ANALYSIS OF STUDENTS' CRITICAL THINKING ABILITYIN TEMPERATURE AND HEAT

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ANALYSIS OF STUDENTS' CRITICAL THINKING ABILITY IN TEMPERATURE AND HEAT

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Abstract

In learning, the ability to think critically must be trained and familiarized. The goal is for learners to understand the concepts of science and not just remember formulas. Critical thinking is the ability to think with high curiosity about information to gain insights. The method used in this study is a qualitative descriptive method that aims to describe the critical thinking ability of students. the results showed that the critical thinking ability of students is still low, so they still have to be trained and familiarized. To help improve students' critical thinking skills, they can use the right learning models and learning methods.

Keywords *: critical thinking ability, learning model, learning method*

Abstrak

Dalam pembelajaran, kemampuan berpikir kritis harus dilatih dan dibiasakan. Tujuannya adalah agar peserta didik memahami konsep ilmu dan tidak hanya mengingat rumus. Berpikir kritis merupakan kemampuan berpikir dengan rasa ingin tahu yang tinggi mengenai informasi untuk memperoleh wawasan. Metode yang digunakan dalam penelitian ini adalah metode deskriptif kualitatif yang bertujuan untuk mendeskripsikan kemampuan berpikir kritis peserta didik. hasil penelitian menunjukkan bahwa kemampuan berpikir kritis peserta didik masih rendah, sehingga masih harus dilatih dan dibiasakan. Untuk membantu meningkatkan kemampuan berpikir kritis peserta didik dapat dengan menggunakan model pembelajaran dan metode pembelajaran yang tepat.

Kata kunci : kemampuan berpikir kritis, model pembelajaran, metode pembelajaran

I. INTRODUCTION

The development of science and technology occurred very quickly in the 21st century. The 21st century demands quality human resources (Etistika Yuni Wijaya et al., 2016). 21st century learning is learning that combines literacy skills, cognitive, psychomotor, and affective skills as well as technological skills. Education is the main thing to grow knowledge with 21st century (Zubaidah, 2016). Characteristics of 21st century learning are *communication* , *collaboration* , *critical thinking* dan *creativity* (Arifin, 2017). Critical thinking is the ability to think rationally (logically) and reflexively focusing

on beliefs and decisions made. Critical thinking is the ability to think with high curiosity about information to gain insight (Yustyan et al., 2015). In learning, critical thinking skills must be trained and accustomed to. The goal is for students to understand the concept of science and not just remember formulas (Rositawati, 2019). In addition, critical thinking skills are useful for students in understanding topics by critically examining arguments in books, journals, discussion partners and educator arguments (Saputra, 2020). Critical thinking is a must-have for everyone to solve problems that occur in life (Nuryanti et al., 2018).

The 2013 curriculum is the government's effort to achieve quality human resources in mastering science and technology as outlined in state policy. (Wahyudin, 2018). The 2013 curriculum is designed for future growth and is prepared for generations who are ready to face the future (Kurniaman & Noviana, 2017). The 2013 curriculum focuses on encouraging students to make observations, ask questions, reason and communicate from things that have been obtained or known after learning at school. (Anwar, 2014).

In the world of education, one of the science subjects that has an important role is physics (Umami & Jatmiko, 2013). Physics is part of natural science which has an important role in life. The scientific approach is one way to help students think critically through learning activities (Nafi'ah et al., 2015). Concepts that are in accordance with the problems that are the core of learning, learning experiences and abilities in implementing scientific methods that aim to solve problems and develop critical thinking thinking (Fristadi & Bharata, 2015). The process of learning physics with students looking for and finding themselves makes students gain understanding and solve problems with a scientific attitude (Yolanda et al., 2019). By studying physics, students can find various phenomena that contain problems that need to be solved (Faisal et al., 2020). From the problems that must be solved, it can improve students' critical thinking skills (Hidayati et al., 2021).

II. METHOD

The research method is a scientific activity that is practical and theoretical, planned, structured, systematic, and goal-oriented (Semiawan, 2010). In this study, the type of research used is qualitative. Qualitative research is research that investigates the quality of relationships, activities, situations or various sources. Qualitative research can explain in detail the activities and situations that occur rather than comparing the effects of certain treatments or explaining people's attitudes and behavior, meaning that the emphasis is on

explanations (Fadli, 2021). The type of research conducted using descriptive qualitative methods is research in the form of literature studies, namely by collecting information or scientific works that have a relationship with literary literature reviews. (Ridwan et al., 2021).

III. RESULT AND DISCUSSION

The ability to think critically is still low because of a lack of training in learning activities, besides that students often only memorize without understanding the concept of the material (Nuryanti et al., 2018). The low critical thinking ability of students is a world problem (Rumapea, 2014). In the program for international student assessment (PISA) in 2015, Indonesia was ranked 62nd out of 72 participating countries. In SMA Bina Muda, students' critical thinking skills are still low.

Research conducted at Bina Muda High School found various problems in the process of physics learning activities. Based on the results of observing the learning process carried out in class, there were still some steps in the preliminary and closing activities that were not carried out. Such as apperception activities, motivation, reflection, and providing information. In addition, educators still use direct learning, so that learning activities only occur in one direction. Students only accept everything that is said by the teacher without looking for it themselves. This makes students' critical thinking skills still low. In addition, at the end of learning, educators do not measure students' critical thinking skills.

Physics learning should use the practicum method but there are still many educators who still use the lecture method (Rizqi et al., 2020). So that students are not involved and less active in learning physics. experimental activities are needed to complete In addition, experiments can be carried out to explain abstract physics material. Thus, the learning model used must increase the curiosity of students. From this curiosity, students will look for answers to things they do not know.

IV. CONCLUSION

Based on the results of observations, students' critical thinking skills on the subject of discussion of temperature and heat in class XI found that students' critical thinking abilities were in the low category. Even in the learning process, learning activities are less able to encourage students to be able to solve problems.

Solutions are offered to improve students' critical thinking skills by choosing a learning model that can make students have a role. So that students do not only receive material from the teacher, but students can find a material concept. In addition, there are still many science lessons that only convey

material, but are not given experimental or experimental activities. Learning activities should be given experimental activities to explain abstract concepts that are difficult to understand for students.

SUGGESTION

Selection of learning models and learning methods can help to improve students' critical thinking skills.

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