Metacognitive and critical thinking practices in developing EFL students' argumentative writing skills

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ABSTRACT

This action research examined the roles of writing instruction involving metacognitive and critical thinking strategy to improve argumentative writing skills of college students in Indonesia. Argumentative writing is one of the pivotal topics among researchers investigating ways to improve college-level writing. This study involved 88 students of three parallel classes enrolled in the *writing skill development* course. Employing Kemmis and McTaggart's (1988, 2014) model of action research, this study employed a three-cycle action study in one semester, covering four stages of learning tasks: understanding of problem, monitoring of students' learning activities, problem-solving, assessment, and conclusion drawing. Each cycle provided learning exercises of metacognitive and critical thinking to hone the students' argumentative writing skills. Referring to critical skill criteria as a baseline, the analysis found that employing metacognitive and critical thinking process in the instructional treatments enabled the students to improve their argumentative writing skills. The finding indicates a pivotal role of incorporating metacognition in writing instruction as a strategy to improve college-level writing skills.

Keywords: Action research; argumentative writing skill; critical thinking; metacognition

INTRODUCTION

Metacognition and critical thinking are among the skills to be developed in especially argumentative writing instruction. Considering the less productive Indonesian writers relative to those in more developed world, the Indonesian Minister of Education and Culture (MOEC) is challenged by a difficult task to improve students' writing skills from primary to tertiary educational levels (MOEC, 2020). Today the MOEC puts a greater attention to promote language learning emphasizing on reading comprehension and writing skills. Among the most crucial factors that affect the quality of university students' writing skills is the low level of reading literacy of the 13-year-old Indonesian school students (OECD, 2019). This is one of the greatest challenges for the Indonesian government to address, especially for teacher education institutions

to play their most important role. Writing is such an essential skill employing written language patterns to express ideas or messages. Setyowati, et al. (2017) even consider that the students' writing skill is among the forceful measures of their intelligence. One can deliver his or her ideas to people in distance through writing. In the limitless national borders due to rapid changes of digital technology, practically more people around the world are bestowed with the freedom to express widely differing ideas (Anggraeny & Putra, 2017; Setyowati, et al., 2017). The National Association of Colleges and Employers [NACE] (2016) also indicates that critical thinking/problem-solving skills through writing were ranked most important by the 144 surveyed employers. Many scholars and studies have also discussed the standing of critical thinking skills in the context of 21st Century

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education and workforces also discussed critical thinking education in the context of students' abilities to enter a modern, 21stcentury workforce (Geertsen, 2003). Therefore, it is important for a university to develop the capacity of students' metacognition and critical thinking for improvement of their argumentative writing skills.

Argumentative writings show their distinctive features from other genres. For instance, a different genre of writing, a news report, provides a space for writers to indirectly converse with readers. This typical genre usually contains messages to persuade readers to accept or to respond to the writer's point of view about the message he or she wrote (Meiranti, 2015). Regardless of the type or genre of a writing, one thing in common among writers is, according to Anggraeny et al. (2017), the writer's intention for a response as expected to gain from from the readers.

With regard to argumentative writing, there have been some studies attempting to discover a real or authentic measure of argumentative writing. The study of Révész et al. (2017), for example, assigned the research subjects to choose one of the two choices suggested and write an argumentative essay, subject to a faithfully qualitative assessment. Another example is a study conducted by Ong and Zhang (2010) on the impact of task complexity on L2 writing processes. The study employed a more authentic measure of argumentative writing. In the study, the participants were given a provision of the simple condition of conceptual supporting ideas that could be used in their essays. They were provided with the content support assumed to decrease task complexity by allowing the participants to save their mental resources from generating ideas at the planning stage and thereby direct the surplus attention to linguistic aspects during writing processes (Ong & Zhang, 2010, p. 732).

Previous studies to improve argumentative writing by setting on planning time and task condition show relatively consistent results especially in terms of the negligible effects on argumentative writing. Ong (2014) discovered that manipulating both planning time and task conditions variables, especially the level of complexity and content provision, affects the measure of argumentative writing. Other studies in L2 writing investigated planning time (Ellis & Yuan 2004), task conditions (Ong, 2014), and the interactions between both variables (Ong & Zhang, 2013) with relatively consistent results. These studies reveal that it takes longer for the participants to complete their given tasks without the content support. In addition, they found that the writing task was difficult to carry out in a more complex condition. Albeit no significant effect of planning time and task conditions, the task conditions affect the general accuracy of the writers' performance in all tasks (Ong & Zhang, 2013). Moreover, planning time significantly influences the complexity of the essays. The writers in the 20-minute planning time group produced more complex texts compared with those in the zero-minute planning time group (Ong & Zhang, 2013).

This study aimed to discover an instructional treatment in improving the students' argumentative writing skills in one university in Indonesia. A preliminary study and test had been performed in September 2018, prior to the actual research. As a result, some obstacles in teaching students on argumentative writing were uncovered; some of them were so clear-cut while others require more fundamental and research-based measures to deal with. More specifically, this study aimed to address the following research questions: (1) were the strategies involving metacognition and critical thinking able to develop the students' argumentative writing, and (2) if so, to what extent do the metacognition and critical thinking practices improve the students' argumentative writing skills?

Argumentative writing
Argumentative writing is a very important skill for the 21st Century especially as the ability to think and argue reasonably (UNESCO, 2013). An argument essentially is an author's attempt to deliver rational persuasion to his or her audience in either oral or written expressions or public presentation. It is typically a discrete communicative act, with fairly well defined, temporal or spatial boundaries (Vorobej, 2009). As a building block of an argumentative writing, an argument comes about when an author of the argument attempts to convince a certain targeted author's audience to believe something by providing appeals to reasons or evidence (Vorobej, 2009). An argumentative writing inspires students to build arguments by carrying out independent investigation into a topic to come up with a collection, generation, and evaluation of evidence to enable them to develop their own stand on the matter. Through practices of argumentative writing, students are typically required to take a position on an issue and explain their position with research from reliable and credible sources (Setyowati, et al., 2017). Ferretti and De La Paz (2011) were also concerned about students' preparedness for the modern workplace characterized by heightened interest in their argumentative writing. It was found that students were expected to make and evaluate interpretative claims by using disciplinary strategies and evaluative standards when reading and writing.

An argument is closely associated with critical thinking in which the term argument refers to a set of claims. Some of which are presented as reasons for accepting some further claims and a conclusion (Indrilla & Ciptaningrum, 2018). An argumentative writing aims to influence the audience by presenting facts and reasons in such a way that they are

believed or accepted. To be compelling, a writer must outline the facts in a systematic, orderly, and logical fashion to achieve a convincing conclusion (Fisher, 2013). It is generally assumed that metacognition contributes to sharpening one's argument (Fisher, 2013). The reasons that persuade readers to accept their conclusion can vary in their structure and content, but they always contain a set of claims presented as reasons for accepting some further claims and intended to persuade their audience (Indrilla & CIptaningrum, 2018; Setyowati et al., 2017).

Argumentative writing is a vital means of exercising the ability of metacognitive and critical thinking. Fisher (2013) also believed that the higher the writers' metacognitive and critical thinking skill, the more likely they would be able to fluently write an argumentative essay. A study conducted by Ong & Zhang (2010), however, found no significant differences in the overall writing patterns, both in terms of fluency and pausing, between the descriptive and evaluative writing tasks. Their study is a quantitative survey on writing fluency, measured in terms of mean number of words produced per-minutes in addition to linguistic complexity of the written texts, and the independent variables are the amount of planning time, provision of supporting ideas and macro-structure, and availability of draft during revision. One possible explanation is that writing fluency as measured in terms of the quantity of words-per-minute has little to do with the quality argumentative ideas in writing.

Metacognition

The term metacognition has been often associated with John Flavell since 1979, and the term is often simply defined as "thinking about thinking" (Livingstone, 2003, p. 2). According to John Plavel (Weinert and Kluwe, 1987), the term metacognition refers to higher order thinking which involves an active control over the cognitive processes engaged in learning. Metacognition is part of the vocabulary of educational psychologists, and this reflects on one's cognitive experiences through learning (Livingstone, 2003; van Zile-Tamsen, 1996). Metacognition plays a critical role in successful learning, therefore, a study on metacognitive activity and development is important to determine how students can be taught to better apply their cognitive resources through metacognitive control (Livingstone, 2003).

Despite many theoretical and metalinguistic concepts that we now use to understand the varieties of traditional argumentations (van Eemeren et al., 2014), metacognition remains essential to influence argumentative writing. In that case, Olson (2016) argued that the importance of this metacognition cannot be exaggerated as he suggests that "…any full writing system is capable of rendering in visual

form anything that is spoken" (p. 22); while Ferretti and De La Paz (2011) asserted that: "Anything written up in an argumentative essay can be mentally represented" (p. 1346). The more important thing in this context instead is the creation of written meta-representational concepts and principles focusing on reasonable argumentation to result in a sapient consciousness of the relevance, validity, and evidential basis for reasons (Olson, 2016).

Research on the development of metacognition began in the 1970s through the works of Ann Brown, John Flavell, and their colleagues (Iftikhar, 2014). Metacognition was initially defined as knowledge on cognitive activity using cognitive activity as its cognitive object or that regulates cognitive activity itself (Graham & Harris, 2000). It is clear that the definition refers to a person's knowledge concerning information processing skills and knowledge of the nature of cognitive tasks as well as the strategies to handle those tasks. This concept also includes executive skills related with self-monitoring and self-regulating of their own cognitive activities. Metacognition that is of the important factors to drive argument is *knowledge*, awareness, and control of oneself, whereas metacognitive development is an attempt to enhance one's metacognitive skills towards greater knowledge, awareness, and control over one's learning (Cubukcu, 2008). Both are essential tools to practice and mature writer's power of reasoning.

In the absence of the power of reasoning, insensitivity to alternative perspectives and ignorance of evaluative standards manifest in the quality of students' written arguments (NCES, 2012). Thus, it is essential to examine the extent to which metacognitive arguments enable students to express them in an argumentative writing. Different studies show that students' metacognition skills are imperative to guide them for their self-directed learning processes. Haiduc (2011) and Cubukcu (2008) consistently showed that metacognition endures significant improvement of students' argumentative skills. Their studies reflect that reinforcing the idea of metacognition in a pedagogical sphere has come into effect for the students' argumentative writing to thrive. Haiduc (2011) and Cubukcu, (2008) are amongst the examples of assessing how metacognitive strategy is vital to build a better students' learning style through both teaching approaches and students' practices of writing.

The study of the third and fifth grades shows a remarkable improvement of the trained students compared to those who did not receive such training on their improved argumentative skill reflected in their writing (Iftikhar et al., 2014). They accomplished their analysis and conclude that: "The practice of metacognition is vital to polish learners' perceptions, reflections and critical thinking skills"

(p 193). Haiduc (2008) and Iftikhar (2014) found no difficulty and hesitation encountered by the teachers or instructors to apply metacognitive strategies, yet it depends very much on the demand of the existing situation in which the strategy is useful and effective to acquire desired results. This is such a powerful strategy by which students are encouraged to practice metacognitive reasoning on interpretative claims by using disciplinary as well as interdisciplinary strategies for their reading comprehension and argumentative writing (Ferretti & De La Paz, 2011).

The results of studies analyzing different types and uses of metacognition strategies and their impact on the students' argumentative skills are consistently encouraging. Studies of Baker (2008) and Ryan and Deci (2000) indicated that the emphasis of teaching on metacognition and motivation strategies as well as the combination of the two achieve the maximum advantages of metacognition to affect the desired level of writing skills. Yet, Iftikhar (2014) further argued that to teach metacognition, teachers need improvement of their relevant skills to employ affective metacognition strategies; to be most helpful and useful they too need improvement of their ability to make some adjustments in teaching students of different grade levels (elementary, middle and high).

Metacognition exposes a higher thinking process; it is reflective in nature and keeps moving beyond normal thinking in gesturing the thinking activity itself (Larkin, 2009). The existing literature shows that strategies of teaching and practice of critical thinking in the high school classroom enable students to improve their academic performance (Hove, 2011). The capacity of students to exercise critical thinking is such an essential 21st Century life skill (Galinsky, 2010). In the case of Thailand, Changwong et al. (2018) highlight that: "Under the vision outlined in Thailand 4.0, critical thinking skills have become one of the key pillars of a new, knowledge-based economy (p 37). Therefore, it is such vital for school's classrooms to apply critical pedagogy to develop students' metacognitive and critical thinking skills to practice in argumentative writing.

Critical thinking
Critical thinking is the most important type of higher thinking skills that education from elementary to higher education levels, plays a crucial role to enhance students' reasoning. Bassham et al. (2013) argued that "...college education has to be accountable for the development of critical thinking skills that, in turn, lead to higher-order thinking" (p. 46). Costa and Kallick (2014) as well as Kraisuth and Panjakajornsak (2017) equally contended that critical thinking skills have to be one of all essential lists behind college and career

readiness.

To develop students' critical thinking and metacognitive arguments, critical pedagogy is one the most vital instructional approaches. (Reyes & Vallone, 2008; Qian, 2015). Critical thinking should enable students more than just to read the words in a textbook but also to read the world such as to closely examine the existing power structures and their roles within them (Reyes & Vallone, 2008; Wink, 2000). To read the world, students should be familiar with the practice of critical thinking and share their thoughts to others through argumentative writing. In view of Pei et al. (2017), argumentative writing is not such a simple task; it is not only a structural process of words, phrases and sentences but also a complex process that involves grasping the topic, developing the statement, organizing a coherent discourse and putting ideas into writing. Pei et al. (2017) further suggested that: "...it calls for intellectual capacity for thinking critically" (p. 31). Therefore, a good part of writing should be able to demonstrate certain aspects of the writer's critical thinking.

Some studies on critical thinking have found remarkable leads to literacy research on writing. For example, Yang and Wu (2016) found a significant relationship between critical thinking and writing performance of non-English-major postgraduate students in China against the different degrees of language, content and materials. Although Pei et al. (2017) identified no significant correlation between critical thinking and argumentative writing performance, another part of their finding remains encouraging. Using textual analysis of typical essays, they indicated that the strong learners in critical thinking could overtake their weak counterparts, especially in relation to the relevance, comprehension, clarity and flexibility of argumentative writing (p. 32). It can be highlighted in both studies that to obtain good results in good argumentative writing, the approach needs to integrate critical thinking into writing instruction.

Employing the Watson-Glaser Critical Thinking Appraisal model, Qian (2015) discovered a significant relationship between the argumentative writing capacity of junior English students majoring EFL and their critical thinking skills. Although Mu (2016) unveiled the problems of critical thinking, notably in precision, depth and rhetorical appropriateness of English argumentative writing (p 32), the result remains inspiring. Mu (2016) successfully assessed a significant effect of critical thinking practices on their essays against the criteria on the quality of critical thinking. Mu's (2016) results indicated a significant correlation between the study participants' critical thinking and writing ability. Among the subskills of writing ability, only organization was correlated with certain sub skills of critical thinking. The results of multiple regression analysis revealed that among the five

components of critical thinking, analysis and evaluation turned out to be the strongest predictors of argumentative writing performance.

Most of the studies revealed that metacognitive and critical thinking are of the proven strategies that significantly effect students' argumentative writing. Referring to the vision outlined in Thailand 4.0, for example, critical thinking skills have become one of the key pillars of a new, knowledge-based economy (Changwong, et al., 2018, p. 37). Some problems exist, however, in terms of assessment of precision, profoundness, and metaphorical appropriateness of the writing especially through a quantitative survey and objective measurement methods (Mu, 2016). This study attempted to contribute to the validity of assessment techniques by way of subjective and expertise-based evaluation of students' argumentative writing employing the action research procedures.

METHOD

This study was performed in the Department of Indonesian Language and Literature, Faculty of Language and Art, in a university in Jakarta, Indonesia. This study was to promote the University's mission to enable its students, prospective teachers, to promote their argumentative writing ability. The research subjects were the third semester students enrolled in the Writing Skills Development course. This study followed an action research method, using Kemmis and McTaggart's (1988) model as a spiral of steps consisting of the four stages: planning, acting, observing, and reflecting. Kemmis et al. (2014) developed this model further into the spiral of a self-reflective thinking in which the students can apply the metacognition and critical thinking practices and their ideas into argumentative writing. This model began with planning, acting, observing, reflecting to re-planning. The third semester students were selected as participants since they were in the middle of preparing for their final research assignment.

This classroom action research took place for one semester period of August 2018 to January 2019, following the preliminary study in July 2018. The design of action research had been planned for a month before it was implemented. The design of the action research plan for this consisted of field observation and preparation of lesson plans using metacognition and critical thinking strategies, syllabus and learning model, observation sheet, field note and interview guideline, action research schedule, and achievement criteria and target. Focusing on improving the students' metacognition and critical thinking strategies in their argumentative essays, this study was carried out in four stages of writing: problem understanding, monitoring and assessment, problem solving practices, evaluation and conclusion drawing.

This action research took place in three cycles, beginning with cycle I (baseline) in which each of the teachers delivered learning tasks to students to write up an argumentative essay that consisted of introduction, developed rules of spelling, content of argument, and conclusion. There was no treatment in cycle I, as it was the period of assigning students to choose a topic to write up and come up with their completed essays. The assessment results of the students' work at the end of this cycle served as the baseline that the teachers needed to follow up with treatment in the first and second cycles. The second cycle was the actual students' practices of writing under the guidance of the teachers through the weekly discussions and feedback. The discussions took place for 100 minutes each, and the last week of each month was for final evaluation and reflection. The third cycle was the more intensive student practices of writing to come up with an essay subject to review in the weekly discussions guided by a teacher to feed them back for improvement.

The assessment results in each of the cycles against the baseline performance measured in cycle I reflect that the writing lesson was successful to impart students' writing skills. To be successful in writing, the students should be able to achieve the "acceptable" level of performance with reference to the assessment guideline developed by the university in 2016. In that, the students' writing skills is "acceptable" if they achieve the "Good" (70-79) or "very good" (80 or higher) categories. Despite only one point below the "good" level, the student's writing skill with 60-69 category or "sufficient" remains unacceptable. The lowest categories, such as "bad" (50-59), and "very bad" (under 50) levels are considered poor. It was the different levels of students' writing performance that had determined different kinds of intervention applied to each of the students. As outlined above, this action research employed a Kemmis et al.'s (2014) model of action research that consists of planning, acting, observing, reflecting, and re-planning. More specifically, the study followed the following phases.

Preliminary Study, prior to its implementation, this study was to prepare groundworks and to set up some initial stages of investigation. These included examining field conditions that included the condition of the classroom, supporting facilities, and the school's already available physical resources; employing documentary analysis as the basis to establish the curriculum and syllabus of the *Winning Skills Development* course; setting up an overview of interaction processes of writing skills development learning dealing with the topic of argumentative writing. These steps comprised some preliminary observations as the baseline of the study.

Action Plan Formulation, in devising the plan for classroom action research using metacognition

and critical thinking strategies, several steps were taken such as developing syllabus and learning model; creating observation sheet, field note guidelines, interview guideline, learning achievement criteria and target; and making an action research schedule adjusted to the learning time prepared by the school.

Action research, to improve writing skills using metacognition and critical thinking strategies, four stages of investigation as mentioned above were carried out. The stages were: planning and problem understanding, monitoring and assessment, problem solving and evaluation based on information from various sources, and evaluation and conclusion drawing. Along the treatment was a number of observations using an already developed observation guideline that consisted of indicators based on the focus of the study. The use of the guideline was aimed at soliciting any of the facts that occurred throughout the process of investigation to ensure that the lecturer's actual activities, students, and the condition of learning remained consistent with the design. The results of this observation were field notes illustrating the actual learning processes, such as teacher's activities, students' activities, and learning environment.

Reflection and Follow Up, this stage was to ensure that the students and the facilitators engaged in this study had learned throughout the designed processes. This consisted of a series of discussions among the students and the facilitators and the feedback that the facilitators provided through the learning processes and their impacts on the measured outcomes. Included in the learning processes were learning methodology, learning media, causes of difficulties in learning and its solution, and how these affected the students' argumentative writing.

The criteria of success used this study were the results of comparison of scores before and after the treatments. The improvement of learning was considerably successful if the students could achieve the average score of 70 and above. For this study, the achievement measured in the students' writing skill development was the students' level of mastery in using metacognition and critical thinking strategies as informed by the assessment guideline developed by the university.

RESULTS AND DISCUSSION

Each of the above action research cycles had its own purposes that ultimately come up with improvement of students' argumentative writing skills using the designed instructional strategies of metacognition and critical thinking as the treatments. The assessment took place in each of the cycles including the introduction, the content, and the conclusion of the writing. The steps of action research in each cycle involved planning, monitoring and assessment, and problem solving and evaluation based on information from various sources, evaluation, and conclusion drawing. Table 1 indicates the number of students promoting their argumentative skills from the baseline to the end of the study as a result of the treatments applied throughout this action research.

Table 1
Improvement of Argumentative Writing Skill in Each Part of Writing

No.	Level of Writing Skill	Percentage of Students			Dist. to Baseline (%)
		Baseline	Cycle I Treatment	Cycle II Treatment	
1	**Introduction**				
	a. Acceptable	51.1	73.9	85.2	34.1
	b. Sufficient	35.2	21.6	13.6	-21.6
	c. Poor	13.6	4.5	1.1	-12.5
	N of Student	88	88	88	
2	**Content of Argument**				
	a. Acceptable	59.1	79.5	89.8	30.7
	b. Sufficient	33.0	15.9	9.1	-23.9
	c. Poor	8.0	4.5	1.1	-6.8
	N of Student	88	88	88	
3	**Conclusion**				
	a. Acceptable	70.5	79.5	87.6	17.1
	b. Sufficient	19.3	17.0	9.0	-10.3
	c. Poor	10.2	3.4	3.4	-6.9
	N of Student	88	88	88	
4	**Rules of Spelling & Grammar**				
	a. Acceptable	65.9	79.5	89.8	23.9
	b. Sufficient	21.6	15.9	8.0	-13.6
	c. Poor	12.5	4.5	2.3	-10.2
	N of Student	88	88	88	

As seen in Table 1, the criteria were based on three different categories: stages of writing (introduction, content of argument, conclusion, and rules of spelling and grammar); levels of competence (acceptable, sufficient, and poor); and the cycles (baseline, cycle I, and cycle II). This is such a strategy in an attempt to answer the first research question, and to compare the students' capacity of writing throughout the stages of writing and the study cycles. The following discussions attempt to answer the two research questions of this study.

Strategy to develop argumentative writing skill
Assessment of students' writing skill aimed to judge the results of students' works at the end of the second and third cycle relative to the baseline. The measured skill shows some improvements of students' ability to compose an argumentative writing on introduction, content of argument, and conclusion. The students' argumentative writing skills increased gradually through each of the cycles against the measured baseline in the previous cycle. In the baseline, more than a half (51.2%) already performed acceptable writing on each of the areas of writing. This indicates that a half of the students were both at the Sufficient and Poor levels on introduction (35.2% and 13.6%), content of argument (33% and 8%), conclusion (19.3% and 10.2%), and developed rules of spelling (22.7% and 5.7%) areas. The number of students promoted to the acceptable level of writing skill compared to those in previous cycles reflect the effectiveness of the treatments employed throughout this study.

Writing an introduction of an essay is such an important basic skill of argumentative writing the students need to follow. The writing skills of students evolved as they began to recognize how to write up a better introductory part under the close guidance and feedback of the facilitators. As a result, the increasing students' skills to write a better introduction toward an "acceptable" level was substantial in number, such as from 45% of students in cycle I, 73.9% in cycle II, up to 85% in cycle III. In contrast, the students' skill at sufficient level decreased through the cycles from 35.2% to 13,6% in cycle III; in the same way, the students at poor level from 13.6% in baseline to 1.1% in the last cycle. Yet, not all students at the "Acceptable" level (85%) were due to their promotion since 51.1% of them had already achieved this level at the baseline. The substantial promotion instead was the rest (34.1%) of students who achieved an acceptable level in the third cycle or promoted from their "Sufficient" and "Poor" levels in the baseline.

The "Content of Argument" is an essential area of an essay writing that requires students' involvement in critical thinking and metacognition exercises. The practices of writing employed the metacognitive and critical thinking framework in which some feedback was given to each of the students in weekly meetings. This enabled the students to come up with some reflective ideas and arguments and to finally express their reflective arguments in writing. The number of students who achieved the "Acceptable" level notably increased from 59.1% in baseline, 78.5% in cycle II, and to 89.7% at the end of the cycles, or 30.7% moving up from the baseline. In contrast, the number of students performing "Sufficient" level continued decreasing from 33% in baseline down to 9.1% while the poorly performing students decreased from 7% in baseline down to 1.1% by the end of the cycles. This shows that almost one-third of the students promoted to the acceptable level of writing of the "Content of Argument" was very substantial.

Writing a conclusion reflects the students' exercises to express critical thinking and to express reflective ideas throughout this part of writing. The number of students whose writing improved in the acceptable conclusion was not quite sizable yet remained significant; they were already substantial (70.5%) in the baseline, and only increased to 87.6% in cycle III. This shows that the number of students promoted to this acceptable level was 17.1% or equal to those leaving both sufficient and poor groups of students. Writing a conclusion is such a single most crucial step in argumentative writing as to bridge between the ideas systematically laid down in writing and the readers in highlighting the important messages to help the readers comprehend. This study found the least improvement of students' skills in writing conclusion, since only less than one-fifth of the students was promoted toward the level of "Acceptable", yet this improvement was not negligible.

The last part of argumentative writing was the practices in using the developed rules of spelling and grammar. The ability to employ the rules of writing is an important tool for the students to develop an essay toward the acceptable level in the eyes of the facilitators. The number of students at the acceptable level in employing the rules of spelling and grammar in baseline was large enough, 65.9%, and increased to 89.8% in third Cycle. This indicates that the quantity of students upgraded to the acceptable level was 23.9% or equal to those leaving both Sufficient at 13.6% of and Poor at 10.2% of writing levels. Employing the rules of spelling and grammar is an elementary stage of writing ability in support for students to write a better argumentative essay. Almost one out four students successfully promoted their argumentative writing skill due to improvement of their capacity of using the developed rule of spelling and grammar in writing.

Effect of intervention on improvement of students' argumentative writing skills
In general, the treatments applied through this study

made differences in students' writing skills in one of the four parts of an essay. As indicated in Table 1, the treatments impacted differences on students' performance due to differences in the areas of writing. This study found different impacts of the treatments on each one of the essay parts to write up. The treatments in the first two areas had impacted more students to lift up toward acceptable levels (34.1% and 30.7%) than those in the last two areas (17.2% and 17.1%). This indicates that the treatments enabled more students to write an acceptable conclusion and content of argument than those to write a conclusion and to employ the rules of spelling and grammar.

The students had much opportunity throughout the study period to practice on expressing some new and reflective ideas derived from their exercises of metacognitive and critical thinking. The initial students' writing skills were negatively skewed, as more than a half of them (63.6%) already performed an acceptable writing. The rest of them was unacceptable at both sufficient (27.3%) and poor (9.1%) levels of performance. The observed improvement of students' writing skills toward the acceptable levels of writing resulted from the treatment applied to students in cycle II and III. As seen from Table 2, the successful treatment was applied in this study as reflected in the percentage distance of students achieving the acceptable level from the baseline.

Table 2
Summary of Student's Argumentative Writing Skill Improvement

Writing Skill Level	Cycle I (Baseline)		Cycle II (1st Treatment)		Cycle III (2nd Treatment)		Distance from Baseline	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Acceptable	56	63.6%	68	77.3%	78	88.6%	22	25.0%
Sufficient	24	27.3%	16	18.2%	8	9.1%	-16	-18.2%
Poor	8	9.1%	4	4.5%	2	2.3%	-6	-6.8%
TOTAL	88	100	88	100	88	100	0	

The number of students promoting to a certain level of argumentative writing skills compared to those in previous cycles reflect the effectiveness of the first treatments employed in this Study. In cycle II, the students' writing skills were increasing after the treatments that prompted the students to analyze, identify and compare the content of books using a jigsaw method. The treatment probed each of the students to read and analyze a book and explained what he or she had read to others. The treatments also assigned them to practice composing an argumentative writing in the form of book or chapter summary. The first treatments in cycle II reduced the students to write an unacceptable writing at 22.7% (Sufficient, 18.2%; Poor, 4.5%) as they were able to promote to the acceptable level of writing.

The students' score of argumentative writing in cycle III continued improving after the second treatments, i.e., allocating times to assign the students to analyze, identify, and compare the two articles given. The learning tasks made the students practice writing based on metacognitive and critical thinking under the rigorous assistance of the facilitators, through face-to-face meetings, forum discussions on Facebook and skype. After the second treatment in cycle III, the number of students with "Sufficient" and "Poor" level of writing lessened even farther. The second treatments in cycle III reduced the number of students writing categorized as "Unacceptable" at 11.4% (Sufficient, 9.1%; Poor, 2.3%) as they promoted successfully to the acceptable level of writing.

Considering the improvement of results through cycle II, the facilitators assigned intensified the students' learning tasks in a more intensive guidance through face-to-face meeting and interactions via Facebook or Skype. As a result, the argumentative writing performance improved significantly in cycle III. By the end of the study period, only two students were left at the level of "Sufficient" and "Poor" in writing skills. In addition to the improvement of writing skills, the students were generally able to develop an essay with more varied contents, supported by complete references. In addition to citing the works of experts as sources of references, the students were also capable of describing examples to support and clarify their arguments.

The last assessment results at the end of the cycles informs that the lesson strategies applied in this study enabled the students to find that the learning processes were fun alongside the practices of developing an argumentative writing. The students, who used to be unfamiliar with critical reading and analysis as important steps to prepare a writing, started to enjoy working with and being able recognize the steps as a systematic attempt to understand an issue to write up. It will be easier for the students to develop argumentative writing if they understand the problems and express them through writing. However, most of the students at the outset faced some trouble in analyzing the content of argumentative writing especially those who needed more adequate references to compose such a writing.

This study uncovered three essential findings on the improvement of argumentative writing by way of metacognition and critical thinking

strategies. The successful strategies of learning argumentative writing began with engaging students with funny stories involving the concept of deviation of logic. To create fun learning strategies and to avoid misunderstanding of problems, a strategy needs to have students replace the logic of one statement with the logic of another, and analyze the causes of misunderstanding due to several possible interpretations of a word or situation.

Improvements of the students' argumentative writing performance result from the implementation of critical reading and critical thinking strategies, critical analyses in reference to the revised version of Bloom's taxonomy of metacognitive stages (Anderson, 2002). The treatments directed the critical thinking exercises by which the students were accustomed to searching, memorizing and comprehending all the information needed; these are a vital means for the students to analyze, evaluate and create reflective ideas and put them into argumentative writing. On the one hand, Pei et al. (2017) found no significant correlation between critical thinking strategy and EFL argumentative writing performance. On the other hand, this study has pointed out the reason that this is due to lack of contextual analysis provided to students.

This study found the encouraging results that the students' argumentative writing improved through providing the students with some contextual analyses and discussions of the content being written up. This study aimed to provide the students with some exercises to apply the concept of relevance, clarity, understanding and flexibility of issues and discuss the concepts with the facilitators during the intervention periods. Integrating critical thinking into EFL writing instruction is one form of exercises provided in the study (see Reyes & Vallone, 2008). Reyes' finding turned out to be so inspiring that metacognitive and critical thinking strategy of instruction affected on students' argumentative writing performance. Similarly, Nosratinia, et al. (2015) suggested that this type of writing requires the students to carefully build systematic stages of planning, monitoring, problem solving, and evaluation for students' argumentative writing to thrive. To this extent, applying the metacognitive and critical thinking strategy was able to enhance the students' argumentative writing and was found to be an appropriate initiative.

CONCLUSION
The study concluded that the treatments using the metacognition and critical thinking practices were proven effective to foster students' argumentative writing skills. The improvement of students' argumentative writing skill occurred gradually through the cycles starting from problem understanding, monitoring and assessment, problem solving and evaluation, to the stage of evaluation

and conclusion drawing. The stages required a series of analysis of information gathered from various sources. Initially, the students had difficulties in practicing some critical analyses and understanding a problem. Although the students had practiced in their previous courses, they generally were challenged to improve their ability to prepare such a broad planning to develop an essay. Due to possessing only preliminary knowledge, they are quite limited to add some more arguments to their work, in greater detail. This did not very much enable them to compose a carefully designed argumentative writing.

Through cycle II, the students began to focus on their planning due to the frequent control of the facilitators on how to allocate their lime, formulate objectives, and focus much attention on tasks at hand. They started to connect their preliminary knowledge in writing, made predictions before performing tasks, and regulated themselves to finish the tasks on time. The students began to realize that planning was such a vital means of writing processes. They began to appreciate that planning was such an important tool to facilitate accurate completion of tasks. Students were able to focus on learning and to formulate a lesson plan by finding textbook resources, internet sources, and some related examples of writing tasks. In the last cycle, the students were generally capable of formulating their goals, identifying the tasks they were going to perform. All the treatments applied enabled them to establish a relevant topic to write up, and then to monitor their progress by regulating their time available. It is important to notice that the applied treatments enabled the students to predict the results they would achieve by managing their time to complete the tasks. Finally, it is important to note that the employed method did not at all determine the level of robustness of a study. At least this study attempted to ensure that every single step was monitored and given appropriate feedback for improvement before going further to other steps.

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