



## Incorporating critical thinking and English as a medium of instruction for elementary school students

### Menggabungkan berpikir kritis dan bahasa Inggris sebagai bahasa pengantar pembelajaran bagi siswa sekolah dasar

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#### ABSTRACT

This case study aims to find out how teachers of the International Class Program at an elementary school in Malang incorporated critical thinking (CT) pedagogy in teaching subjects with English as a Medium of Instruction. Eighteen teachers filled in an online questionnaire, and two of them were interviewed. Analysis of one pre-recorded video for English class (lasted for 13 minutes) and one video of Math class delivered through Zoom meeting (lasted for 29 minutes) was done to investigate how teachers triggered students' thinking in the classroom practice. Also, an analysis of three lesson plans was done to dig further information about teachers' teaching practices. The findings indicated that the teachers have practical knowledge of CT pedagogy from reading and workshops that were not necessarily focused on CT. Textbooks were mainly used to guide the teachers' teaching, supported by audio-visual media. Questions primarily were used to trigger students' higher-order thinking by connecting the texts with the students' experiences in real life. Despite the implicit policy of CT, the teachers have implemented CT strategies in the International Class Program. Overall, the teachers have played as more knowledgeable others that facilitated the students' learning to think critically. However, they were not confident whether the teaching material they were developed supported CT pedagogy implementation. Thus, the study findings revealed their need for supervisors to evaluate the content of teaching material and practical guidance to conduct thinking routines for the young learners in the subjects with English as a medium of instruction.

#### KATAKUNCI

pedagogi,  
berpikir kritis,  
sekolah dasar,  
studi kasus,  
Indonesia

#### ABSTRAK

Studi kasus ini bertujuan untuk mengetahui bagaimana guru Program Kelas Internasional di sebuah sekolah dasar di Malang memasukkan pedagogi berpikir kritis dalam mengajar mata pelajaran dengan bahasa Inggris sebagai bahasa pengantar pembelajaran. Delapan belas guru mengisi kuesioner online dan dua dari mereka diwawancarai. Analisis satu video yang dipersiapkan guru untuk kelas bahasa Inggris (durasi 13 menit) dan satu video kelas Matematika yang disampaikan melalui Zoom meeting (durasi 29 menit) dilakukan untuk memeriksa bagaimana guru memicu pemikiran siswa di kelas. Analisis ketiga RPP juga dilakukan untuk menggali informasi lebih lanjut tentang praktik mengajar guru. Temuan menunjukkan bahwa guru memiliki pengetahuan praktis tentang pedagogi berpikir kritis yang dipelajari dari membaca dan lokakarya yang belum tentu terfokus pada berpikir kritis. Buku teks lebih banyak digunakan untuk memandu pengajaran guru, didukung dengan penggunaan media audio visual. Pertanyaan banyak digunakan sebagai strategi

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untuk memicu berpikir tingkat tinggi siswa dengan menghubungkan teks dengan pengalaman siswa dalam kehidupan nyata. Meskipun kebijakan berpikir kritis tersirat, guru telah menerapkan strategi berpikir kritis dalam Program Kelas Internasional. Temuan lain menunjukkan bahwa pola asuh di rumah dan pengalaman siswa tinggal di luar negeri berkontribusi pada keterampilan dan disposisi berpikir kritis siswa. Secara keseluruhan, guru telah berperan sebagai orang lain yang lebih berpengetahuan yang memfasilitasi pembelajaran siswa untuk berpikir kritis. Namun, mereka tidak yakin apakah bahan ajar yang dikembangkan mendukung penerapan pedagogi berpikir kritis. Dengan demikian, temuan mengungkapkan kebutuhan mereka akan pengawas untuk mengevaluasi isi bahan ajar dan bimbingan praktis untuk melakukan rutinitas berpikir untuk pelajar muda dalam mengajar mata pelajaran dengan bahasa Inggris sebagai bahasa pengantar.

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## Introduction

The research literature acknowledges critical thinking (CT) as a crucial tool of inquiry that helps individuals solve problems and make decisions. These two skills are needed in the academic world and everyday life, especially when they face a problem that cannot be solved by common sense (Facione & Gittens, 2013; Saadé et al., 2012). Thus, education should aim the students to be critical thinkers, as this capability enables students to survive in the more challenging world. Nevertheless, the research literature also informs that long-lasting progress is needed to be a critical thinker. As proposed by Paul and Elder (in Movafagh & Tahriri, 2014), critical thinkers go through steps to progress as thinkers. The first step is called *the unreflective thinker*, which indicates that the person is still not aware of fundamental problems in his/her thinking. The second step is labeled as *the challenged thinker*, where a person starts to be aware of his/her problems in thinking. The third step is identified as *the beginning of thinking*. The beginning thinkers try to make themselves better, but without systematic practice. Step four is *the practicing thinker*; this happens when the person can identify the necessity of systematic practice. Step five, *the advanced thinker*, occurs when the person has already developed in accordance with his/ her practice of CT. The last step is *the master thinker*, which happens when he/she is already skilled, and careful thinking becomes second nature. Therefore, to be a critical thinker needs a long process and hard work. Becoming a good thinker is not possible by only passing the third step, beginning thinking, but much more beyond that. Thus, Movafagh and Tahriri (2014) recommend education systems to support students' CT development, like what happens in Hong-kong and Japan. Incorporating CT in education helps students develop to be open-minded and tolerant persons. Critical thinkers are accustomed to having different arguments to obtain deeper information about specific topics and construct reasoned conclusions (Movafagh & Tahriri, 2014). In this context, teachers' assistance is required to help students develop their CT skills and knowledge by implementing pedagogies that support the students' development of CT since they are at an early age.

The benefit of CT for young learners has been justified by the research literature. Sun and Hui (2012) and Bouygues (2018) acknowledge the importance of CT for young learners as they found that students with a good CT have a better chance to be smarter and have better welfare. Students with good CT will have a good development of intelligence as founded by Kater et al. (2000) in their study about young learners”

health issues and eating disorders. Students with better CT ability live more healthily and have more awareness about their health. Moreover, Flage (2004) and Bouygues (2018) state that CT also helps students to have decision-making ability. They do not trust every information easily. Instead, they think carefully and critically about the information they receive. Therefore, there is no reason for teachers to separate CT from their teaching subject matters.

### *Bloom's Taxonomy*

The definition of CT in this study is taken from higher-order thinking of Bloom's Taxonomy that comprises knowledge and cognitive process in analyzing, evaluating, and creating (Anderson et al., 2001; Krathwohl, 2002). Bloom's taxonomy has been widely used as a framework to guide teachers in setting teaching objectives, designing assignments, and formulating questions used for assessment and classroom interaction. Bloom's taxonomy consists of three domains, namely cognitive (about knowing), affective (about attitudes, feelings), and psychomotor (about doing) (Pohl, 2000; Ritchhart et al., 2011). The cognitive taxonomy is arranged in a hierarchy from simple to complex categories and complex to abstract categories: knowledge, understanding and application, analysis, synthesis, and evaluation (Krathwohl, 2002). Bloom's taxonomy has been recognized for describing types of mental activity. Still, it has also been criticized for using a one-way hierarchy of thinking from lower to higher levels of thought (Krathwohl, 2002). In the old taxonomy, knowledge preceded understanding, application, synthesis, and evaluation. The old taxonomy was also criticized for placing more emphasis on remembering categories of knowledge rather than understanding and using knowledge to achieve more important goals, such as understanding for synthetic categories (Krathwohl, 2002). Finally, in 2001, Bloom's student, Anderson, and his team redefined each level of the thought order but kept the sequence (Anderson et al., 2001).

The revised edition of Bloom's Taxonomy includes two dimensions, namely knowledge, and cognitive processes. The dimension of knowledge includes metacognitive knowledge as a new category, to signify the essence of cognition in general and metacognitive cognition that allows students to transform knowledge according to their needs (Krathwohl, 2002). In the realm of cognitive processes, word order is also changed from nouns or abstract concepts to transitive verbs, and the position of the evaluation sequence is also changed. In the original version, evaluation is at the top of the list, while in the new version, it is replaced by creation (or synthesis in the old version) to better reflect the nature of thinking defined in each category. Bloom's taxonomy is used by teachers to express low-level thinking activities (remembering, understanding, applying) and higher-order thinking (analyzing, evaluating, creating) (Pohl, 2010). It is this high-level thinking that teachers believe internationally as CT, which has become the main goal of education (Zohar & Barzilai, 2015). Anderson et al. (2001, pp. 67-68) write that analyzing refers to "breaking down a problem into parts, determining how the parts relate to each other and with a particular structure, organizing, and assigning attributes". Evaluating is "making judgments based on criteria and standards through examination and criticism" (Anderson et al., 2001, pp. 67-68). To create means to "put elements together to form a coherent or functional whole; reorganizing elements into new patterns or structures through creation, planning, or production" (Anderson et al.,

2001, pp. 67-68). In this study, the revised Bloom's taxonomy is used as a guide for data analysis related to CT conceptions.

### *Pedagogies that Support Students' CT Development*

Critical thinking is very important for students, and therefore, it is crucial to develop students' CT since they are in the lowest level of formal education. The stipulation of CT in the 2013 curriculum as target skill and knowledge for school graduates in Indonesia (Ministry of Education and Culture of Republic Indonesia, 2016) aligns with the global educational goal that places CT as the main outcome of 21st-century education curriculum (Bart, 2010; Bok, 2006). The implication of the national policy requires schools to accommodate pedagogies that nurture the students' CT, for instance, by implementing a student-centered approach that nurtures a culture of reasoning (Ritchhart, 2015).

The millennial era has a learning process paradigm that is also characterized by millennials, namely the learning process undergoes a transformation of pedagogic values, which according to Ritchhart (2015), is characterized by the growth and development of a culture of reasoning (CT). Ritchhart (2015) proposes eight strategies to create a culture of reasoning: (1) teacher's expectations of students mean that students are directed to CT competence and not only achieve perfect scores; (2) create interactions that stimulate students to listen and ask questions so that positive class interactions are built, and there is collaboration towards a culture of reasoning; (3) so that the class can interact easily, pay attention to the seating formation of students so that they are comfortable to exchange ideas; (4) give students the opportunity to express their views on the teaching material being taught; (5) take time to reason for students so that they feel involved in the learning process; (6) use language (words) that stimulate students to reason; (7) give students a model of how to reason acceptable. Making mistakes in reasoning is not a sin; (8) build competence in reasoning into a routine. This strategy from Ritchhart (2015) is an example for teachers to implement CT in the classroom.

Other pedagogies to develop students' CT in EFL classes are suggested by Meetha and Al-Mahrooqi (2014), Tous et al. (2015). Meetha and Al-Mahrooqi (2014) explore the link between CT and writing in an EFL class. They found that CT has implications on students' academic and personal achievement in writing. Meanwhile, Tous et al. (2015) explore the use of debate in EFL reading class, and they found that debate in EFL reading class can improve students' reading comprehension.

Unfortunately, previous studies (see Ilyas, 2015; Masduqi, 2011; Widodo, 2012) inform that school teachers in Indonesia heavily rely on textbooks and rote learning, which contributes to English college students' lack of CT (Egege & Kutieleh, 2004). To implement pedagogies that support students' CT development, teachers' agency is required. Besides, teachers need to know the content of the subject matter, CT concepts, and knowledge of pedagogies of the subject matter. All this knowledge contributes to CT pedagogical content knowledge (Ab Kadir, 2017). Further, if the teachers believe in the benefit of CT for students, there is a high opportunity for them to integrate CT into their teaching.

### *Language Teacher Cognition Framework*

This study explores the knowledge and practice of elementary school teachers in integrating CT into English, Science, and Mathematics subjects. Therefore, the language teacher cognition framework (Borg, 2006) is very relevant to employ in this study as it focuses on understanding the relationship between teachers' beliefs and knowledge about CT with their classroom practice by considering the contextual factors involved. Teacher beliefs are usually reflected in the instructions the teacher gives to students in a class (Kagan, 1992). Other terms used to represent teacher beliefs are principles, personal epistemology, perspective, practical knowledge, and orientation (Kagan, 1992). This definition implies the subjectivity of beliefs, where each teacher may have different teaching beliefs.

While belief is subjective thinking, knowledge refers to the things we know – conventionally accepted facts (Woods, 1996). Kagan (1992) defines belief as a broad concept. According to Kagan (1992), belief and knowledge are the same because knowledge is a belief that the agreement of opinion has confirmed. Furthermore, a teacher's professional knowledge lies in context (related to a particular group of students), in content (related to a particular teaching material), and directly (related to the teacher's unique belief system). As teachers gain more teaching experience, their professional knowledge grows richer, and they will develop highly personalized pedagogies – belief systems that limit perception, judgment, and behavior (Kagan, 1992).

Teachers' beliefs and knowledge usually influence what teachers do in the classroom (Borg, 2006). However, the relationship between teacher cognition and practice in teaching may not be linear or unidirectional due to the influence of contextual factors, and teacher cognition is formed in response to what is happening in the classroom. Therefore, language teaching can be seen as a dynamic interaction between cognition, context, and experience. In this study, Borg's language teacher cognition framework is used to direct the researcher in understanding the implementation of CT pedagogies in teaching subjects with English as the medium of instruction.

### *Research Purpose*

Little information is found about how CT is nurtured in elementary school in Indonesian contexts, especially in the International Class Program, where English is used as a medium of instruction. Some studies (see Kurniaman et al., 2020; Sidiq et al., 2021) investigated elementary school students' CT, but they did not specifically focus on the class where English was used as medium of instruction. Kurniaman et al. (2020) conducted a survey in Riau to describe elementary school students' CT in reading comprehension by using a concept mapping as a medium. Kurniaman et al. (2020) found that the students' ability in CT was low due to teachers' lack of knowledge and practice of critical thinking pedagogy. Another study about critical thinking for elementary school students in Surakarta was done by Sidiq et al., (2021) to test the effectiveness of HOTS-based science questions habituation in science class. Sidiq et al., (2021) revealed that the students in experimental class showed higher level of critical thinking than the students in the conventional class. Both studies (Kurniaman et al., 2020; Sidiq et al., 2021) did not provide information about critical thinking strategies implemented for the class that used English as medium of instruction. Thus, this study aims to

understand how critical thinking is implemented in the elementary school with International Class Program. The study attempts to investigate how the teachers understand critical thinking, what strategies have been applied by teachers, and what factors are obstacles for teachers.

#### *Research Significance,*

This research is important to add knowledge about strategies for implementing CT in elementary school, especially in the International Class Program, where English is used as a medium instruction for some subjects. Another significance of the study deals with teacher professional development. This research supports the implementation of Law no. 14 of 2005 (Undang Undang Nomer 14 Tahun 2005, 2005) in the context of providing knowledge related to CT education for students. In addition, this research also supports the implementation of the Independent Learning policy to empower teachers to become agents of change through improving the quality of learning, which is stated in the strategic plan of the Directorate General of Teachers and Education Personnel for 2020-2024 (Peraturan Direktur Jenderal Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan Nomor 3928/B/Hk/2020, 2020). Teachers need guidance to be more explicit in facilitating students to think critically and solve problems (Bonney & Sternberg, 2011). Teachers are recommended to study students' cultural backgrounds to understand the intellectual traditions of students (Egege & Kutieleh, 2011; Manalo et al., 2015; Shaheen, 2016). This study also supports the implementation of *Pelajar Pancasila* (Pancasila students) character education. The notions of Pancasila students are students who think critically, objectively process information both qualitatively and quantitatively, build links between various information, analyze information, evaluate and conclude (Karakter Pelajar Pancasila, 2021). Strengthening character education within the framework of Pancasila is rooted in the context of Indonesian socio-cultural life, which involves aspects of religion, global diversity, cooperation, creativity, critical reasoning, and independence. Thus, this study also provides significance to improve the practice of character education in elementary school.

#### *Research Contexts*

The research context is the International Class Program (ICP) of SD *Laboratorium* Universitas Negeri Malang (SD *Lab* UM), East Java, Indonesia. This program uses two curricula, namely National Curriculum and International Based Curriculum. Three subjects, namely, English, Mathematics, and Science, are delivered using English as the Medium of Instruction (EMI). EMI refers to the program which uses the English language in the teaching and learning process, where English is not the official language in that country (Macaro et al., 2018). The average students of this program are categorized as young learners aged 7 – 12 years old (see Kang, 2014). In this period of age, students start their concrete operational stage, which is signified by the development of logical thought, where students will be decentered and less egocentric (Piaget, 1962), and this period is versatile for CT development. In relation to English, Pinter (2006) stated that students at a young age will be more sensitive in grasping the language, phonology sounds, and rhythm. The sooner young learners are introduced to CT, the better they will have the ability to reason and make decisions as they grow up (Delamin & Spring, 2021; Paul et al., 1989). The earlier young learners learn English

at school, the more ready and confident students are in learning English at the higher levels of education (Prayatni, 2019).

## Method

This study used a qualitative approach with a case study design (Patton, 2015), involving 18 teachers of the International Class Program, SD *Laboratorium* Universitas Negeri Malang. The data gathering was done in June 2021 in the pandemic situation and thus influenced the mode of the data collection method. The instruments were an online questionnaire, interview, lesson plan analysis, and virtual class video analysis. The questionnaire contained 15 open-ended questions to record teachers' demographic data e.g., length of experiences, educational background, and professional development, as well as teachers' knowledge and practice of pedagogies that nurture students' CT. Eighteen teachers filled in the online questionnaire, and three teachers shared their lesson plans. Two teachers (out of eighteen) shared the recording of a zoom meeting for their class. In this study, purposeful sampling was employed by selecting two teachers (out of eighteen) that can best assist the researchers to understand the implementation of critical thinking in the ICP classes (Creswell, 2014). These two teachers were in depth interviewed for an hour, to seek their insights about knowledge and practice of critical thinking, including the contextual factors involved. The criteria of the selection were as follows: 1) the teachers should teach subjects that were taught using English as the medium of instruction (English, Math, or Science) 2) they should have been teaching in the school for more than five years, and 3) they had attended professional developments related to innovative teaching, which is not necessarily dealt with CT. It is assumed that the teachers who met those three criteria are rich in information (Patton, 2015) to share their insights about the teaching practices that they believed contributed to students' CT development. The interview was done in a focus group interview through a zoom meeting that lasted for one hour using both *Bahasa Indonesia* and English to avoid uncertainty of the appropriacy of their responses in English and also to seek more accurate and candid expression of insights (Cortazzi et al., 2011). All the data were analyzed and coded to derive themes based on the research questions, called structural coding (Saldana, 2013). The result of structural coding was presented as themes in the finding and discussion section in this paper, namely teachers' belief and knowledge, the implementation, and the contextual factors. The analysis of lesson plans focused on the objectives and activities to find explicit statements that are equivalent to higher-order thinking of Bloom's Taxonomy (Krathwohl, 2002). The analysis on video of teachers' online class focused on the teachers' instructions to guide the students' in giving the lessons. Deductive analysis (Patton, 2015) was employed by interpreting the data based on the dimension of revised Bloom's Taxonomy, namely knowledge and cognitive process dimension (Krathwohl, 2002). Also, language teacher cognition framework was used to guide the interpretation of the data about teacher knowledge and belief, classroom practice and contextual factor involved (Borg, 2006). The inductive analysis (Patton, 2015) was implemented by reading the data to derive new themes, which did not belong Krathwohl's (2002) and Borg's (2006) frameworks.

## Results and Discussions

The results and discussions in this paper are based on the data derived from the online questionnaire, interview with Teacher 4 and Teacher 15, analysis on these two teachers' online classes, and analysis on lesson plans.

### *The Participants' Profile*

The data from the online questionnaire showed that the participants were comprised of 15 female teachers and three male teachers, and all of them are Bachelor of Arts (BA) holders. This is in congruence with what the Indonesian government (Peraturan Menteri Pendidikan dan Kebudayaan Nomor 22 Tahun 2016, 2016) has declared that all primary school teachers are at least BA holders. However, the respondents have diverse teaching experiences. Nine teachers have been teaching in the range of 5 (five) until 15 (fifteen) years, 5 (five) teachers have been working for more than 15 years, and three teachers have worked less than five years. Thus, most of the respondents are categorized as experienced and, thus, rich in information to fulfill the criteria to be the participants of this qualitative case study (Patton, 2015). Table 1 presents the participants' brief profiles.

Table 1. Participants' Profile

Participants	Length of Experiences (years)	Teaching Subjects	Notes
Teacher 1	10	Japanese, ICT	
Teacher 2	15	Homeroom teacher, Science	
Teacher 3	8	Japanese, ICT	
Teacher 4	20	English, Thematic	Curriculum coordinator
Teacher 5	7 months	English	
Teacher 6	16	English, Thematic	
Teacher 7	11	Homeroom teacher, Science	
Teacher 8	13	Homeroom teacher, English	
Teacher 9	14	Mathematics	
Teacher 10	11	Mathematics	
Teacher 11	16	Mathematics	
Teacher 12	19	Mathematics, Thematic	
Teacher 12	16	Science	
Teacher 14	-	Science	
Teacher 15	13	Science, Mathematics	Coordinator of Facility and Infrastructure
Teacher 16	4	English, Thematic	
Teacher 17	4	English, Thematic	
Teacher 18	3	Thematic, Science	

All of them have never been studying abroad for a long-term course, but one of them has experienced to have a short-term immersion program in Malaysia and Singapore. Five teachers reported to have professional development about teaching strategies for International Class Program, and one of them holds an international certificate as online tutor (Teacher 4). In brief, only a few of them (4 teachers) have made efforts to develop professionally, and one teacher (Teacher 4) attain an international certificate to teach the International Class Program. Anyhow, most of the participants (11 teachers) have had experiences of having benchmarking to bilingual schools in Indonesia and abroad (Malaysia and Thailand). This is to say that the school has catered for the teachers' opportunities to observe other schools in developed countries



with more established school systems implementing internationally standard frameworks as a comparison.

### *Teachers' Beliefs and Knowledge of CT*

The subsequent Table 2 describes how the participants conceptualize CT.

Table 2. Participants' Conceptions on CT

CT Conceptions	Participants
✓ Ability to analyze and to process information/knowledge/ data	Teacher 4, 6, 9, 10, 14
✓ Ability to have logical reasoning on issues/problems	Teacher 2, 6, 13
✓ Ability to systematically respond any provided information/data/knowledge	Teacher 4, 11, 15
✓ Ability to solve problems (problem-solving skill)	Teacher 3, 2, 8, 9,10, 16
✓ Ability to see information/issues from various perspectives and to compare provided data/knowledge/information from various sources	Teacher 1, 5, 7

As shown in Table 2, the teachers' conceptions on CT vary, but their understanding on CT is relevant to the revised Bloom's Taxonomy on the knowledge dimension especially related to factual knowledge as the teachers relate critical thinking to the ability to solve problems. The teachers' CT conception also contains procedural knowledge as they mention logical reasoning and systematically respond, which also involves understanding as a cognitive process (Krathwohl, 2002).

When answering further question dealt with their pedagogical knowledge to teach critical thinking for the online questionnaire, some participants were able to mention relevant strategies because they joined a workshop about CT strategies two days before (see Table 3).

Table 3. Theories of Critical Thinking Learnt by Teachers

Aspects	Participants
✓ Know-Analyze-Solve	Teacher 3,5
✓ Behaviorism-Constructivism	Teacher 1
✓ See Think Wonder and Claim Support Question	Teacher 2

From this workshop, they have absorbed the theories in a various portion such as 'Know-Analyze-Solve' strategy (Teacher 3 and Teacher 5), 'Behaviorism-Constructivism' (Teacher 1), 'See Think Wonder' as well as 'Claim Support Question' (Teacher 2), which is inspired by Ritchhart (2011). The rest of participants did not write any theories or concept they have learned and practiced. This finding shows that the teachers have diverse degree of pedagogical knowledge related to critical thinking. Some teachers might possess some practical knowledge without having an awareness that it belongs to strategies to teach students to think critically. This practical knowledge is called as everyday concept as the teachers earned the knowledge from their experiences, not from reading the literature and professional coursework.

The data from the questionnaire also revealed the teachers' attitude toward the significance of teaching CT (see Table 4).

Table 4. The Importance to teach CT

Aspects	Participants
✓ Very important	Teacher 1, 2, 13, 14, 17
✓ Important	Teacher 3, 5, 7, 8, 9, 10, 11, 12,15, 16
✓ Depends on the situation	Teacher 4

It is evident that most of the respondents (10 teachers) believed teaching and practicing the CT skills in the classroom were very important, and five teachers claimed

it was important. However, one of the teachers stated that it depended on the situation. Most of them have considered that CT skills are significant, and these teachers reported to have various attempts to teach CT in the classroom without explicitly labelling it as critical thinking.

The result of the interview with Teacher 4 and Teacher 15 provides a deeper picture of the teachers' understanding of the concept of CT education and its implementation as can be seen from the following excerpts.

Critical thinking is a person's ability to think coherently. I think it's a process of being able to solve a problem/see something structurally, and how he expresses it. So, like an ability to see problems, then find the solution, after that, explain the problem and solution in a systematic way, so that it shows well-rounded understanding. (Teacher 4)

Critical thinking is the ability to receive information and process information, look into problems and solve the problems. (Teacher 15)

These two teachers understood CT as the ability to receive information and process information, and ability to solve problems systematically, which is relevant to Krathwohl's (2002) dimensions of cognitive process and knowledge. Teacher 4's understanding of CT contained basic elements to solve problem that belong to knowledge dimension especially knowledge of terminology and knowledge of specific details and elements, and also cognitive process of understanding that start from interpreting problems, formulating the solution and explaining what has been done in a systematic way (Krathwohl, 2002). Teacher 15's conceptualization of CT involved the same dimension as Teacher 4, namely factual knowledge related to problems identification and understanding how to find the effective solution for the problem (Krathwohl, 2002). Based on their experiences, Teacher 4 and Teacher 5 can recognize critical students from the way the students solve problem and ask questions in class. They noticed that critical students like to ask questions and are always curious. According to Teacher 4 and Teacher 5, the factors that contribute to students' critical thinking ability deal with their experiences of living in foreign countries, English proficiency, reading habit, communication culture within their immediate environment, and whether their parents care about their children's education. Overall, the teachers of the International Class Program of SD *Laboratorium* UM showed different degree of knowledge about critical thinking pedagogy, which is influenced by their professional experiences and professional development.

#### *The Implementation of Pedagogies that Support Students' CT Development*

Based on the result of an online questionnaire, it is verified that the teachers' attempt to nurture students' critical thinking through the following activities (see Table 5). Table 5 presents the teachers' technique to teach critical thinking, among others (1) observing things/problems around the classroom, discussing the result, and asking the students to present what they have learned; and using teaching techniques which are able to improve students' CT skills, such as guided inquiry learning; (2) improving students' problem-solving skills by providing cases or issues related to their daily life, as well as to improve the students' literacy by asking them to read from various sources; and (3) providing authentic materials which evoke students' CT skills. However, some teachers do not label her strategies in teaching CT, but she has already implemented

CT. The teacher has practical knowledge on a student-centered approach, by asking students to reflect on their experiences, discussing problems and using questions to stimulate higher order thinking without labelling the strategies with particular technique.

Table 5. Teachers' Attempts to Teach CT in the Classroom

Attempts	Participants
✓ Providing Higher Order Thinking exercises	Teacher 1,10,16
✓ Observing things/problems around the classroom, discussing the result, and asking the students to present what they have learnt	Teacher 5,11,15
✓ Using teaching techniques which can improve students' CT skills, such as guided inquiry learning, etc.	Teacher 2,12,13
✓ Improving students' problem-solving skills by providing cases or issues related to their daily life	Teacher 3,8
✓ Improve students' literacy by asking them to read from various sources	Teacher 6,7,14
✓ Providing authentic materials which evoke students' CT skills	Teacher 4

The results of analysis on lesson plans and teachers' online classes show that critical thinking is not necessary to be explicit in teaching.

### 1) *Implicit Statements in Learning Objectives and Activities*

From the two selected teachers (Teacher 4 and Teacher 15), one lesson plan was collected, which was written by Teacher 4. The result of the lesson plan analysis shows an implicit statement of learning objectives and descriptions of activities that support the development of students' CT. The following are the learning objectives for English subjects.

<p>3. By reading the text entitled "Tsunami Survivors Home Sink, students are able to write the events orderly completely.</p> <p>4. By having discussion with friends, students are able to find the moral of the text, how to save our earth well.</p> <p>5. By having discussion with friends, students are able to show their real act to save our Earth clearly.</p>
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Figure 1. Teacher 4's statement of teaching objective in the lesson plan

The words that are highlighted are goals that contain higher-order thinking (Anderson et al., 2001; Krathwohl, 2002; Pohl, 2000). For purpose number 3, writing is included in the level of creative thinking, which requires students to produce writing in a coherent manner. Objective number 4 asks students to think about the meaning contained in the text, and the information is not explicitly written. Objective number 5, through discussion, students are asked to explain their actions to preserve nature, where these abilities make students connect experiences with learning in class.

The finding from the interview justifies the teacher's attempt to facilitate students' ability to demonstrate CT skills by giving stimulation and inviting participation for joint construction between teacher and students, as said by Teacher 4:

I provoke students to speak by asking questions and helping them to make conclusion together with the whole class so that all students make a contribution. Sometimes there are children who cannot express their ideas verbally but can express them well through writing. (Teacher 4)

Teacher 4 also considered individual differences as she provides a place for students to express their ideas in written form. It can be concluded that the teacher has understood the concept of CT and supported the idea of incorporating CT in their teaching. This finding indicates that to some extent, Teacher 4 has played her role as a facilitator for students' CT development in the teaching and learning process in the classroom.

Another finding from the interview and analysis on lesson plans informs that explicit statement of CT as learning objective can be found in the coursebook for International based curriculum and tests, as told by Teacher 4, "Yes, it is written in "Progression" and "Checkpoint" tests... several questions require students to think critically". In contrast, the teachers' lesson plan did not always state critical thinking as a learning goal explicitly. Nevertheless, teachers implemented CT pedagogy with/without explicit statements of purpose. Teacher 15 said, "For the learning objectives themselves, sometimes it is written, sometimes not, but critical thinking education is applied in student activities." Upon checking the lesson plan that is submitted by Teacher 4, HOTS-High Order Thinking Skills and critical thinking are explicitly written as the approach used to guide the students in activity 1 and 5 (see Figure 2), although the steps are not written clearly.

- 1) **Exploration:** Students observe the picture Tsunami in Aceh and Palu (*Hots*)
- 2) **Collecting Data:** Students listen to the audio and try to understand about the content of the text by having a discussion with friends.
- 3) **Communication:** Students tell their opinion in-class discussion.

**A. Let's read**

- 4) Students read the information "Disaster Plan, Are you Ready".
- 5) Students write the missing words given in the box with suitable statements. (*Critical Thinking*).

**B. Let's write**

After the teacher's explanation, students are:

- Writing the order of information given as in the text entitled Tsunami Survivors' Homes Sink

**C. Let's Act**

- By having a discussion, students find the moral of the story. How people can save the earth.
- Students show or mention their real action about how they have saved the Earth, the real action.

Figure 2. Critical thinking in lesson plan

Teacher 4 implemented critical thinking strategies in activities such as observation, discussion, and explanation, and connecting the texts the students learned in the class with their experiences in real life. This finding aligns with critical thinking in the domain of skill and action that focus on individual development (Davies & Barnett, 2015). The finding from video analysis justified the finding from the interview, in which, Teacher 4 and Teacher 15 prepared students to carry out activities that require higher-order thinking by activating students' background knowledge through discussion, and then they also facilitated students in activities that require higher-order thinking through questioning.

Another finding from lesson plan analysis deals with the contextual factor (Borg, 2006). The pandemic situation and the school did not provide a special format of lesson plan. As a result, the clarity and completeness of the lesson plans were different among

teachers. Some teachers write the lesson plan clearly and coherently, but the other teachers write incomplete lesson plans, as she did not explain how the evaluation of students' learning is administered. Moreover, there are some challenges related to online learning, especially in this pandemic condition. The first one is about timing. From the analysis of lesson plans and zoom meeting recording, the duration of the online class written in the lesson plan and the time length taken in the real implementation of online learning did not match. The second one is about the assessment of the process and the learning result. From the data analysis, it is difficult to see the assessment of process and the learning result in the zoom recordings. This issue can be understood because the duration of the Zoom meeting is quite short and it might due to teachers' consideration to minimize the cost of Internet connection for the students.

In summary, the study findings indicate that the teachers' knowledge base of CT is shaped by their experiences in implementing international-based curriculum and professional developments, which are not specifically about critical thinking pedagogies. They understood CT as higher-order thinking of Bloom's taxonomy, which belongs to conception in the educational approach (Lai, 2011). The teachers used the taxonomy to construct lesson plans, especially on the teaching objective, activities, and evaluation, and from the lesson plan, the teacher has implemented higher-order thinking in the learning activities, as can be seen in the video submitted by Teacher 4 and Teacher 15.

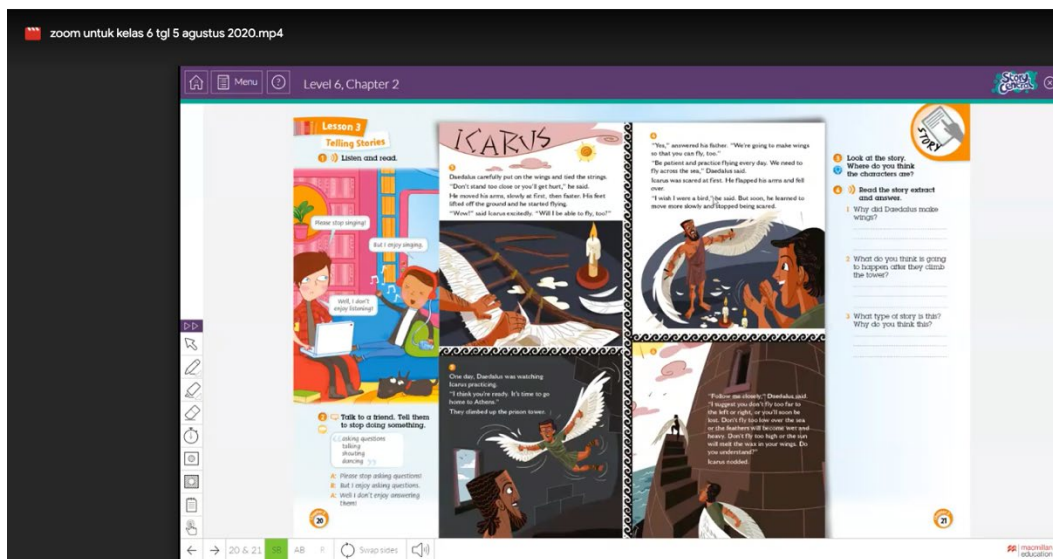


Figure 3. Screen Shot of Teacher 4's Learning Practice

## 2) Materials, Media and Teacher Guidance

The results of the interview with Teacher 4 and Teacher 15 added information about the techniques used to stimulate CT, namely using media from a real object, picture, video, textbook, and the most important one is the teacher guiding questions. Teacher 15 exerts, "If the topic is part of the plant, I will bring plants and show students the parts of each plant. (Teacher 15, Science/Math teacher). For English subjects, teacher 4 stimulates children's ability to explain using pictures, as she said, "For example, for the topic of natural disaster, I use pictures and introduce appropriate vocabulary and grammar. I asked them to describe the picture in 2 sentences, but they were able to write more sentences." (Teacher 4, English teacher). The result of analysis on the



Teacher's 4 pre-recorded video that was used to teach English, justified the finding from the interview. In the video that lasted for 13 minutes, Teacher 4 used pictures and audio-visuals as media to guide students in learning English. Figure 3 shows the Teacher's four online class that was delivered through Zoom meeting.

Figure 3 showed the textbook that was used by Teacher 4, which contained interesting pictures, accompanied by audio material and exercises. The length of the video is 13 minutes, and the teacher delivered the lesson in full English. There was no interaction with the students, so how Teacher 4 guided the students in the thinking process was not captured through the video as she held discussion with the students in the WhatsApp Group, which was not captured in this study.

The result of the video analysis on Teacher 15's online class shows how she coherently guided students to learn about angles. She started the lesson with an explanation about the learning objectives, then she gave examples of angles in the form of audio-visual material taken from YouTube. She invited students to ask questions any time. The video lasted for 29 minutes, and she used mixed language, English and Indonesian, to interact with the students. She often stopped the video to add explanation and clarification (Figure 4).

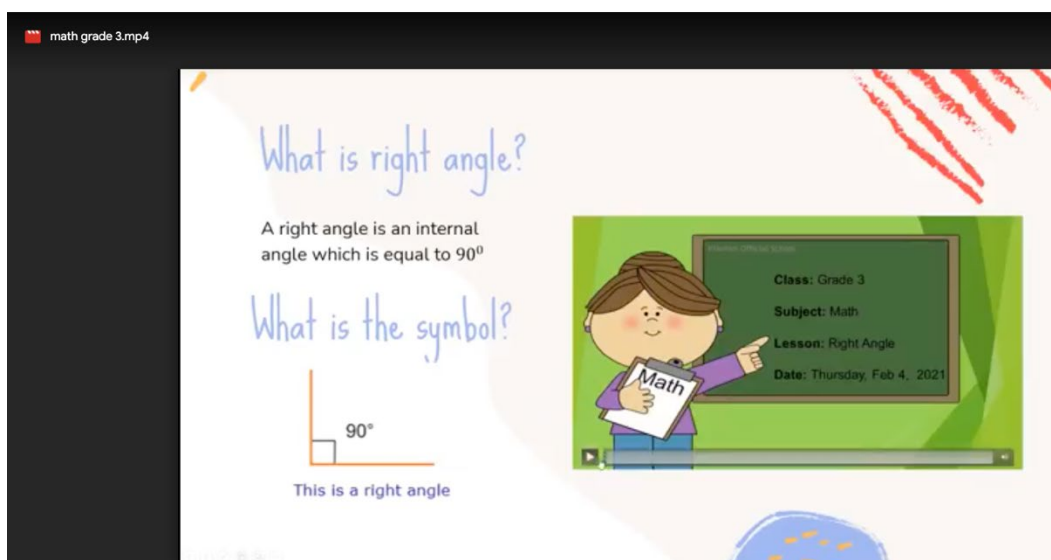


Figure 4. Screenshot of the exercise given by Teacher 15

Whenever necessary, Teacher 15 paused the video, and repeated the explanation of the learning objectives and guided the students to do the exercises by drawing angles in the textbook, and ended with strengthening in the form of reflection and motivating students to complete the task. During the teaching, one student had poor connection and the teacher repeatedly checked by asking question, e.g., “Does the picture has the right angel? What is *quadrilateral*?” (Teacher 15). If the students did not know the answer, she directly provided the explanation. She did not use any questions that trigger students reasoning or seeking the answer by exploring textbook or resources in the Internet, but she focused on students' understanding on the lesson given through the audio-visual material. Another student sang during the class, but the teacher just said, “who is singing?” calmly. The teacher often asked question whether the students understood the lesson in the video. Teacher 15 was very patient and she talked mostly in Bahasa Indonesia, not English. In the end, the teacher guided the reflection by

asking students about the lesson they learned for today, connected with the learning objective on that day. The students actively answered question and engaged to the lesson delivered by Teacher 15.

To sum up, the results of online questionnaire, interview, analysis on lesson plan and teachers' teaching video consistently show that teachers already have basic knowledge of CT, and in practice CT education is implemented inherently as part of everyday learning practices. The manifestation of CT pedagogical practice is in the form of material chosen by the teacher, lesson plans, and the implementation of learning in the classroom. Teachers have played an active role in guiding students through questions and instructions supported using audio-visual media, textbooks and even realia. The teacher has acted as a More Knowledgeable Other (Johnson, 2009; Vygotsky, 1978; Vygotsky, 1987) for their students who guides students to acquire factual knowledge and knowledge of procedure (Krathwohl, 2002), and knowledge also belongs to one of components of critical thinking (Thomas & Lok, 2015). This finding indicates that in elementary school, the critical thinking pedagogy should focus on empowering students with strong knowledge from understanding the material in the class, which is connected to their real-life experiences.

#### *Challenges Faced by the Teachers and How They Cope with Them*

The finding from the online questionnaire indicates that the teachers came across difficulties at different levels. Most of them perceived that teaching and practicing CT skills in the classroom were not easy (9 teachers); four teachers stated it was sufficiently difficult, and surprisingly, two teachers stated it was not difficult. This finding is related to the challenges the teachers faced as can be seen in Table 6.

Table 6. Challenges to Teach CT in the Classroom

Challenges	Participants
✓ Students' age is too young	Teacher 4,9
✓ Online learning due to COVID-19	Teacher 11
✓ Students are not accustomed to HOTS	Teacher 1
✓ Difficulties to select appropriate teaching materials	Teacher 3
✓ Lack of time allotment in the classroom because the scopes of materials in the curriculum are too big	Teacher 7,9,10
✓ Language problems	Teacher 6
✓ Low literacy ability	Teacher 5

Table 7. Teachers Attempts to Conquer the Challenges in Teaching Critical Thinking in the Classroom

Solutions	Participants
✓ Arranging more time-efficient teaching activities	Teacher 1,13
✓ Providing graded questions from simple to hard in the questioning session	Teacher 12
✓ Providing more reading materials	Teacher 5
✓ Having reflection after teaching and making articles from the reflection	Teacher 2
✓ Giving motivation to the students	Teacher 8
✓ Providing rewards for the students	Teacher 10
✓ Joining CT workshops	Teacher 3
✓ Giving stimulus in the classroom	Teacher 11

Table 6 shows that the challenges faced by the teachers dealt with the students' young age, the incongruence between time allotment and the large scope of materials to be presented, and their low competence in literacy (reading and writing). The other challenges referred to the difficulties in selecting appropriate teaching materials, language problems, and not being accustomed to HOTS (Higher Order Thinking Skills).

The practice of fully online learning during the pandemic was also one of the many challenges reported by the teachers. To face the challenges, teachers admitted to performing diverse attempts displayed in Table 7.

As can be seen in Table 7, the teachers paid attention to the students most to improve the quality of their teaching and to make the students engaged to the class. This result indicates the teachers' agency (Johnson, 2009) in implementing pedagogies that support students' development of critical thinking. Even though there exist challenges, the respondents have had various attempts to conquer them. Even though they faced difficulties in implementing CT in the classroom, the teachers acknowledged the existence of supporting factors, among others: the availability of various teaching materials, teaching media, and books, the provision of school infrastructure and technology, the implementation of the appropriate curriculum framework, teaching approach, and teaching techniques as well as sufficient time allotment, and lastly, the result of students' needs analysis.

Eventually, the respondents put forward some suggestions to improve the implementation of CT skills in the classroom, as described in Table 8.

Table 8. Teachers' Suggestions to Improve the Implementation of Teaching CT Skills in the Classroom

Supporting Factors	Participants
✓ Boosting CT practices into the lessons	Teacher 1
✓ Conducting needs analysis	Teacher 2
✓ Having regular Continuous Teachers' Professional Development	Teacher 4,6,7
✓ Using authentic materials which are close to students' daily life	Teacher 5

Table 8 presents the teachers' aspiration to support CT education in elementary school, among others: regular continuous professional development, encouragement on CT practices into the lessons, needs analysis, and use of authentic materials close to students' daily life.

The result from the interview provides some additions to teachers' suggestions to improve the implementation of teaching CT in the classroom. First, there is no explicit policy about the implementation of CT, therefore it is expected that it can be added to the policy so that later the implementation of CT will be clearer. Second, there is no supervision in content making and material development. Therefore, a supervisor in material development in terms of content and language is needed.

## Conclusions

The purpose of this study is to understand how critical thinking is implemented in an International Class Program (ICP) of SD *Lab* UM, especially in the subjects with English as the medium of instruction. The focus of the study deal with how the teachers understand critical thinking for elementary school students, what strategies have been applied by teachers to support student's development of critical thinking, and what factors are obstacles for teachers. It can be concluded that the teachers have adequate practice knowledge of critical thinking pedagogies earned from professional development, which is not necessarily deal with critical thinking. Also, they learned about critical thinking pedagogies from the implementation of the International Based Curriculum, especially from the use of textbooks and tests which require students' higher-order thinking. The pedagogies implemented in the class are mostly questioning



to ensure students' knowledge construction, and to do this, the teachers rely on the textbooks or media used in the class. Although the teachers faced some challenges, they showed high agency to implement pedagogies that support students' development of critical thinking. They attempted to develop quality material to support students' critical thinking development, but they were not confident with the content and the English language quality. The study finding also reveals the use of Indonesian was still dominant to assist students' understanding on the lesson. Therefore, continuous training to improve teachers' English language proficiency and CT pedagogy needs to be established to strengthen teacher understanding and empower CT education in ICP SD *Lab* UM. Furthermore, there is no explicit policy in implementing CT in the school policy, and thus, explicit policy, such as the standard process of teaching that incorporates CT pedagogy and EMI, along with practical guidance, is necessary to construct. Future researchers are recommended to involve broader participants and different level of education such as secondary schools, kindergarten, and play group.

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## References

- Ab Kadir, M. A. (2017). What teacher knowledge matters in effectively developing critical thinkers in the 21st-century curriculum? *Thinking Skills and Creativity*, 23, 79-90. doi:<http://dx.doi.org/10.1016/j.tsc.2016.10.011>
- Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J., & Wittrock, M. C. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Addison Wesley Longman, Inc.
- Bart, W. (2010). *The measurement and teaching of critical thinking skills*. [Paper presented at the invited colloquium]. Center for Research on Educational Testing, Tokyo, Japan.
- Bok, D. C. (2006). *Our underachieving colleges: A candid look at how much students learn and why they should be learning more*. Princeton University Press.
- Bonney, C. R., & Sternberg R. J. (2011). Learning to think critically. In R. E. Mayer & P. A. Alexander (Eds.), *Handbook of research on learning and instruction* (pp. 166-196). Routledge.
- Borg, S. (2006) *Teacher cognition and language education*. Continuum.
- Bouygues, H. L. (2018). *The state of critical thinking: A new look at reasoning at home, School, and Work*. Reboot Foundation.
- Cortazzi, M., Pilcher, N., & Jin, L. (2011). Language choices and 'blind shadows': Investigating interviews with Chinese participants. *Qualitative Research*, 11(5), 505-535. doi:10.1177/1468794111413225
- Davies, M., & Barnett, R. (2015). Introduction. In M. Davies & R. Barnett (Eds.), *The Palgrave handbook of critical thinking in higher education* (pp. 1-25). Palgrave Macmillan.
- Delamin, C., & Spring, J. (2021). *Teaching critical thinking skills*. Routledge.
- Egege, S., & Kutieleh S. (2004). Critical thinking: Teaching foreign notion to foreign students. *International Education Journal*, 4(4), 75-85.
- Facione, P. A., & Gittens C. A. (2013). *Think critically*. Pearson.
- Flage, D. E. (2004). *The Art of Questioning: An Introduction to critical thinking*. Pearson.

- Ilyas, H. P. (2015). *CT: Its representation in Indonesian ELT textbooks and education*. University of York.
- Johnson, K. E. (2009). *Second language teacher education: A sociocultural perspective*. Taylor & Francis.
- Kagan, D. M. (1992). Implication of research on teacher belief. *Educational Psychologist*, 27(1), 65-90.
- Kang, J. S. (2014). Teaching young learners in English as a second/foreign language settings. In M. Celce-Murcia, D. Brinton, M. & M. Snow, Ann (Eds.), *Teaching English as a second or foreign language* (pp. 550-568). National Geographic Learning.
- Krathwohl, D. R. (2002). A revision of Bloom's Taxonomy: An overview. *Theory Into Practice: Revising Bloom's Taxonomy*, 41(4), 212-218.
- Kurniaman, O., Noviana, E., & Munjiatun. (2020). The ability of critical thinking of elementary school students using a graphic organizer instrument. *JMIE, Journal of Madrasah Ibtidaiyah Education*, 4(2), 206-216. <http://dx.doi.org/10.32934/jmie.v4i2.166>
- Lai, E. R. (2011). *Critical thinking: A literature review*. Pearson's Research Report.
- Manalo, E., Kusumi, T., Koyasu, M., Michita, Y., & Tanaka, Y. (2015). Do students from different cultures think differently about critical and other thinking skills? In M. Davies & R. Barnett (Eds.), *The Palgrave handbook of critical thinking in higher education* (pp. 295-316.) Palgrave Macmillan.
- Masduqi, H. (2006). *Critical thinking skills and meaning in English language teaching*, *TEFLIN Journal*, 22(2), 185-200.
- Mehta, S. R., & Al-Mahrooqi, R. (2014). Can thinking be taught? Linking critical thinking and writing in an EFL Context. *RELC Journal*, 46(1), 23-36.
- Movafagh, S. A., & Tahriri, A. (2014). EFL learners' attitudes towards critical thinking instruction. *Modern Journal of Language Teaching Method (MJLTM)*, 4(3), 45-53.
- Patton, M.Q. (2015). *Qualitative research and evaluation methods*. 4th ed. Sage.
- Paul, R., Binker A. J. A., Martin, D., Vetrano, C., & Kreklau, H. (1989). *CT Handbook: 6th – 9th Grades: A Guide for Remodelling Lesson Plans in Language Arts, Social Studies, & Science*. Sonoma State University, Center for CT and Moral Critique.
- Penguatan Pendidikan Karakter (Character Education Reinforcement). (2021, January 15). *Pelajar Pancasila*. The website of Penguatan Pendidikan Karakter: [https://cerdasberkarakter.kemdikbud.go.id/?page\\_id=2817](https://cerdasberkarakter.kemdikbud.go.id/?page_id=2817)
- Peraturan Direktur Jenderal Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan Nomor 3928/B/Hk/2020. (2020). *Rencana Strategis Direktorat Jenderal Guru dan Tenaga Kependidikan Tahun 2020-2024*. [https://drive.google.com/file/d/1p6RbXqHje-I8\\_S47jtG952lcXVdRgGE/view](https://drive.google.com/file/d/1p6RbXqHje-I8_S47jtG952lcXVdRgGE/view)
- Peraturan Menteri Pendidikan dan Kebudayaan Nomor 22 Tahun 2016. (2016). *Standar Proses Pendidikan Dasar dan Menengah*. [http://repositori.kemdikbud.go.id/4790/1/Permendikbud\\_Tahun2016\\_Nomor022.pdf](http://repositori.kemdikbud.go.id/4790/1/Permendikbud_Tahun2016_Nomor022.pdf)
- Pinter, A. (2006). *Teaching young language learners*. Oxford University Press.
- Pohl, M. (2000). *Learning to thinking, thinking to learn: Models and strategies to develop a classroom culture of thinking*. Hawker Brownlow Education.
- Prayatni, I. (2019). Teaching English for young learners. *Jurnal Ilmiah Pendidikan Profesi*, 4(2). DOI: <https://doi.org/10.29303/jipp.v4i2.90>
- Ritchhart, R. (2015) *Creating cultures of thinking: The 8 forces we must master to truly transform our schools*. John Wiley & Sons, Incorporated.
- Ritchhart, R., Church, M., & Morrison, K. (2011). *Making thinking visible*. Jossey-Bass.
- Saadé, R. G., Morin, D., & Thomas, J. D. E. (2012). Critical thinking in E-learning environments. *Computers in Human Behavior*, 28(5), 1608–1617. <https://doi.org/10.1016/j.chb.2012.03.025>
- Saldana, J. (2013). *The coding manual for qualitative researchers* (2<sup>nd</sup> ed.). Sage.

- Shaheen, N. (2016) International students' CT-related problems areas: UK university teachers' perspectives. *Journal of Research in International Education*, 15(1), 18-31.
- Sidiq, Y., Ishartono, N., Desstya, A., Prayitno, H.J., Anif, S., & Hidayat, M.L. (2021). Improving elementary school students' critical thinking skill in science through HOTS-based science questions: A quasy-experimental study. *Jurnal Pendidikan IPA Indonesia*, 10(3), 378-386. doi: 10.15294/jpii.v10i3.30891
- Sun, R. C. F. N., & Hui, K. P. (2012). Cognitive competence as a positive youth construct: A conceptual review. *The Scientific World Journal*, 2012;2012:210953. doi: 10.1100/2012/210953
- Tous, M. D., Tahriri, A., & Haghghi, S. (2015). The effect of instructing critical thinking through debate on male and female EFL learners' reading comprehension. *Journal of the Scholarship of Teaching and Learning*, 15(4), 21-40.
- Undang Undang Nomer 14 Tahun 2005. (2005). *Guru dan Dosen*. <https://peraturan.bpk.go.id/Home/Details/40266/uu-no-14-tahun-2005>
- Vygotsky, L. S. (1978). *Mind in society the development of higher psychological processes*. Harvard University Press.
- Vygotsky, L. S. (1987). *The collected works of L. S. Vygotsky problems of general psychology, including the volume thinking and speech* (1st ed.). NY Springer US.
- Widodo, H. P. (2012). Pedagogical tasks for shaping EFL college students' writers' critical thinking and self-voicing. *International Journal of Innovation in English Language Teaching*, 1(1), 87-99.
- Woods, D. (1996). Teacher cognition in language teaching. In M. H. Long & J.C. Richards (Eds.), *The Cambridge applied linguistics series* (pp. 89-112). Cambridge University Press.
- Zohar, A., & Barzilai, S. (2015). Metacognition and teaching higher order thinking (HOT) in science education: Students' thinking, teachers' knowledge, and instructional practices. In R. Wegerif, L. Li, & J. Kaufman (Eds.), *Routledge international handbook of research on teaching thinking* (pp. 229-242). Routledge.