TEACHERS' PERCEPTIONS AND PRACTICES OF CRITICAL THINKING INSTRUCTION IN INDONESIAN SENIOR HIGH SCHOOLS: A CASE STUDY

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Abstract: This study investigated how Indonesian teachers perceived and incorporated critical thinking concepts in English language classrooms. A case-study approach was set out to investigate teacher's perceptions and practices of critical thinking in teaching English language to twelfth-grade students in Jambi Province, Indonesia. Semi-structured interviews, classroom observation, and stimulated-recall interviews were employed to collect data from six teachers in six different senior high schools. The semi-structured interview data were categorized and reported descriptively. Hennessy et al.'s (2016) Scheme for Educational Dialogue Analysis was adopted to analyze classroom observation data, and stimulated-recall interview data were analyzed as supplemental data. The findings show that teachers perceived skills, disposition, and knowledge as key attributes of critical thinking, and active learning activities were valued more than passive learning to promote students' critical thinking. This study also reveals that all teachers employed various teaching strategies to encourage students' critical thinking at a certain level. The findings imply that a professional development program that better equips teachers with understanding of critical thinking concepts and more teaching strategies should be urgently designed in order to produce critical global citizens.

Keywords: critical thinking, in-service teachers, teacher perceptions, teaching practices, teaching strategies

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Critical thinking is an essential skill required of students to become successful global citizens. In the rapidly changing world, critical thinking is of higher

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importance (Ananiadou & Claro, 2009). Critical thinkers can seek the most suitable methods and draw reasoned judgment to solve problems in their daily lives, thus receiving more desirable outcomes (Dwyer et al., 2014; Halpern 1998; Higgins, 2014; Ku, 2009; Tiwari et al., 2006).

Critical thinking is a complex and compound practice of thinking process. It occurs when a person attempts to reduce skepticism about a particular topic within a particular situation using their reasoning and reflective point of view (Ennis, 1962; McPeck, 1981). Critical thinking involves the ability of inquiry, decision-making, and problem-solving in one's real life (Lin, 2018; Simpson & Courtney, 2002).

Due to the complex nature of critical thinking, its concepts are debatable. Different views are posited on definitions of critical thinking (Larsson, 2017; Stupple et al., 2017). Three broad perspectives are addressed, including critical thinking as skills, critical thinking as dispositions, and critical thinking as both skills and dispositions. The first view concerns high level thinking when people inquire, conclude, assess, and self-regulate themselves in a learning environment (Facione, 2000; Freeley & Steinberg, 2009; Simpson & Courtney, 2002). This view reflects Bloom's taxonomy levels of learning which include remembering, understanding, applying, analyzing, evaluating, and creating (Anderson et al., 2001). The second view regards critical thinking as the quality supporting learners to think critically; it involves broad-mindedness, eagerness to know, willingness to understand and reflectively share their stance, and consideration towards other people's views, cultural bias and splitting in thinking (Davies & Barnett, 2015; Ennis, 2011). The third view sees that critical thinking involves both skills and dispositions as it includes the ability to investigate, analyze, and evaluate and the willingness to think in advanced ways (Chafee, 1992, as cited in Faccione, 2000). Apart from skills and dispositions, Thomas and Lok (2015) conceptualize critical thinking by adding knowledge as another critical thinking attribute. They suggest that knowledge is implicitly embedded in critical thinking as a foundation to other attributes because thinkers need general information and basic facts, content-specific information, and experience from work and life as prerequisites that enable them to think critically and develop their critical thinking.

The broad and non-specific definitions of critical thinking may cause the instruction of critical thinking to remain unclear. Even though critical thinking is considered a teachable concept, there have been debates about what to teach and how to teach it. Proponents of critical thinking as a culture specific domain argue that teaching it entails the transfer of Socratic thinking, which is the

foundation of Western education, where this thinking process encourages individuals to seek answers by asking questions critically. Thus, learning to think critically requires students to learn Western social practice (Atkinson, 1997; Egege & Kutieleh, 2004; Song, 2016). This standpoint probably pushes away Asian students who are stereotyped as passive learners from being critical thinkers. However, the opponents argue that critical thinking can be taught as a universal concept with the main focus on a set of transferable skills and dispositions (Halpern, 1999; Kubota, 1999). This position opens up room to more research on the critical thinking instruction in multidisciplinary settings across multicultural contexts. Still, the abstract concept of critical thinking may make teachers uncertain about how to teach it and not confident in teaching it.

Given the idea that critical thinking is teachable and transferrable, several teaching methods have been proposed. According to Marin and Halpern (2011), critical thinking can be either embedded in the subject matter or promoted explicitly through critical thinking instruction. For instance, Marin and Harper (2011) believed that embedded instruction through subject matter can encourage high-achieving students in the classroom rather than low achievers since the students are required to use their higher order thinking skills. On the contrary, explicit instruction is seen as facilitating all students better as it involves the teaching of specific skills such as the cognitive abilities that contribute to both academic and real-life contexts (Marin & Harper, 2011). The explicit critical thinking instruction enables both low and high-achieving students to acquire critical thinking.

Various pedagogical approaches which emphasize the integration of critical thinking across disciplines have been researched and employed worldwide (e.g., Abrami et al., 2014; Bailin & Battersby, 2015; Davidson & Dunham, 1997; Fung et al., 2016; Liaw, 2007). However, frequently employed were four broad teaching approaches proposed by Ennis (1989), who maintained that critical thinking is teachable across disciplines. The four approaches include generic, immersion, infusion, and mixed approach. In generic courses, critical thinking skills and dispositions are taught independently from the learning content. In infusion and immersion approaches, critical thinking is taught through the learning contents; while infusion suggests explicit instruction, immersion offers implicit practice. The mixed approach allows the combination of the generic approach with either infusion or immersion in teaching critical thinking. Among these many approaches, teachers need to be critical enough to adopt suitable ones in their own teaching practice.

One common goal of critical thinking instruction using any pedagogical approaches is to develop students' higher order thinking skills they can apply in their real life (Halpern, 1998). As a deep mental process, key strategies allowing students to demonstrate their thinking skills include dialogue, questioning, and discussion (Albergaria-Almeida et al., 2011; Burbules, 1993; Moss, 2004). These strategies allow interactions between teachers and students and among students to promote their engagement in the learning process. They can build up on students' comprehension beyond what they already acquired and promote their critical thinking through ancillary skills such as the ability to interpret the meaning of their surroundings, analyze other people's opinions, elaborate and persuade other people, evaluate what involved, draw conclusions of the situations and present them rationally, leading them to become critical thinkers (Benesch, 1999; Burbules, 1993; Cottrell, 2005; Moss, 2004; Tseng, 2020).

Apart from having a suitable instructional method, teachers also play a key role in delivering effective critical thinking instruction. As remarked by Innabi and Sheikh (2007), teachers should be critical thinkers who have sufficient knowledge of critical thinking and teaching strategies as well as be confident in their critical thinking instruction. This remark is echoed in Yeh's (2011) study, which proposed four fundamental qualities of teachers. Yeh (2011) pointed out that teachers should possess professional knowledge, teacher efficacy, critical thinking dispositions, and teaching behaviors. Professional knowledge includes teachers' knowledge of critical thinking and suitable teaching approaches. Teacher efficacy concerns teachers' confidence in developing students' critical thinking both in terms of skills and dispositions. Teachers' critical thinking dispositions refer to their positive attitudes that can facilitate successful teaching process. The last quality contributes to strategies teachers can use during teaching. With these four fundamental qualities, teachers can effectively guide students to become critical thinkers.

Originated in the Western cultures, the concept of critical thinking is seen as an internal cognitive activity that is highly culturally specific and is possibly difficult to measure and transfer to other cultures, especially Asian contexts (Atkinson, 1997; Davidson, 1995; Davies & Barnett, 2015). However, recent research has proven that it can be taught across domains through appropriate instruction (Halpern, 1998). Gaining its recognition as one core competency in the 21st century skills (Ananiadou & Claro, 2009), critical thinking has been added as one main goal in educational systems worldwide (see Cai et al., 2017; Innabi & Sheikh, 2007; Tseng, 2020; Zhang et al., 2020).

In Asia, where rote learning is deeply rooted in education, the incorporation of critical thinking in teaching appears burdensome. As argued by Hongladarom (1998), social harmony is more valued than asking probing questions, resulting in the belief that accurate knowledge is transmitted by teachers who are considered superior. This cultural belief often becomes a barrier for Asian students in learning in a Western cultural context (Song, 2016). Realizing these problems, a number of researchers have made many attempts to promote students' critical thinking in all levels of education in Asia (see Che, 2002; Sünbül & Kurnaz, 2016; Tseng, 2020). For example, Che (2002) discovered that even though a pioneering project of critical thinking instruction in Hong Kong could make students motivated to learn and think more critically, teachers were likely to have problems in changing their teaching methods to comply with critical thinking instruction.

As critical thinking is related to higher order thinking skills (HOTS), it requires students to actively engage in learning cognitively. Changing passive students in a rote-learning culture to become more active in thinking can put a great deal of pressure on teachers. A gap in teachers' methods of instruction as found in Che's (2002) study possibly reflects a common problem of the early stage in introducing critical thinking in other educational systems with similar cultural norms. This problem may stem from teachers' inadequate knowledge of critical thinking that is reflected through their choice of unsuitable teaching methods. Therefore, understanding how teachers perceive critical thinking can be the starting point in guiding them through more pivotal teaching approaches of critical thinking.

Taking the Indonesian context as a case for this study, the implementation of critical thinking in a curriculum caused teachers to change their teaching methods. According to Zuhdi (2015), one-way teaching method, with teachers as the center of the learning process and students as passive agents, is one of the characteristics that make students unable to learn effectively in the classroom. For instance, Soedijarto (2008, as cited in Zuhdi, 2015, p.149) also mentioned that the learning process occurred in Indonesia in general is "listening, taking notes, and memorizing". The explicit introduction of the concept of critical thinking was stated in Curriculum 2013, a curriculum designed and developed by the Ministry of Education and Culture of Indonesia that focuses on four core aspects: spiritual, social, knowledge, and skills (Minister of Education, 2013a). This entailed changes in learning outcomes realized in the national examination in 2018, where critical thinking component was embedded in the items tested through HOTS questions. However, the test results revealed the decline of the

students' scores compared to those in the previous years where test items were based on prescribed textbooks (Hanurawan & Waterworth, 2007). The deeply rooted traditional teaching methods could be one possible cause of the decline. Consequently, the Indonesian Ministry of Education held teacher training to equip teachers with sufficient understanding of the teaching under Curriculum 2013, including the concept of critical thinking. However, the training aimed to build teachers' shared understanding of critical thinking rather than providing pedagogical strategies. Still, teachers are independent in selecting teaching methods and strategies to enhance their students' critical thinking.

With limited teacher preparation of critical thinking, teachers may inevitably bring in their own perceptions and beliefs into their teaching. As critical thinking can be taught across subjects, success in promoting students' critical thinking may depend on teaching activities in different disciplines. It is thus interesting to investigate Indonesian teachers' perceptions of critical thinking concept and how they actually implement the concept in their actual teaching practices. Although this study focused on the Indonesian context, it may shed some light to critical thinking instruction regarding teachers in similar contexts. This exploratory study thus aimed to answer the following questions:

1) How do in-service Indonesian teachers perceive critical thinking?
2) How do they implement the concepts of critical thinking in the English language classroom context?

METHOD

This study employed qualitative research design which pursues the meanings within individual's behaviors, viewpoints, and their perspectives on particular matters (Woods, 2005). The purpose of employing this design is to understand Indonesian English language teachers' views and practices in integrating critical thinking in their teaching practice.

Participants

This study employed a case study approach with a small number of participants to gain in-depth understanding and description of how teachers view and incorporate critical thinking in their teaching practices. State secondary high schools in Jambi city, Indonesia, were chosen as the research sites based on conveniences for the data collection process. Initially, all English teachers from all these schools were invited as the participants in this study, but only six teachers voluntarily agreed to participate. The participants were selected based

on the length of their teaching experiences, and their knowledge which reflected on their experience attending the training of Curriculum 2013 that included the elements of critical thinking.

Instruments

Data were collected through semi-structured interviews, three classroom observations, and stimulated-recall interviews. Semi-structured interviews were employed to collect data on the participants' perceptions on critical thinking and their methods of teaching it to their students. Prior to the actual data collection, the interview questions were tried out to two teachers from state senior high schools in Jambi city who were not the participants of this study to examine the validity of the questions. The interview was conducted in Bahasa Indonesia to avoid any miscommunication. Classroom observations were employed to observe teachers' teaching strategies using two video cameras to capture the actual teaching in the classroom, with the focus on the instruction of critical thinking. The stimulated-recall interviews were then conducted to supplement the data collected from classroom observations for the purpose of data triangulation.

Data Collection

Ethical approval to conduct this study was granted by the Centre for Social and Behavioural Sciences Institutional Review Board prior to the data collection. The data were collected during October to November 2018. The participants were informed about the purpose of the study, the procedures of data collection method, and the schedule of each procedure. After the participants submitted their informed consent, they were interviewed prior to the classroom observation. The interviews, which lasted 30 minutes on average, were administered in the teachers' respective schools at their convenient time. For each teacher, the observation was conducted in three actual classroom teaching sessions focusing on reading skills. Three different lessons on reading skills, lasting 90 minutes each, were randomly selected based on the participants' agreement. All recording devices were set in the position where they could record the interaction in the classroom and did not disturb the teaching learning and process. In the process of recording, there were two observers: one of the researchers and one research assistant sitting in the back of the classroom observing the teacher without intruding on the learning activity. Right after the completion of each classroom observation, the stimulated recall interview was

conducted to gain in-depth understanding about the participants' teaching performances using the recorded video as a stimulus.

Data Analysis

The data from all instruments were analysed qualitatively. To explore teachers' perceptions of critical thinking, the interviews were transcribed, translated, and classified into certain themes based on the content of the interview. The observation data were translated, transcribed, and divided into text-segments, according to the shift in topics. The text segments were then coded using a coding scheme adopted from Scheme for Educational Dialogue (Hennessy et al., 2016) to label teachers' performances during their interaction with students which could reveal the teaching strategies employed. To ensure the reliability and validity of the data analysis, 30% of the observation data were coded by the researcher and an inter-coder who had experience in analysing classroom observation. The reliability sought reached 0.78, using Cohen's Kappa (1960). As the aim of the stimulated-recall interview data was to complement the classroom observation data, such data were selectively transcribed and translated only when they were found to correspond to particular classroom observation findings. The participants' verbal data shown in the excerpts presented in this paper were translated from Bahasa Indonesia by one of the researchers, and all the participants' names as well as their students' names were pseudonyms.

FINDINGS AND DISCUSSION

Findings

This section presents the findings from the data collected to answer the research questions through the following points: teachers' viewpoints on critical thinking and how they incorporated their understanding of critical thinking in their teaching instruction in the classroom.

Teachers' Perceptions of Critical Thinking

The semi-structured interview data reveal a number of themes showing teachers' perceptions as shown in Table 1.

Table 1. **Teachers' perception on critical thinking**

No.	Themes	Ami	Bulan	Chiko	Dion	Eli	Fais
1.	**Critical thinking definition**						
	• Critical thinking as skills	✓				✓	
	• Critical thinking as dispositions						✓
	• Critical thinking as skills and dispositions		✓	✓	✓		
2.	**Factors affecting students' critical thinking:**						
	• Students' prior knowledge	✓			✓	✓	
	• Students' awareness of critical thinking		✓				
	• Students' habits to think critically			✓			✓
3.	**Factors affecting teachers' practices of critical thinking instruction:**						
	• Teachers' prior learning	✓	✓	✓	✓	✓	✓
	• Teachers' teaching strategies	✓	✓	✓	✓	✓	✓
4.	**Challenges in incorporating critical thinking into teaching:**						
	• Students' personal habits	✓		✓	✓	✓	✓
	• Students' experiences in learning	✓			✓		
	• Students' language deficiency		✓				
	• Students' motivation to learn		✓				
	• Lack of learning resources						✓

Critical thinking definition

The findings reveal teachers' different views on critical thinking definitions. Three teachers (Bulan, Chiko, and Dion) implied that critical thinking involved both skills and dispositions. For them, possessing a set of abilities such as the ability to analyze, inquire, comprehend, and evaluate was not enough for students to be considered as critical thinkers. Rather, students should also possess a set of dispositions such as being open-minded, motivated and inquisitive, and feeling sympathy and empathy. As remarked by one teacher:

> Dion: "… what enabled people to think critically is their willingness to be knowledgeable and how they can make use of their time to answer questions from the easiest ones to the most difficult ones."

In the interview's excerpt translated directly from Bahasa Indonesia above, Dion believed that critical thinking involved students' willingness to be knowledgeable and their effort to answer questions from teachers, meanwhile two other teachers stated that critical thinking consisted of skills and only one teacher perceived critical thinking exclusively as the willingness to be inquisitive and knowledgeable.

Factors affecting students' critical thinking

When asked about factors affecting students' critical thinking, the teachers revealed that students' prior knowledge, awareness and habits influenced the way they think critically. Three teachers (Ami, Dion, and Eli) stated that prior knowledge about the topic played a crucial role in the development of students' critical thinking, as quoted below.

> Ami: "What can make students think critically might be their experience. They might have certain experience related to the topic we discuss, and this might be different from students who did not have certain experience to relate to."

While the excerpt above focuses on students' prior knowledge in the learning context, two teachers (Chiko and Fais) believed that students' habit of a consistent practice to think critically is as important as their personal experience. Another crucial factor affecting students' critical thinking was students' awareness of its importance. According to Bulan, students' awareness contributed to their willingness to learn and think critically in the classroom:

> Bulan: "When the students are aware that they need to think critically while learning English, they will get motivated. So, they got motivated and reflected upon it, and will be encouraged to do more than they usually do, like thinking critically so they could apply what I have taught them in the classroom because they think it is important for them to do so."

Factors affecting teachers' practices of critical thinking instruction

All teachers revealed that their prior learning and teaching strategies affected their practices of critical thinking in the learning process. For their prior learning, all teachers agreed that the prior learning they experienced was not

effective to help enhance students' critical thinking, so it was different from the way they should teach now. One teacher remarked:

> Bulan: "…so the teaching system that I had back then has made me think that I should not teach my students using the same approach that I got when I was a student because it was too different, it didn't help me to think critically, so it's important to know how to teach our students now"

In terms of teaching strategies, all teachers revealed they employed various strategies to embed critical thinking in their classroom. Two teachers viewed that asking thought-provoking questions relevant to students' prior knowledge could help them think critically:

> Dion: "In an English language classroom, when we give students a news text, let's say it's about fire. We can ask them the questions related to the fire, but they will not help them think critically because the answers are right there. So if we want to encourage their critical thinking, we can ask them: 'If you were the victim of this fire, what would you do? What is the first thing you would do?' so students will think how to respond if they are in the fire."

Apart from the use of questions relevant to students' real life, one teacher believed that semantic mapping before reading could enhance students' critical thinking in the classroom:

> Eli: "For example, before giving a text to the students, I will ask for their opinions on the topic that will be discussed by utilizing their prior knowledge. Firstly, they have to write what they know on the whiteboard, then they have to classify it. It [This method] is called semantic mapping. We will group the words according to the topic of paragraphs that will appear together, then I will hand some paragraphs on pieces of papers to students, and they must arrange the paragraphs into a text in group."

Challenges in encouraging critical thinking

When asked about the challenges in encouraging students to think critically, five teachers (Ami, Chiko, Dion, Eli, and Fais) thought that students' personal habit was the most challenging part in encouraging them to practice critical thinking. As Fais mentioned:

> Fais: "Having students who are so lazy in the classroom is the biggest challenge because they will be reluctant when encouraged to think critically. It is challenging because when they are lazy, it will be hard for them to finish what they have to do in class."

In addition, students' prior learning experiences were found to be another challenge in encouraging students' critical thinking. As stated by Ami:

> Ami: "They are familiar with what has been there, for example, if I asked, 'good morning, how are you?' they will always answer, 'fine,' while we know that it is not the only way to answer that 'how are you' question. So, when I tell them, 'try to look for alternatives other than 'fine',' they will just smile, without giving any response back. That's what I commonly found."

Other challenges reported by the teachers were students' lack of motivation in learning, language deficiency, and lack of resources. Students' motivation and their language deficiency were described in the excerpts below:

> Bulan: "In the learning process, I often meet students who are not willing to do the given tasks. They are difficult to be assigned to complete their responsibilities, maybe because they lack motivation since they often act shy if I ask them to speak or do something using English."
>
> Bulan: "Most students have very limited vocabularies so I have to teach every material from the beginning in order to make them able to understand easily"

Teachers' Practices of Critical Thinking

The findings in this section reveal how the teachers employed strategies to encourage students to think critically in their actual teaching practices. The classroom observation revealed that the teachers typically started the reading class by reviewing the previous lesson or asking students to share their homework with the whole class. Then they invited students to observe the materials, discussed in pairs or work in groups. When the teachers explained the lesson, they usually presented the texts or other media on the screen and invited students to analyze them before asking students to work in groups. At the end of the lesson, the teachers would evaluate what they had learned by inviting them to reflect on the materials, asking them to retell the purpose of the lesson and checking whether they had achieved it, and gave them assignments to do at home. Various teaching strategies employed by the teachers are illustrated in Table 2.

Table 2. Teachers' practices of critical thinking instruction (Based on Hennessy et al.'s (2016) Scheme for Educational Dialogue Analysis)

Strategies	No. of Teachers Employing Strategies	Example
A. Invite elaboration or reasoning:		
(A1) Ask for explanation or justification of another's contribution	2	"Why did you say no? Anyone? Tell me the reason why being unfriendly makes me unable to apply for that job?" (Ami)
(A2) Invite building on/ elaboration/ (dis)agreement/ evaluation of another's contribution or view	2	"Do you agree? Any other opinions? Can anyone share their [your] opinions?" (Bulan)
(A3) Invite possibility thinking based on another's contribution	1	You are not Mr. Ramdani but you can imagine that you eh become Mr. Ramdani. So, who can make a sentence? (Choki)
(A4) Ask for explanation or justification	6	"How do you know that this is the main idea? Hello? Hello? How do you know that an Indonesian immigrant worker died in Malaysia?" (Dion)
(A5) Invite possibility thinking or prediction	3	"…There is social function. There is language feature. Can you give me an example?" (Dion) "What's wrong with number ten?" (Fais)
(A6) Ask for elaboration or clarification	2	"And when do we use it? When do you use "if" and "wish" followed by past simple?" (Choki)
B. Make reasoning explicit:		
(B1) Explain or justify another's contribution	0	-
(B2) Explain or justify own contribution	0	-
(B3) Speculate or predict on the basis of another's contribution	0	-
(B4) Speculate or predict	0	-

Strategies	No. of Teachers Employing Strategies	Example
C. Build on ideas:		
(C1) Build on/clarify others' contributions	3	"Can you guess how to send this text? Arif[1] said that we can send it via post, email, and any other forms. What do you think?" (Ami)
(C2) Clarify/elaborate own contribution	0	-
D. Express or invite ideas:		
(D1) Invite opinions/belief/ideas	6	"…what do you get from the first paragraph?" (Eli) "What is the difference between wish and if-clause?" (Choki)
(D2) Make other relevant contribution	0	-
E. Positioning and coordination:		
(E1) Synthesize ideas	0	-
(E2) Compare/evaluate alternative views	0	-
(E3) Propose resolution	0	-
(E4) Acknowledge shift in position	0	-
(E5) Challenge viewpoint	0	-
(E6) State (dis)agreement/position	0	-
F. Reflect on dialogue or activity:		
(F1) Talk about talk	0	-
(F2) Reflect on learning process/purpose/value	1	"So what do you feel now? Are you happy to hear that?" (Choki)
(F3) Invite reflection about process/purpose/value of learning	0	-
G. Connect:		
(G1) Refer back	0	-
(G2) Make learning trajectory explicit	0	-

[1]All students' names in quotes are pseudonyms.

Strategies	No. of Teachers Employing Strategies	Example
(G3) Link learning to wider contexts	0	-
(G4) Invite inquiry beyond the lesson	0	-
H. Guide direction of dialogue: **(H1)** Encourage student-student dialogue	1	"I want everybody [to] have a dictation class, so you will dictate the text from outside the class to your group in this class... The first paragraph should be read by one person. For the second paragraph you should change the person, as well as for the third paragraph. Right, there should be only one person who writes, and you can take turns." (Eli)
(H2) Propose action or inquiry activity	0	-
(H3) Introduce authoritative perspective	0	-
(H4) Provide informative feedback	0	-
(H5) Focusing	6	"Read and understand what was asked in the instruction based on the picture, then let's identify the facts, okay?" (Bulan)
(H6) Allow thinking time	0	-

According to the eight main sets of strategies illustrated in Table 2, it was found that the teachers employed only five major sets: inviting elaboration or reasoning (A), building on ideas (C), expressing or inviting ideas (D), reflecting on dialogue or activity (F), and guiding direction of dialogue (H).

Among them, the most commonly used strategy was inviting elaboration or reasoning (A). All sub-strategies were employed by different number of teachers. From six sub-strategies under this set, the most commonly used sub-strategy was asking for explanation or justification (A4). It was used when the teachers reviewed the previous lesson, started a discussion, explained the new materials, and evaluated students' knowledge. They were found to invite students to

respond by posing "why…?" and "how…?" questions while explaining the materials. In addition, three teachers were found to invite possibility thinking or prediction (A5) when they asked their students to predict a scenario in the discussed lesson. Asking for explanation or justification of another contribution (A1), inviting building on/elaboration/(dis)agreement/evaluation of another contribution or view (A2) asking for elaboration or clarification (A6), inviting possibility thinking based on another contribution (A3) were employed by a few teachers in this study.

Regarding the strategy set of building on ideas (C), three teachers were found to ask students to build on others' contributions (C1) when they roused students' interest to learn new materials or when they discussed the materials in the classroom. These findings were also supported by the result of stimulated recall interview where Eli confirmed that the purpose of building students' contribution was to elicit their ideas in the classroom:

> Eli: "Before we start learning, we brainstorm about the material and I always do that, eh for example, it's about liberty statue or if the material is about Bill Gates. Then, I will ask them what they know about Bill Gates."

In addition, all teachers were found to invite their students' opinions/ideas/ beliefs (D1) whenever they discussed the materials with the whole class. One of the teachers confirmed in the stimulated recall interview that asking for students' ideas helped them build accuracy in reading:

> Ami: "My students did not always pay attention to the details in the paragraphs, so the purpose of asking them about what this paragraph is about was to build their accuracy in reading..."

In teaching, teachers were also found to guide direction of dialogue (H) by commonly focusing (H5) on objectives of the lesson. Giving instructions was found to be prominent in all teachers' practices to make students focus on the activities throughout the lessons in the classroom. One of the participants confirmed in the stimulated recall interview that the purpose of giving instructions to students was to help them set goals in reading, as quoted below.

> Bulan: "The reason why I gave them instructions about what to do is to let them know what we want to achieve from learning this material, so it is important to know what we need to do and understand from this material."

Of all main strategies used, only one teacher was found to ask students to reflect on their learning process/purpose/value (F2) at the end of the lesson when

she wanted to evaluate what they had learned. Also, one another teacher was found to encourage student-student dialogue (H) in the classroom.

Among all the strategies listed, it is quite surprising that the teachers did not employ the three major teaching strategies to enhance students' CT, namely, making reasoning explicit (B), positioning and coordination (E), and connect (G).

Discussion

A number of pertinent points have emerged from the findings in this study. We found that although the teachers had varied perceptions of critical thinking definitions, they seemed to have some understanding about critical thinking concepts and how to teach them. As revealed in the interview, the teachers appeared to take skills, dispositions, and knowledge into their consideration, reflecting the three major attributes of critical thinking as summarized by Thomas and Lok (2015).

Despite limited evidence of what the teachers thought critical thinking skills entailed, their response about the use of thought-provoking questions could imply that critical thinking was perceived as thinking beyond the lesson content. Considering Bloom's taxonomy, this finding suggests, to some extent, that they considered and valued higher order thinking skills by asking questions that required students to divide a subject into parts (analysis), form parts to become a whole (synthesis), and make logical judgments (evaluation) (Duron et al., 2006).

In addition, dispositions including students' motivation, open-mindedness, willingness to learn, awareness of critical thinking and habits to think critically were highly valued by the teachers in this study. These dispositions cover what Davies and Barnett (2015) refer to as dispositions relating to self and dispositions relating to others, suggesting the teachers perceived that critical thinking is not limited to individual dimension but also social dimension (Davies & Barnett, 2015).

While skills and dispositions were implied in the teachers' interviews, knowledge construction emerges when the teachers addressed students' experiences and prior knowledge about the topic learned. They were likely to expect students to create new knowledge based on existing knowledge they had, thus developing critical thinking. This finding emphasizes the importance of knowledge in the thinking process, reflecting Halpern's (2014) and Thomas and Lok's (2015) comments that knowledge is a prerequisite for critical thinking as thinkers need to form their own new knowledge through the thinking process

based on accurate information they received. In other words, critical thinkers can build up their own knowledge using their prior knowledge.

Among the three attributes of critical thinking, the teachers appeared to infer that skills are the main indicator of critical thinking while dispositions and knowledge are foundations for critical thinking skills and a lack of them could be barriers to prevent students from developing such skills. This view highlights their understanding of the complex nature of critical thinking concepts.

Another interesting point from the teachers' perceptions was their awareness of tension between their past learning experience (i.e., passive learning) and the current potential teaching practices of critical thinking (i.e., active learning). With this awareness, they tended to avoid the strategies they were taught when they were students, suggesting they value active learning to promote students' critical thinking (Albergaria-Almeida et al., 2011; Browne & Freeman, 2000). This view seems to be reflected in their teaching practices.

In their actual teaching practices, the teachers appeared to employ varied strategies to enhance students' critical thinking. The most common strategy used by all teachers was asking thought-provoking questions to encourage students to express ideas, invite them to justify their opinions, and guide them to focus on the classroom activities. The use of this strategy demonstrates that the teachers might be familiar with "asking questions to students" (Craft, 2000; Li & Walsh, 2011), a typical behavior all teachers would do in the classrooms. It may also show teachers' understanding of questioning as an effective strategy to teach critical thinking (Albergaria-Almeida et al., 2011; Golding, 2011). As asserted by Chou (2017), asking questions, assessing issues, and drawing conclusions create possibility for students to solve the problems that they have in the learning process.

As critical thinking is closely linked to high order thinking skills, the teachers' overall strategies can be mapped into Bloom's revised taxonomy of thinking levels (Anderson et al., 2001) as illustrated in Table 3.

Table 3. The relationship between Bloom's revised taxonomy and the teachers' teaching strategies

Bloom's Revised Taxonomy	**Teaching Strategies**
Creating	-
Evaluating	(A2) Invite building on/elaboration/(dis)agreement/ evaluation of another's contribution or view

Bloom's Revised Taxonomy	**Teaching Strategies**
	(F2) Reflect on learning process/purpose/value
Analyzing	(A1) Ask for explanation or justification of another's contribution (A3) Invite possibility thinking based on another's contribution (A4) Ask for explanation or justification (C1) Build on/clarify others' contribution (D1) Invite opinions/belief/ideas
Applying	-
Understanding	(H1) Encourage student-student dialogue
Remembering	(H5) Focus

Table 3 reveals that the most employed strategies lie in the level of analysis skill, the bottom level of high-order thinking skills. This shows that the teachers were able to integrate their essential teaching skills with the strategies to teach for higher order thinking to a certain extent (Peterson et al., 1990). Moreover, the fact that only a few employed strategies reflect the evaluating level, which is helpful for teachers to help students assess the subject-matter learned and is a core level of teaching critical thinking (Anderson et al., 2001; Ennis, 1985), indicates that most teachers in this study did not plan their teaching strategies to achieve "student thinking in all levels" (Limbach & Waugh, 2010, p. 3). The more emphasis on the analysis level than other higher thinking levels might result from teachers' judgmental views of their students' competence and disposition, as the finding revealed that students' personal habits was the biggest contributing factor in applying critical thinking instructions. In line with other previous studies (e.g., Halpern, 1999; Schulz & FitzPatrick, 2016), teachers often consider students' low English proficiency and motivation as barriers to develop their higher thinking levels.

Considering the teachers' overall perceptions and practices, it could be argued that the teachers in this study have some understanding of critical thinking concepts and of strategies to develop students' critical thinking. Despite variations in their views and teaching strategies, they appeared to show some professional knowledge and teacher efficacy in teaching critical thinking (Yeh, 2011).

CONCLUSIONS

The findings of this study reveal that teachers perceived critical thinking is important to incorporate in the classroom although the application of their understanding is rather limited. This study also reveals the needs for the Ministry of Education of Indonesia to provide a better training program to help teachers incorporate critical thinking in their teaching practice and a better support from the school to help teachers in teaching students to think critically. To effectively promote students' critical thinking, explicit instruction should be introduced as it was found to be more effective than embedded instruction (Martin & Halpern, 2011).

Since this study was limited to a small number of in-service teachers serving as English teachers in senior high schools in Jambi province, Indonesia, further investigation on critical thinking teaching practices of teachers in similar contexts is called for to provide a better picture of such instruction to students considered passive learners. Despite the use of a dialogue model as a tool to analyse critical thinking behaviours in the classroom, this study focused only on teachers' behaviours. If students' behaviours had been taken into considerations, insight on effectiveness of teachers' teaching strategies could have been yielded. Quantitative methods such as survey are also suggested as a helpful tool to find the level of participants' critical thinking in preliminary data collection.

Critical thinking is crucial in education, and teaching it to students is one main goal for teachers at all levels. In the contexts where cultural norms do not comply with Western critical thinking concepts, promoting students' critical thinking can be burdensome for teachers. Therefore, equipping them with sufficient knowledge and skills to teach is fundamental to improve their students to think critically.

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