

Cultivating junior high school students' critical thinking skills by using short-videos in english language classroom

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ABSTRACT

An effective teaching method for cultivating students' critical thinking skills of junior high school students in Indonesia is very necessary as their critical thinking ability is still low. This research is a descriptive study which aimed at cultivating learners' critical thinking by using short-videos since it is believed that technology can motivate the students, increase their interest, engage them to the lesson matter, provide effective learning activities, and demand them to think critically and creatively. The subject in this study were 130 Junior High School students (SMP Negeri 1 Sedayu, Yogyakarta) grade IX. The students were homogeny in term of age, economic, and social background as well as in English language score. Facione's critical thinking rubrics were used to indicate the level of students' critical thinking such as their interpretation, analysis, evaluation, inference, explanation, and self-regulation skill of short video. The average score of all item in pre-test critical thinking skills was at fair level with the score 9 out of 20. The results indicate the students' interpretation skills were fair with the score of 9 out of 20; analytical skill was 12; evaluation skill was 9 out of 20; self-regulation was in fair criterion with the score of 5 out of 10 and good level of explanatory's skill with the score 6 out of 10, while 12 for inferences. It can be concluded that the critical thinking skill of the students of Junior High School was still unsatisfactory as most of them can only reach fair levels. The use of video cannot improve all critical thinking skills. It is recommended more practices for the students.

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1. Introduction

The need for obtaining an effective teaching method for cultivating students' critical thinking skills of junior high school students in Indonesia is paramount because their critical thinking ability is still low. It is revealed from research done by the Program for International Student Assessment (PISA) 2015 that Indonesia science literacy score is 403, which is lower than OECD (493). The average performance in the reading of 15-year-olds is shown 397, compared to an average of score OECD 493 (PISA, 2015). It reflects that Indonesian students' skill in answering the questions refer to critical, logical, and problem-solving skills are still insufficient. Students needed to be trained during the learning process.

Kamali & Fahim (2011:2), mentioned,

...critical thinking is the skill to look over, against with own perspectives, and promote ideas; to argue inductively and deductively, and to reach factual or judgmental conclusions based on firm inferences drawn from clear statements of knowledge or belief.

There are some factors that affecting critical thinking of Indonesian students: the language proficiency, assessment methods, motivation, support at home, prior linguistic knowledge, learning environment, teaching strategies, comprehensible input, student personality, age, comfort in their country of residence, etc (Indah, 2016).

Several studies have been conducted to foster the Indonesian students' critical thinking (Elisanti, 2017; Haridz and Irving, 2017; Saputri, Sajidan, and Rinanto, 2018) but the results are still unsatisfactory as the students critical thinking were at the average level. The results of previous research have not achieved the Indonesian National Education Standards Agency (BSNP) standard that must be met in the 21st-century education process in which the students should have changed factual thinking style to the critical, and from the delivery of knowledge to the exchange of knowledge (BSNP, 2010)

The idea of combining critical thinking into education was developed by Greek philosophers after World War II and strengthen by Bloom in the 1950s with his Taxonomy of Educational Objectives. The idea was gladly accepted in the 1980s. It has held the probe of time and yet there is still a deliberate need for strengthening the critical thinking skills in schools and colleges (Djiwandono, 2013). It is effortless and common by the teachers to transfer the knowledge from textbooks to the students, nevertheless, to make learners think more independently and learn from themselves beside textbooks is a great challenge/effort (Djiwandono, 2013). Combine critical thinking into education could help learners to deal with social and environmental issues (Djiwandono, 2013).

Critical" is from the Greek word "krisis", which means "to separate". Without critical thinking one might not be able to separate himself from the crisis which sucks into the damage, even he or she might block his or her pathways to success. Non-traditional thinking, grounded in traditional, logical idea, allows us to determine exactly what the crisis is and how to move out of it (Caroselli, 2009). Paul (1995) says, "Critical thinking is thinking about your thinking while you are thinking in order to make your thinking better".

According to Fahim (2010), critical thinking is learning how to ask and answer questions of analysis, synthesis, and evaluation. In detail, Facione (2015) defined the core critical thinking skills into two categories, cognitive and disposition skills.

Cognitive skills are meant being in the very core of critical thinking. It involves six skills namely: interpretation, analysis, evaluation, inference, explanation, and self-regulation. Facione (2015) explains, interpretation is to comprehend and express the meaning or significance of a wide variety of "experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria" (p: 15). The categorization, decoding significance, and clarifying meaning is considered the sub-skills of interpretation (Facione, 2015). The analysis is considered as an ability to identify the intended and real inferential relationships between statements, questions, concepts, descriptions, or other forms of representation. The experts infer examining ideas, detecting arguments, and analyzing arguments as sub-skills of analysis (Facione, 2015). The evaluation is judging about the arguments whether it is reliable and rational based on the logic and evidence given. The inference is the ability to identify, to decide what to believe, to draw reasonable conclusions based on strong logic, to form assumptions and hypotheses and to grasp relevant information or consequences of this decision. The experts involve querying evidence, conjecturing alternatives, and drawing conclusions as sub-skills of inference (Facione, 2015). The explanation is the ability to communicate and present in a cogent and coherent way. The sub-skills under clarification are describing methods and outcome, giving a reason on procedures, proposing and stand up for with good reasons one's factual and theoretical explanations of events or points of view, and come with full and well-reasoned, arguments in the context of findings the best comprehension possible (Facione, 2015). The self-regulation is one's the ability to monitor his or her own thinking, being conscious in cognitive

activities. Two sub-skills were defined by experts in self-regulation: self-examination and self-correction. Which means one has the ability to monitor and correct flaws in logic (Facione, 2015).

The disposition is,

... the ideal critical thinker who is habitually curious, well-literate, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit (Facione, 2015:15).

The ability to think critically, however, will not ensure unless one has a strong intention and initiative to combine in the process relevant to it. In addition, besides the ability to enhance in cognitive skills, good critical thinkers needed to have strong intention to identify the significance of good thinking and have the creativity to seek better judgment (Shirkhani & Fahim, 2011).

Engaging critical thinking into the language learning process or activities is considered as one of the language teachers' innovation because the students will expand their learning experience and will learn the language meaningfully. The learners' good performance indicates that they have good critical thinking skills (Pinter, 2017). Some studies have confirmed that critical thinking skills improve ESL writing ability language proficiency, oral communication ability, etc (Alharbi, 2015; Hawks, Turner, Derouin, Hueckel, Leonardelli, & Oermann, 2016; Indah, 2013; Samanhudi, & Sampurna, 2010; and Shirkhani & Fahim, 2011).

Language skills cannot be separated from cognitive or critical thinking. Teaching critical thinking skills includes transferring the facts or information or concepts (Krathwohl, & Anderson, 2009). Critical thinking is focused on deciding what to believe or to do (Norris & Ennis, 1996).

Language learners who have critical thinking skills are more creative and capable than those who haven't to achieve the goals of the curriculum. Shirkhani & Fahim (2011:3) mentions,

Learners with critical thinking skills are capable of thinking critically and creatively; capable of making decisions and solving problems; capable of using their thinking skills, and of understanding language or its contents; capable of treating thinking skills as lifelong learning; and finally they are intellectually, physically, emotionally and spiritually well-balanced.

This research was done to foster students' critical thinking skills through the use of short-videos since it is believed that technology can motivate the students; increase their interest; engage them to the lesson matter; provide them with effective learning activities; and involve them to think critically and creatively (Carvajal, & Paulina, 2019; Ding, Ottenbreit-Leftwich, & Glazewski, 2019; Gurbangeldiyewna, 2016; McQuiggan, McQuiggan, Sabourin, & Kosturko, 2015; Ohler, 2013; and Sulla, Bosco, & Marks, 2019).

An effective teaching method for cultivating students' critical thinking skills of junior high school students in Indonesia is very necessary as their critical thinking ability is still low. This research is a descriptive study which aimed at cultivating learners' critical thinking by using short-videos since it is believed that technology can motivate the students, increase their interest, engage them to the lesson matter, provide effective learning activities, and demand them to think critically and creatively. The subject in this study were 130 Junior High School students (SMP Negeri 1 Sedayu, Yogyakarta) grade IX. The students were homogeny in term of age, economic, and social background as well as in English language score. Facione's critical thinking rubrics were used to indicate the level of students' critical thinking such as their interpretation, analysis, evaluation, inference, explanation, and self-regulation skill of short video. The average score of all item in pre-test critical thinking skills was at fair level with the score 9 out of 20. The results indicate the students' interpretation skills were fair with the score of 9 out of 20; analytical skill was 12; evaluation skill was 9 out of 20; self-regulation was in fair criterion with the score of 5 out of 10 and good level of explanatory's skill with the score 6 out of 10, while 12 for inferences. It can be concluded that the critical thinking skill of the students of Junior High School was still unsatisfactory as most of them can only reach fair levels. The use of video cannot improve all critical thinking skills. It is recommended more practices for the students.

2. Method

This is descriptive research using the instruments which developed based on the rubrics of critical thinking skills developed by Facione (2015). The subjects in this study were 130 students in grade 9 (5 classes) of Junior High School students (SMP Negeri 1 Sedayu, Yogyakarta) selected through purposive sampling technique. The data were obtained from the analysis of student answers. After coding each student's answers and scoring them, then they were categorized into several score levels excellent, good, average, fair, poor, or very poor in term of students' interpretation, analysis, evaluation, inference, explanation, and self-regulation skills. Facione's critical thinking rubrics were used to determine the level of students' critical thinking as seen in table 1 and 2 below;

Table 1. Rubric for rating the critical thinking (Facione, 2015. p: 9)

Skill/category	Core critical thinking skills Experts' Consensus Description	Subskill/elements	Score
Interpretation	"To comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria"	Categorize	Excellent- 18-20
		Decode significance	Good - 13-17
		Clarify meaning	Average - 10-12
			Fair - 7-9
			Poor-5-6
		Very poor- 0-5	
Analysis	"To identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express belief, judgment, experiences, reasons, information, or opinions"	Examine ideas	Excellent- 18-20
		Identify arguments	Good - 13-17
		Identify reasons and claims	Average - 10-12
			Fair - 7-9
			Poor- 5-6
		Very poor- 0-5	
Inference	"To identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to reduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation"	Query evidence	Excellent- 18-20
		Conjecture alternatives	Good - 13-17
		Draw logically valid or justified conclusions	Average - 10-12
			Fair - 7-9
			Poor- 5-6
		Very poor- 0-5	
Evaluation	"To assess the credibility of statements or other representations that are accounts or descriptions of a person's perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions, or other forms of representation"	Assess credibility of claims	Excellent-18-20
		Assess quality of arguments that were made using inductive or deductive reasoning	Good - 13-17
			Average - 10-12
			Fair - 7-9
			Poor- 5-6
		Very poor- 0-5	
Explanation	"To state and to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological, and contextual considerations upon which one's results were based; and to present one's reasoning in the form of cogent arguments"	State results	Excellent- 9-10
		Justify procedures	Good - 7-8
		Present arguments	Average - 5-6
			Fair - 3-4
			Poor- 1-2
		Very poor/Fail- 0	

Self-Regulation	“Self-consciously to monitor one’s cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis, and evaluation to one’s own inferential judgments with a view toward questioning, confirming, validating, or correcting either one’s reasoning or one’s results”	Self-monitor Self-correct	Excellent- 9-10 Good - 7-8 Average - 5-6 Fair - 3-4 Poor- 1-2 Very poor/Fail- 0
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Table 2. Critical Thinking category and its score

Category	Score
1.Interpretation	20
2.Analysis	20
3.Inference	20
4.Evaluation	20
5.Explanation	10
6.Self-Regulation	10
Total	100

3. Findings and discussion

To cultivate students' critical thinking skills by using short-videos, the researcher used pair discussion forum in which the student work in a pair of two and keep giving and asking for opinions. Among the questions are; (1) what do you think about the video?, (2) why do you think that?, (3) what is your knowledge based upon the video?, (4) what does it implies and presuppose?, (5) what explains it, connects to it, leads from it?, (6) how are you viewing it?, (7) should it be viewed from different perspective?, and additional questions students could create by using (8) if, how about, and if you were-were. The students have a very limited answer and most of them cannot explain the reasons.

From those questions, the students, actually, are expected to perform the 4C skills: communicative.1) by responding to the questions (they will achieve communicative skill); collaborative. 2) by working in pairs (they will collaborate); critical thinking and problem-solving. 3) by thinking about the hidden part of the shown videos (they will think critically, and will try to solve the problem logically based on their own perspectives); and creative and innovative. 4) by relating the short-videos to their own life activities (they will improve their creativity and innovation to solve any kind of problem that might appear in their life activities).

After the researcher turned the video for one to four minutes with a pause in the middle or in the required minutes, the students have to guess what will happen or the students have to answer the related questions and explain it with good reason(s). Then after watching the whole part of the short video, they have to start thinking critically, evaluate the problem, and try to give logical answers for the questions by connecting the video to their real life.

1. Students’ critical thinking skills

The researcher after implementing the short-videos with junior high school students she analyzed the collected data using Facione (2015) rubric which includes six objectives of critical thinking skills, interpretation, analysis, inference, evaluation, explanation, and self-regulation. The analyzed data didn't display good results. It can be clearly seen in the following table;

Table 3. Scoring critical thinking skills of students’ based Facione (2015) cognitive skills

No	Category	Excellent (18-20)	Good (13-17)	Average (10-12)	Fair (7-9)	Poor (5-6)	Very poor (0-5)
1	Interpretation	0st / 130st	4st / 130st	10st / 130st	102st / 130st	12st / 130st	4st / 130st
2	Analysis	2st / 130st	2st / 130st	78st / 130st	32st / 130st	12st / 130st	4st / 130st
3	Inference	8st / 130st	24st / 130st	88st / 130st	6st / 130st	2st / 130st	2st / 130st

No	Category	Excellent (9-10)	Good (7-8)	Average (5-6)	Fair (3-4)	Poor (1-2)	Very poor (0)
4	Evaluation	2st / 130st	2st / 130st	28st / 130st	88st / 130st	8st / 130st	2st / 130st
5	Explanation	8st / 130st	26st / 130st	86st / 130st	6st / 130st	4st / 130st	0st / 130st
6	Self-regulation	4st / 130st	4st / 130st	80st / 130st	38st / 130st	4st / 130st	0st / 130st

st = students

2st = 1 pair

/ = out of

Since the researcher used the pair work in her teaching process, the data also obtained from pairs and the students' respond accepted directly based on two students' discussions. The results of their response show that they were still on average and fair levels. The majority of the students barely on in fair level performed the meaning, situations, data, events, judgments, conventions, beliefs, rules, or procedures, which are belong to the category of interpretation. Only 2 pairs from 5 classes (130 students) performed better than others. There were 5 pairs responded in average level, and the rest pairs almost couldn't respond anything or they performed poorly and very poorly.

The students while watching the videos they also asked to analyze by examining the ideas, identifying the arguments, and identifying the reasons and claims. However, they admit that they didn't understand the narrator's speech in the video and couldn't identify what was actually going in the video. As a result, the majority students' response only showed the average level of critical thinking.

The same problem happened when the students were doing the evaluation. They weren't really sure with their answers and were expecting the exact answers from the instructor. They made very weak conclusions. The students respond to what they see from the video but they still were far to do the logical evaluation. Only 2 pairs could give good examples. Those students linked the played video with their life experience and it was clear those 2 pairs had developed thinking even before this study. They had good logical reasons with examples and the answers were suitable to the questions.

The self-regulation also was at an average level since the students mostly were learning the language using digital translators and they weren't even aware that they were making mistakes while speaking in English. However, there were many students who used the phrases "*I mean*", "*how to say*", "*how to explain*". That self-monitor still was accepted at an average level. Only 2-3 pairs were clearly aware of their mistakes, for example, instead of saying "*she says that*" they said "*she say that*", "*there is*" instead of "*there are*", or "*how many*" instead of "*how much*". However, they ask for apologizing by saying "*sorry*" and directly corrected themselves using the correct tenses and words. There were students even didn't know the meaning of the words, and they made funny answers for the questions. Some answers were unclear unless they used their first language.

The next step that students needed to do were to explain, or after each short-video, they had to state results, justify procedures, and present arguments based on their point of view. Since they got some information while doing an evaluation, it wasn't that hard for them to do an explanation later on. However, the high number of students result still showed the average level of critical thinking skills. Despite the fact, while applying the explanation step, the researcher realized that the students more preferred memorizing the information than arguing with logical viewpoints.

The same results were obtained from students' inference skill. They couldn't make logically valid or justified conclusions. The same repetition appeared in their responses to the questions. The researcher also found that most students almost never asked questions. The reasons most probably the students were shy, or indeed didn't understand the topic, or they didn't have any interest in learning the English language, or they were afraid to make mistakes while asking questions. Nevertheless, they couldn't hide how happy they were when the classes become a competitive environment. Even though they couldn't debate with logical reasons, they still support their pairs to answer the questions well and accurate.

Overall results tell us that the students' critical thinking skills couldn't be improved significantly after having video treatment. Their critical thinking levels were still in fairly average categories. The students' critical thinking skills also presented in the form of percentages in the following chart;

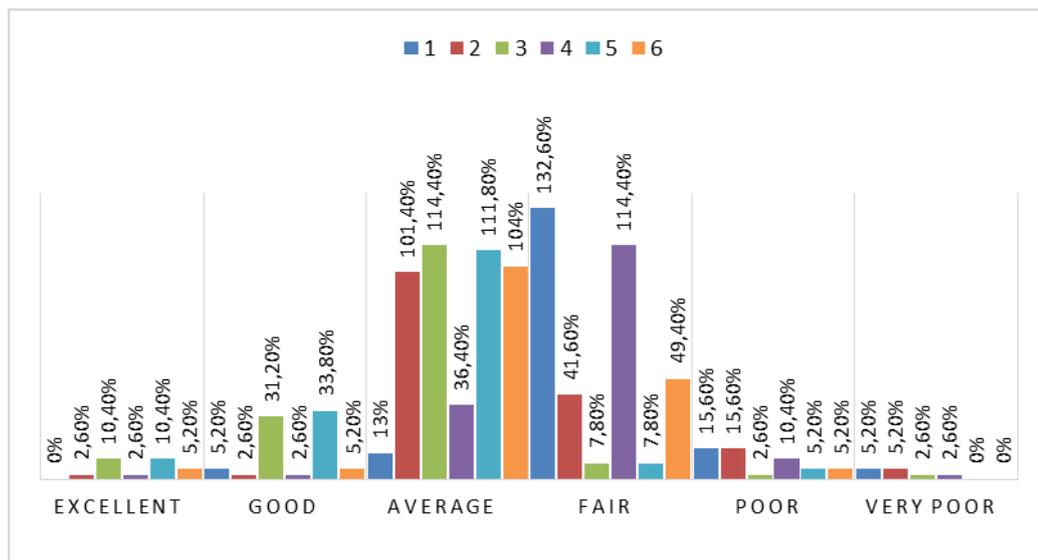


Fig. 1. The students' CT results in percentage

The findings are similar to the previous research which indicated a low level of students' critical thinking in EFL (Setyarini, 2019). Such low level to some extent can be affected by a lack of ideas, topic familiarity, lack of vocabularies to express the ideas, prior knowledge (Fadhillah, 2017 and Navaie, Saeedi & Khatami, 2018), or classrooms tradition which rely heavily on instructor, or the transfer of information directly from teacher to student. As mentioned by Piker & Foster (1996), those traditional ways of teaching, which involved repetition and memorization of previously taught materials did not lead the students to critical thinking.

In general, the results indicate the students' interpretation skills were fair with the score of 9 out of 20; analytical skill was 12; evaluation skill was 9 out of 20; self-regulation was in average criterion with the score of 5 out of 10 and in good level of explanatory's skill with the score 6 out of 10, while 12 for inferences (average level). It can be also seen in following graphic;

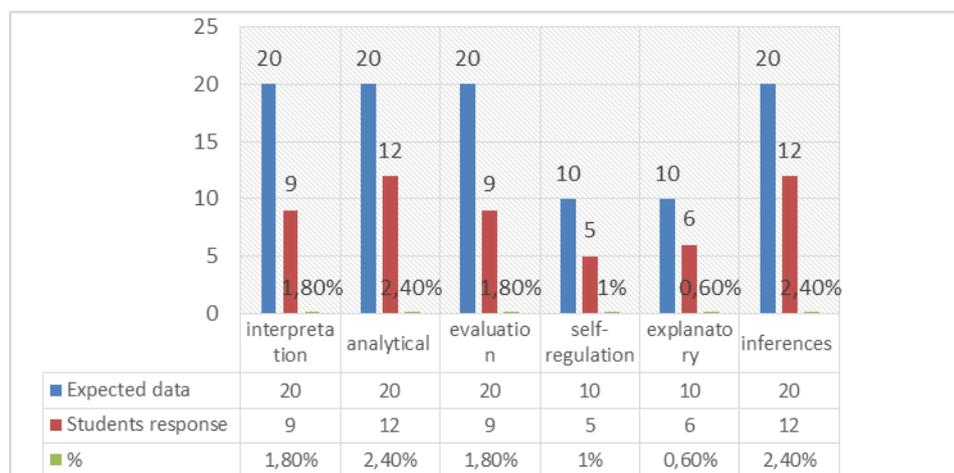


Fig. 2.130 Students' critical thinking skill results

The researcher does aware that in order to foster students' critical thinking, whole-class dialogue strategies shift the development of ideas to the student to create an opportunity for practice in analyzing and evaluating information. The teacher should begin the class discussion before students watch the video.

2. Students' 4C (communicative, collaborative, critical and creative thinking) skills

In order to cultivate students' critical thinking skills, integrating 4C skills and using technology in teaching and learning process might be real advantage (Dwyer, 2019). In this research the

researcher integrated 4C skills practically. Since the study mainly focus on cultivating critical thinking skills to the students, the 4C skill information of the students she collected generally. The students' results presented in the following table;

Table 4. Students' 4C skills

Objectives	Excellent	Good	Average	Fair	Poor	Very poor
Communicative skills			√			
Collaborative skills	√					
Critical thinking and Problem solving skills			√			
Creative and Innovative skills			√			

The table above presents the students' 4C ability in English subject. The results show that, majority of the students were in average level at communicative skills, critical thinking and problem solving skills, and creative and innovative skills. However, the students had excellent collaborative skills. They really support, assist, respect, love, listen and bring out the best of each other. They work, solve the problems, make decisions, and respond to the questions together with fellows. There wasn't any problem with their collaborative skills.

4. Conclusion

This descriptive study is aimed to cultivate learners' critical thinking skills especially by using short-videos. This research involved 130 Junior High School students (SMP Negeri 1 Sedayu, Yogyakarta) grade IX. The students were homogeny in term of age, economic, and social background as well as in English language score. Facione's critical thinking rubrics were used to point out the level of learners' critical thinking such as their interpretation, analysis, evaluation, inference, explanation, and self-regulation skill of short video. The researcher believed that using technology could help students to foster their critical-thinking skills. However, in this study the researcher came out with different results, she examined the students with several questions related to short-videos. The results of the students' showed that their critical thinking skills didn't improve significantly after having video treatment. Their critical thinking levels were still in fairly average categories. The average score of all item in pre-test critical thinking skills was at fair level with the score 9 out of 20. The results indicate the students' interpretation skills were fair with the score of 9 out of 20; analytical skill was 12; evaluation skill was 9 out of 20; self-regulation was in fair criterion with the score of 5 out of 10 and good level of explanatory's skill with the score 6 out of 10, while 12 for inferences. It can be concluded that the critical thinking skill of the students of Junior High School was still unsatisfactory as most of them can only reach a fair level. The use of video cannot improve all critical thinking skills. Therefore, some more practices on critical thinking are needed.

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