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## CULTURALLY RESPONSIVE TEACHING APPROACH TO IMPROVE THE QUESTIONING ABILITY OF JUNIOR HIGH SCHOOL STUDENTS THROUGH PBL

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### Abstract

The ability to express ideas, opinions, and knowledge is important in the learning process, especially in natural science learning. However, integrating Culturally Responsive Teaching with Problem-Based Learning has the potential to create a more relevant and interesting learning experience for students to boost students' communication skills. This research method uses a classroom action research design. The research sample was 33 students of class VII-H of SMP Negeri 5 Ponorogo, including 18 girls and 15 boys. Data were collected through classroom observations, interviews, and questionnaires to evaluate changes in students' interest in learning along with the application of the CRT approach. The results showed that Learners are slowly becoming more confident and enthusiastic about asking questions. On the other hand, the Culturally Responsive Teaching approach and Problem-Based Learning model had a positive impact on improving students' ability to ask questions, as evidenced by an increase in the number of students who asked questions by 24.2% of the class in cycle I and 54.5% in cycle II.

### Keywords:

*Culturally Responsive Teaching, Questioning Ability, Problem-Based Learning.*

## INTRODUCTION

It is clear that if students are not motivated to learn (Toba et al., 2019), this must be addressed immediately to improve the process and ability to ask questions. Education is an important aspect of the development of a country (Faoziyah, 2021). Motivation is essential for the learning process. Researchers have identified several problems in learning, such as unpleasant learning, inappropriate learning models and strategies, low learner ability, lack of motivation, and teacher inability to manage the class. Moreover, the Natural Science subject is often considered as one of the most complex and challenging learning for students. Therefore, students must develop abilities and skills to gain a substantial understanding, especially natural science learning emphasizes both skills and critical thinking as the main foundations for dealing with the material and conceptual challenges faced (Agustina et al., 2023).

Besides, students must master questioning skills as part of their scientific approach. Asking is a way of communicating ideas and thoughts through a question. A student's ability to question effectively is a clear indicator of their understanding of the learning provided by the teacher. Student-submitted questions reflect the level of cognitive abilities. As Boswell states in Prilanita, the type of cognitive question a person asks reflects their factual knowledge and understanding (Ika Pratiwi et al., 2019). Royani also mentioned that questioning skills are an integral part to improve the quality of the learning process and results, which is also part of the success in instructional management and classroom management (Technique, 2005). Teachers can identify obstacles to students' thinking processes by observing their questioning activities. Teachers can and should

improve the quality of learning by the characteristics and level of understanding of students (Susilowati, 2019).

Students must be able to ask questions. Questioning activities undoubtedly affect learners, prompting active reasoning responses and cognitive conflicts (Santoso et al., 2018). Students must be able to ask questions and express their curiosity about learning. This is an essential indicator of successful learning (Rahmah & Adnan, 2017). Students must ask questions to actively participate in learning mathematics (Sofwan, 2016). Teachers can use relevant questions to determine which mathematical concepts students have and have not grasped. Students must also possess the ability to ask questions because asking is the gateway to knowledge, which is a crucial element of learning. By asking questions, students can explore information, confirm what is already known, stimulate students to think, discuss, and be actively involved in learning (Sari et al., 2023). Questions force students to think deeply, helping them understand concepts and issues related to learning. They also demonstrate students' critical abilities by reflecting on their thoughts and emotions to find thoughtful solutions that can be applied for the common good and benefits (Deliani et al., 2019).

The importance of the ability to ask questions owned by students is contrary to the facts found in class VII-H SMP Negeri 5 Ponorogo. Based on interviews with the natural science teacher of class VII-H at SMPN 5 Ponorogo, it was clear that students in class VII-H can follow the learning well. Students can answer questions when their teacher asks them. However, when students were asked to ask questions, none of the students asked questions to the teacher. Furthermore, observations and interviews with several students in class VII-H at SMPN 5 Ponorogo revealed that students enjoy natural science lessons. However, when researchers asked students to ask questions about the material that had been studied, it was clear that students were still confused because they did not understand the material. Furthermore, students stated that they were still afraid and lacked confidence in asking questions (Arif, 2016).

The researcher overcomes these problems by designing innovative learning using the Problem-Based Learning (PBL) model for natural science material in the Ecology and Biodiversity chapter. This is done by integrating the Culturally Responsive Teaching (CRT) approach. Culture-based learning enables students to more readily attain learning objectives that are transformed through daily life experiences in the students' environment (Abdulrahim & Orosco, 2020). Culturally relevant and responsive learning in schools requires a socio-cultural approach (Donahue-Keegan et al., 2019). It is essential to connect knowledge and skills to learners' personal experiences, particularly in indigenous cultural settings (Abacioglu et al., 2020). Problem-based learning (PBL) is an effective method for students to discover problems from real-world events, collect data through self-directed strategies, and make informed decisions (Pratiwi & Setyaningtyas, 2020). This practice is an excellent way to boost students' motivation and enthusiasm. It's a model other teachers can and should use. The implementation of PBL presents several challenges, including the diverse characteristics of students, the lack of innovative learning media, and the lengthy implementation period (Pebriyanti et al., 2021).

The Culturally Responsive Teaching approach is based on the recognition of learners' cultural diversity and the integration of learners' cultural context in learning (Lasminawati et al., 2023). This approach can increase students' motivation, relevance, and activeness in science subjects. It does this by connecting learning materials with students' experiences, cultural backgrounds, and daily lives. Science learning is more interesting, relevant, and meaningful when the cultural context of students is taken into account. It also ignites their curiosity (Khalisah et al., 2023). Problem-Based Learning (PBL) and Culturally Responsive Teaching (CRT) are two effective approaches that can be used to enhance students' ability to ask questions and be more active in the

learning process. The CRT approach indisputably improves learners' questioning skills. It engages learners in content that is relevant to their culture and sparks curiosity about local cultures and issues. PBL and CRT together provide learners with the chance to apply their knowledge in a real-world context, which improves their understanding (Muhson, n.d.), PBL also encourages learners to engage in meaningful, learner-centered learning. The CRT approach provides learners with the opportunity to relate learning materials to their cultural experiences, which undoubtedly increases motivation and engagement in learning (Ernawati et al., 2024).

PBL learning involves real problems in the daily lives of students related to the learning objectives, this makes it easier for students to understand and solve the problems faced (Rahajeng Achyani et al., 2024). PBL and CRT approaches can and should be used together to improve students' questioning skills and activeness (Pratiwi & Setyaningtyas, 2020). Culturally Responsive Teaching (CRT) helps students to understand that positive culture leads to academic achievement and skills (Muñiz, 2019). Teachers' skills and abilities in implementing the culture around learners in learning content also directly influence the effectiveness of this Culturally Responsive Teaching approach (Cruz et al., 2020).

The Problem-Based Learning model provides an active, collaborative, and learner-centered learning framework. The CRT approach ensures that learning content and experiences are relevant to learners' cultural backgrounds. This will improve learners' engagement, their understanding, and the overall quality of their questioning skills (Sari et al., 2023). The objective of this research is to improve students' ability to ask questions in natural science classes. The application of the Culturally Responsive Teaching and Problem-Based Learning model is expected to improve students' understanding, mastery of concepts, and ability to ask questions in science subjects.

## **RESEARCH METHOD**

This research was conducted using the Collaborative Classroom Action Research method (Meidawati, 2019). The research was conducted at SMPN 5 Ponorogo with 33 students in class VII-H as the research subject, including 18 girls and 15 boys. This research was conducted in two stages: the pre-cycle, or the phase before the class, and the cycle, which was conducted after the class. The cycle included two phases: the first and second cycles. Each cycle has four stages: planning, action implementation, observation, and reflection. If one cycle does not show the desired change, then the next one is needed until the expected improvement is achieved. The data sources are primary and secondary. The primary data is in the form of direct observation of students' ability to ask questions. The secondary data is in the form of documents, photos, videos, lesson plans, and syllabi. The data analysis technique uses a comparative descriptive technique, which compares the questioning skills of students between cycle I and cycle II to determine the improvement of students' questioning skills.

## **RESULTS AND DISCUSSION**

### **RESULTS**

The results of the observation in cycle 1 clearly showed that the ability to ask students had not reached the standard criteria of 25% of the total students in the class. In fact, only 9 out of 33 students asked questions. In this cycle, only 8 students asked questions, which is still below the 25% standard. Overall, there was a clear improvement in the ability to ask questions compared to before (pre-cycle). However, this research was continued to the next cycle, namely cycle 2, to ensure, confirm, and strengthen the results of the improvement that occurred related to the ability

to ask students. Furthermore, the learning in Cycle 2 was modified based on feedback from the research observer.

Table 1. Students Questioning Ability

Cycle	Number of students who asked questions	Number of students who did not asked questions	Total number of students
Pre-Cycle	1 (0,03 %)	32 (99.7%)	33
Cycle 1	8 (24,2%)	25 (75,85)	33
Cycle 2	18 (54,5%)	15 (55,5%)	33

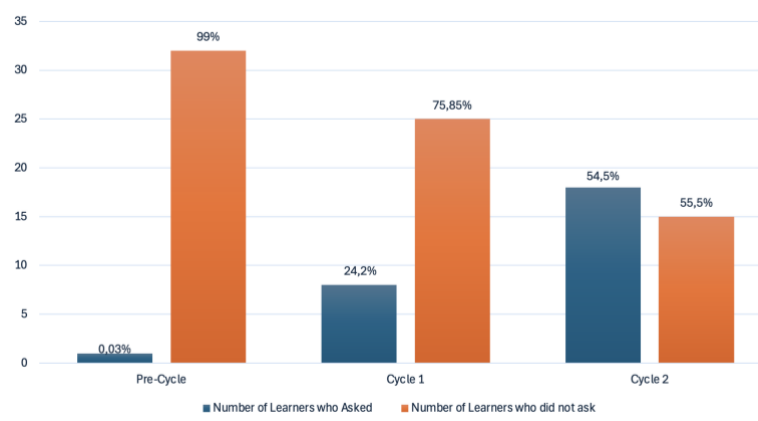


Figure 1. Improvement of students' questioning ability

The findings of the research or results based on the data above are described in the following explanation: The data on students' questioning skills from Cycle I clearly showed that the percentage of students who asked questions was still relatively low. It had not reached the expected completion threshold of 25% of the total number of students in the class, which was 24% (8 students who asked). The low achievement of questioning skills in Cycle I was influenced by several factors, including (1) the teaching of the Problem-Based Learning (PBL) model and CRT' was rigid with a lack of clear problems to be solved, which caused a lack of enthusiasm for students to ask; (2) students are not yet used to the strategies taught by the teacher through the Problem-Based Learning model, so they are not used to asking questions, both to the teacher and between students.

In Cycle 1, we observed the following: (1) Students demonstrated a remarkable grasp of the body's defence system, and (2) they exhibited a notable increase in engagement during the learning process. They actively participated in group discussions, shared ideas, and asked relevant questions. (3) Students showed greater interest in learning materials and higher intrinsic motivation to learn science. (4) The reflection results are based on direct observations by the observers. The model teacher is paying more attention to students who are still active in discussions. This is because in some groups it is still seen that only a few students dominate.

In Cycle 2, the number of students who asked questions increased. A total of 18 learners (55%) asked questions. The results clearly show that the ability to ask students has increased and met the predetermined threshold criteria of 25%. In Cycle 2, the following was observed: (1) Students' questioning ability is continuously improving. They can explain science concepts in more depth and apply them in the context of everyday life. (2) Students are more active in the learning process. They asked challenging questions, collaborated effectively, and actively participated in PBL activities. This class action research definitively shows that the use of CRT' and PBL learning approaches can improve students' ability to ask questions in science subjects. Integrating students'

cultural aspects into learning and involving them in authentic problem-solving will undoubtedly lead to greater engagement, motivation, and a deeper understanding of science materials.

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## **DISCUSSION**

This study employed direct observation as the primary method for measuring students' responses. The application of the Culturally Responsive Learning (CRT) approach and Problem-Based Learning (PBL) model in science learning has been shown to elicit the following responses from students: (1) Student activity: Students are more active in the learning process, collaborate in groups, ask questions, share opinions, and find solutions to the problems given. This involvement motivates them to learn science. (2) Concept understanding: PBL enables students to solve real-world problems, apply their science knowledge, and develop a deeper understanding. They are satisfied when they can use their knowledge to solve real-world problems. (3) Social skills: Group work allows students to develop essential social skills, including effective communication, teamwork, active listening, and appreciation for diversity. These skills support positive social interactions in and outside the classroom. (4) Relevance to everyday life: The Culturally Responsive Learning approach ensures students see the connection between science concepts and their lives and culture, making learning more relevant and meaningful.

The research findings are clear: CRT and PBL approaches effectively improve students' questioning abilities in science. Students are demonstrably more active in learning, linking science concepts to their daily lives, and developing critical thinking skills. The implementation of this approach significantly improved students' questioning abilities, resulting in a better understanding of science concepts and the ability to solve real-world problems. This improvement is clear evidence that the CRT and PBL approaches facilitate deeper understanding and applicability for students. This approach will undoubtedly influence students' attitudes towards learning, increasing active participation and motivation to learn. The combination of these approaches is essential for improving learners' questioning skills in science. It emphasizes the importance of learning that engages students, facilitates deep understanding, and relates learning to students' lives.

## **CONCLUSION**

The results of the application of Culturally Responsive Teaching (CRT) and Problem-Based Learning (PBL) in Class VII-H at SMPN 5 Ponorogo showed an increase in the ability of students to ask questions. This can be seen from the percentage of students who asked questions in the pre-cycle of 0.03% to 24.2% in cycle 1 and 54.5% in cycle 2. In other words, Culturally Responsive Teaching (CRT) and Problem-Based Learning (PBL) are effectively able to boost students' ability to ask questions.

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