer, stating that the students' essay writing is not yet satisfying. This might occur due to rather rough transition from the basic writing skill to more academic and critical writing skill. Besides, due to the limited time and interaction experienced in online learning, the lecturer might not be able to give in-depth and more personalized supervision to the students as usually undertaken in offline learning. Further, the active learning could not be implemented well as the students apparently still struggle in online interaction. Delayed responses from the students towards the teacher's constructive questioning activities emerge to be the characteristics of this online learning process. However, cooperative learning seems to be effective in

engaging the students to do the tasks since they are able to communicate with their friends and empower one another.

At last, it is important to acknowledge the limitation of this study. Based on the analysis of this study, the researchers find it essential to investigate why the students' active participation on their learning cannot be implemented well in online learning. In fact, active learning strategy can substantially contribute to students' success in practicing their essay writing skill, which eventually constitutes the objectives of the course to establish students' critical thinking. Nevertheless, departing from the substantial gaps between the course objectives of critical thinking instruction and the challenges of online learning reality, further research studies in this area are essentially worth investigating.

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