The Efforts to Improve Student’s Critical Thinking Skills Using a Contextual Approach in Learning Science in Class V MI Darussalam Lembu Students

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ABSTRACT
This study aims to describe efforts to improve student’s critical thinking skills using a contextual approach to science learning for grade V students at MI Darussalam Lembu. This study uses qualitative techniques using descriptive methods with triangulation analysis based on observation, interviews, and documentation. The results of this study show that teachers design situations and problems by using a contextual approach in learning science through situations and problems that are relevant to students’ daily lives. The supporting factors are the curriculum that supports the application of the contextual approach and the existence of a safe and comfortable learning environment that makes students ask questions, argue, and share their thoughts. While the inhibiting factor, limited effective time in learning. The role of teachers in efforts to improve critical thinking skills using a contextual approach in science learning is the teacher as a learning designer, as a facilitator, as a guide, and as a model of behavior in critical thinking.

Keywords: critical thinking; contextual approach; science learning.
INTRODUCTION

Education is the process of passing down knowledge, skills and values from one generation to another. This can be achieved through different methods, including teaching, training, experience and observation. Education holds a crucial role in the development of individuals, as it enables them to become productive members of society and contribute to the advancement of their nation (Ilhamdi et al., 2020). Education is a conscious and planned learning process to help learners develop their potential in spiritual, social, emotional, intellectual, and skill aspects (Ichsan, 2021).

Teachers have a critical role in developing students' scientific knowledge, skills and attitudes by designing and implementing learning activities (Daga, 2021). Teachers should create learning experiences that are connected to their students' real-life situations (Supramono, 2016). Science learning materials are information obtained through a systematic scientific process about the natural world (Dewi et al., 2019). One of the crucial factors that can determine the success of the learning process is the teacher (Yestiani & Zahwa, 2020). Science learning should be made more engaging and relevant to students' daily lives to enhance its meaningfulness to them (Mutinah, 2021).

The purpose of education is to enhance the cognitive abilities of students (Yotiani et al., 2016). Every learner should possess the ability to think critically, which is a crucial aspect of education (Hidayati et al., 2021). Developing thinking skills is crucial for future success, and education is the means to achieve this (Purbarani et al., 2018).

Critical thinking refers to the skill of assessing and analyzing information objectively and carefully, without any bias or preconceptions. It involves the use of reasoning, logic, and other cognitive tools to make informed decisions and judgments based on the available evidence (Sumarmo et al., 2012). Critical thinking is a logical and systematic process of comprehending and evaluating information to make reasonable decisions (Sulianto, 2008). Efficient science education should prioritize the cultivation of students' critical thinking.
abilities (Afrizon et al., 2012). Critical thinking skills are necessary for understanding scientific concepts, evaluating information objectively, and making informed decisions. Therefore, it is crucial to make systematic and planned efforts to enhance students’ critical thinking skills in science education (Yusnaldi et al., 2023).

Effective teaching involves using appropriate strategies. Three strategies exist for teaching critical thinking skills: (1) Building Category; (2) Finding Problem; dan (3) Enhancing the Environment (Arini et al., 2017). Teachers can help students understand and apply knowledge by connecting subject matter with real-world experiences (Hidayat, 2012). CTL learning is an approach that emphasizes critical thinking, problem-solving, and collaboration skills development for students (Marta et al., 2020). This approach comprises seven critical components: Constructivism, Questioning, Inquiry, Learning Community, Modeling, Reflection, and Authentic Assessment (Karim, 2017).

Contextualized learning requires students to connect scientific concepts with real-world events, encouraging critical and creative thinking (Baharuddin, 2017). Contextualized learning helps students to develop critical thinking, problem solving and collaboration skills, as students are required to be actively involved in the learning process (Gusdiantini et al., 2017).

Teachers have the power to create a learning environment that inspires their students to think critically. The teacher plays a pivotal role in the success of any learning strategy because they are responsible for ensuring that the strategy is implemented effectively and brings about the intended outcomes (Fitrah et al., 2022). The teacher's expertise in selecting the right learning model is crucial for developing students' critical thinking skills (Nuraida, 2019). Daily classroom learning should be designed to help students develop critical thinking skills. However, students cannot develop these skills on their own, it requires continuous effort and guidance from teachers to train them. (Nuraida, 2019).
Previous studies have found that the contextual approach can improve students' critical thinking skills. Contextual learning, the subject matter is presented in a context that is relevant to students' lives, so that students can understand and apply the knowledge they learn in their daily lives (Sulianto, 2008). Critical thinking ability is an important skill, therefore there is a need for innovation in learning models so that these skills can be developed optimally (Sunaryo & Fatimah, 2019). A contextualized learning model can assist students in developing critical thinking and problem-solving skills. (Zubaidah, 2017). Critical thinking skills can be observed through the processes carried out by students in solving problems, namely: problem identification, information analysis, problem solving, logical thinking, decision making, and drawing conclusions (Hendra, 2021).

This study aims to find empirical evidence supporting the effectiveness of contextual approaches in developing students' critical thinking skills. The results of this study are expected to be used to develop curriculum and science learning practices that focus on developing critical thinking skills. In addition, this research can also provide a deeper understanding of the relationship between the contextual approach and students' critical thinking skills, and the factors that influence its successful implementation. So from the explanation above, the researcher conducted a study on how efforts made by classroom teachers in improving students' critical thinking skills using a contextual approach in science learning? What are the supporting and inhibiting factors for teachers in improving students' critical thinking efforts? How is the role of the teacher in improving students' critical thinking skills with a contextual approach.

RESEARCH METHOD

The method in this research uses descriptive qualitative methods. Qualitative research methods are research methods used to understand phenomena that occur in a natural context (Sugiyono, 2017). In qualitative research, the researcher is the primary tool for collecting and analyzing data. To ensure the validity of the data, multiple data collection techniques are used. The process of data analysis is inductive, and it aims to develop theories
or concepts based on the collected data. The results of qualitative research are focused on understanding the meaning of the phenomenon being studied, rather than generalizing it. Descriptive research, on the other hand, aims to provide an overview or description of a specific phenomenon or variable, without making comparisons or relationships with other variables. (Sugiyono, 2013).

This study aims to determine efforts to improve students' critical thinking skills using a contextual approach in learning science in grade V students of MI Darussalam Lembu. Data collection techniques in this study used observation, interview and documentation techniques. Observation is a data collection method carried out by systematically observing and recording what happens in the field. Interview is a research method conducted by asking questions to respondents directly to obtain data relevant to the research. Documentation is a research method carried out by collecting and analysing data stored in documents to support research (Creswell, 2010; Fakhriyah, 2014). The location of this research is MI Darussalam Lembu in Kalimacan, Lembu village, Bancak sub-district, Semarang district, Central Java, 50182. In this study, researchers conducted observations for 3 months at MI Darussalam Lembu, conducted interviews with grade V students and homeroom teachers. As well as documentation of photographs of activities and homeroom documents.

DISCUSSION

The results of this study will answer three problem formulations, namely 1) How to improve students' critical thinking skills with a contextual approach, 2) What are the supporting and inhibiting factors for teachers in developing students' critical thinking skills in science learning, 3) What is the role of teachers in efforts to improve students' critical thinking skills in science learning.

a. Efforts to Improve Students' Critical Thinking Skills with a Contextual Approach

Critical thinking skills are essential for individuals to be able to solve problems effectively (Juhji & Suardi, 2018). Students as part of society need to be equipped with
good critical thinking skills, because these skills are needed to complete work and solve problems in life (Sulianto, 2008).

Critical thinking skills can be developed by getting used to asking questions. Questions can be asked silently or verbally, whether while reading, studying, or in everyday life (Redhana, 2019). These abilities can be optimised by providing subject matter that is relevant to real life, teaching the use of precise and effective language, training the use of logical structures of logical thinking, helping them test the truth of science, and providing opportunities to learn from various experiences. Intellectual independence alone is not enough. Courage, civility and faith are also needed for students to become moral and responsible adults in society (Juhji & Suardi, 2018).

Critical thinking is a process that involves six basic elements, namely focus, reason, conclusion, situation, clarity, and review (Purnomo & Suprayitno, 2013). These six basic elements can be described as stages in critical thinking, namely:

1. Focus: To think critically, we must first identify the problem at hand. The focal problem can be found in the conclusion of an argument.
2. Reason: Is the conclusion supported by relevant and accurate evidence
3. Inference: Whether the reasons given are strong enough to support the proposed conclusion
4. Situation: Matching with the actual situation
5. Clarity: Clarity of terms in the argument is important to avoid errors in interpretation of the conclusion
6. Overview: double-checking all the thinking processes we do, from the beginning to the end.

Thus, students need to have good critical thinking skills in order not to make mistakes in making decisions in their lives. Critical thinking is an important skill that students need to have in order to think rationally and logically in dealing with various
problems in their lives. Critical thinking is a systematic, rational, and objective thought process to evaluate information or arguments (Purnomo & Suprayitno, 2013).

According to interviews with class teachers who have made efforts to improve students’ critical thinking skills said "One of our efforts to improve science learning is to make learning more relevant to students’ daily lives. We present real situations and problems that students often face in their daily lives. We also ask questions that encourage students to think critically and find solutions through problem solving".

She continued, "I apply a contextualised approach in science learning to make learning more relevant to students’ daily lives. I use examples from their surrounding environment, such as natural events, local phenomena, and environmental problems that they encounter. This can help students to understand science concepts more easily because they can relate it to their daily experiences".

It can be concluded that critical thinking is a crucial skill that students must possess. The contextual approach can aid in enhancing students' critical thinking abilities by linking their learning with their day-to-day lives. Teachers can design relevant problems and situations that are pertinent to students' daily lives to encourage them to think critically.

b. Supporting and Hindering Factors in Efforts to Improve Students' Critical Thinking Skills in Science Learning

1. Supporting Factors

The 2013 curriculum is designed to equip students with critical thinking skills, one of which is through the application of a scientific approach. The 2013 curriculum has characteristics that support the development of critical thinking (Nuraida, 2019). These characteristics are: 1) Students become subjects in the learning process, not just objects; 2) Learning is carried out in an integrated
manner, interrelated subjects; 3) Learning is carried out with a scientific approach, which includes observation, question and answer, exploration, association, and communication activities; 4) Students are encouraged to think creatively by using open problems or questions; 5) Students are given the opportunity to access various learning sources, not only from the teacher; and 6) Students are trained to apply their knowledge in real life, not just understanding the material (Ritiauw & Salamor, 2018).

According to the results of interviews with class teachers, "Based on my experience, there are several factors that can support efforts to improve students' critical thinking skills. The first factor is the curriculum that supports the application of the contextual approach in science learning. The contextual approach encourages students to think more deeply and critically. The second factor is a supportive learning environment. Students should feel safe and comfortable to ask questions, argue and share their thoughts. A supportive environment can motivate students to actively participate in the learning process and improve critical thinking skills".

2. Inhibiting Factors

The lecture method that is often used by teachers makes students passive and less understanding of the material being taught. This is because the lecture method does not provide opportunities for students to ask questions or provide arguments about the learning material. Teachers who fail to develop innovations in teaching and learning because they have become accustomed to the traditional teaching methods they learnt during their school days (Purnomo & Suprayitno, 2013). In addition to teacher attitudes, crowded classroom conditions and too many students can also hinder the development of students' critical thinking. Crowded classroom conditions and too many students can make students feel
uncomfortable and not focus on learning. Especially if learning takes place during the day, hot and unconducive classroom conditions can further disrupt student concentration. Crowded classroom conditions that are difficult to control, as well as learning that takes place during the day, can hinder student concentration in receiving learning delivered by the teacher.

The results of the interview with the teacher are as follows "Efforts to improve students' critical thinking skills face several inhibiting factors, one of which is the limited learning time. The limited learning time makes it difficult for teachers to provide sufficient opportunities for students to think critically".

To overcome the inhibiting factors the teacher said "To improve students' critical thinking skills, effective organisation of time in learning is needed. Therefore, classroom teachers need to prioritise activities that encourage critical thinking skills and integrate students into daily learning."

c. The Teacher's Role in Efforts to Improve Students' Critical Thinking Skills with a Contextual Approach

The right questions can encourage students to think critically. One example of a question that can trigger students' critical thinking is an open question, which is a question that does not have only one correct answer. Open-ended questions allow students to explore their answers freely. (Sunaryo & Fatimah, 2019).

Teachers can improve students' critical thinking skills by: 1) creating an interactive learning atmosphere, so that students can collaborate and exchange ideas; 2) encouraging students to think critically, by asking questions that are not easy to answer; 3) guiding students to think reflectively, so that they can understand what they have learnt; and 4) helping students to apply their critical thinking skills in everyday life (Hendra, 2021).
Teachers have an important role in efforts to improve students’ critical thinking skills with a contextualised approach (Marta et al., 2020). Teachers can act as:

1. Teachers act as learning creators who create challenging situations or problems for students to think critically. Teachers should also choose contexts that are relevant to students’ lives so that they can see the connection between science learning and the real world.

2. Teachers act as learning facilitators who direct learning activities that encourage students to think critically. Teachers should also create a safe and comfortable environment to encourage students to ask questions.

3. The teacher acts as a mentor who assists students in developing their critical thinking skills. Teachers provide appropriate guidance and support to assist students in analysing information, identifying problems, and solving problems critically.

4. Teachers act as role models for critical thinking. Teachers demonstrate attitudes that support critical thinking, and teachers provide practical examples of applying critical thinking skills in everyday life.

The interview results show that teachers can create a learning environment conducive to the development of students' critical thinking skills. With the contextualised approach, teachers can help students to see the connection between learning materials and daily life. Guidance and support from teachers can help students to develop their critical thinking skills and analyse information critically.

CONCLUSIONS

Students’ critical thinking skills can be improved with a contextual approach in science learning. Teachers can design situations and problems that are relevant to students’ daily
lives to encourage them to think critically. Contextual approach in science learning can help students to understand learning materials better. Situations and problems that are relevant to students’ daily lives can make students more interested in learning the learning material. In addition, such situations and problems can help students to apply their critical thinking skills in everyday life. Supporting factors for the application of contextual approaches in science learning include: A supportive curriculum that contains learning materials relevant to students' daily lives and a safe and comfortable learning environment that encourages students to think critically, ask questions, argue, and share their thoughts. While the inhibiting factor is the limited time that is effective in learning. The role of teachers in efforts to improve students’ critical thinking skills using a contextual approach in science learning includes: teachers as learning designers, teachers as facilitators, teachers as mentors, and teachers as behavioural models in critical thinking.

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