



TEACHER'S STRATEGY TO IMPROVE STUDENTS' CRITICAL THINKING THROUGH PROBLEM BASED LEARNING (PBL) AT ELEMENTARY SCHOOL

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ABSTRACT

One of problems in mathematics education that remain unsolved is limited students' critical thinking skill. Some factors contributing to the problem are lack of interaction between teachers and students in learning and less various use of learning models due to the teacher's limited understanding of several learning models that can be used in class. This study aims to investigate the teacher's strategy to improve students' critical thinking skills through the Problem Based Learning (PBL) in fourth grade of SD Negeri 10 Setia Bakti, Aceh Jaya Regency. This study used a qualitative approach with a descriptive research type. This study involved one homeroom teacher and 10 students consisting of 4 male students and 6 female students. Data collection techniques using tests, observations, and interviews. Data were analyzed by Miles and Huberman consisting of data collection, data reduction, data display, and conclusion drawing or verification for the observation data and using the percentage for tests. The results showed that the use of the Problem Based Learning (PBL) was effective in improving students' critical thinking skills in fourth grade of SD Negeri 10 Setia Bakti, Aceh Jaya Regency. This is evident from the results of observations on teacher activity with the score of 14 (77.78%) which is the good category. The results of observations on student activity obtained a score of 15 with a percentage of 78.94% (good category). The results of the questionnaire revealed that half of the fourth-grade students at SD Negeri 10 Setia Bakti Aceh Jaya Regency have the ability to think critically, considered good criteria; The overall average value is 13.70 and the overall percentage is 69% (enough category). The strategy used by the teacher in improving students' critical thinking skills is using various learning strategies in order to encourage students' interest in learning. One of which is Problem Based Learning, including: student orientation on problems, organize learning activities, and guide individual and group investigations.

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INTRODUCTION

Learning takes place as a process that involves both teachers and students. Learning is considered effective to improve critical thinking skills if students are actively involved, both physically, mentally and socially in the learning process. Thus, the teacher's efforts in developing students' critical thinking skills are highly prominent as students' critical thinking skills determine the success of the learning carried out. In improving the quality of lessons and students' critical thinking skills, the teacher is one of the key factors that contribute to the quality of education. A teacher is given the responsibility to encourage and guide students to become active and have good critical thinking, and create appealing learning. The teacher also has the responsibility to notice what happens in the classroom to help students move forward.

According to Ariyana et al (2018:189), "The teacher's role in learning is expected to be a facilitator, mediator, and mentor to help the process of change in students. The role of the teacher is to prepare an effective learning process so that students are able to understand lessons better." One of the factors that influence students' lack of critical thinking skills is the use of learning models that are less interesting, and less varied, passive learning behavior, environmental conditions and learning atmosphere that are not conducive. According to Setyosari (2017: 25), "the effectiveness of learning can be observed and identified through the behaviors in the learning process carried out by a teacher and students or students in the classroom. Effective learning carried out in the classroom is also noticed in some contexts in where the learning process environment takes place".

Recently, the ability to think has not been well-developed. It is necessary to have a learning model to effectively develop and improve students' critical thinking skills. The learning approach focusing on posing on problems exemplifies effective learning as it helps students in understanding an event that has happened, seeing an event in more closely, therefore, students will remember the event. The use of learning models basically contributes to the success of the teaching and learning process. The success of learning in the classroom can be seen from the development of the ongoing learning process. Learning will run well if the teacher is able to manage the class, master the lessons, and use learning methods, learning models, learning media, and other learning resources that support the success of the learning process.

Based on the results of the researchers' initial observations and the results of interviews with fourth-grade teachers at SD Negeri 10 Setia Bakti, Aceh Jaya Regency, students' critical thinking skills were still insufficient. Students are considered to have critical thinking if they reach the indicator of critical thinking skills, namely 65%. This is due to the lack of interaction between the teacher and students during learning. Most of the learning is centered on the teacher and there is no attempt to give inducement questions to students to think critically about the material presented so that when the learning process takes place students only hear what only explained by the teacher. In addition, the use of learning models that are still less varied is due to the teacher's lack of understanding of several learning models that can be used in class.

According to Anugraheni (2018: 15), namely regarding the Analysis of Problem Based Learning Models in Improving Thinking Skills in Elementary Schools, states that the Problem Based Learning model is able to improve students' critical thinking. Likewise with Ariani's research (2020: 431) concerning the Effect of Problem Based Learning Learning Models on the Critical Thinking Ability of Elementary School Students in Science Content, stating that the Problem Based Learning learning model is effective for increasing students' critical thinking, because this model is problem-based so it can motivate students to solve the problem. As well as research conducted by Helmon (2018: 50) concerning the Effect of the Problem Based Learning Model on Students' Critical Thinking Ability, states that the PBL model has a positive and significant effect on the critical thinking skills of fourth grade students at SDN Serayu.

Based on the background of the problem and some previous research, the researcher felt interested in conducting a study with the aim of knowing the teacher's strategy in improving critical thinking skills through the Problem Based Learning (PBL) model in class IV SD Negeri 10 Setia Bakti, Aceh Jaya Regency.

METHOD

The current study used a qualitative approach with a descriptive research design. Descriptive qualitative research is more effective because this approach can be used to explore in-depth data regarding teacher strategies in improving critical thinking skills through the Problem Based Learning (PBL) model in Grade IV SD Negeri 10 Setia Bakti, Aceh Jaya District. The subjects in this study were 1 homeroom teacher and 10 students consisting of 4 students and 6 students in class IV SD Negeri 10 Setia Bakti, Aceh Jaya

Regency. Grade IV teachers and grade IV students are key informants in this study. Data collection techniques are important factors for the success of researchers. In this study, data collection techniques were carried out through tests, observations and interviews. Data processing techniques in this study used the Miles and Huberman techniques which included Data Collection, Data Reduction, Data Display, and Conclusion Drawing/Verification.

RESULT AND DISCUSSION

The results of the analysis of observational data on teacher activity in carrying out learning using the Problem Based Learning (PBL) model obtained an overall score of 14 with a percentage value of 77.78% (good category). So it can be concluded that the activities of the teacher (researcher) in carrying out learning using the Problem Based Learning (PBL) model in improving students' critical thinking skills are included in the good category. While the results of the analysis of student activity observation data in participating in learning using the Problem Based Learning (PBL) model obtained an overall score of 15 with a percentage value of 78.94% (good category). So it can be concluded that student activities in participating in learning using the Problem Based Learning (PBL) model in improving students' critical thinking skills are included in the good category.

Based on the results of observations of teacher activities and student activities in learning using the Problem Based Learning (PBL) model in class IV SD Negeri 10 Setia Bakti, Aceh Jaya Regency, it is made in the form of the following image.

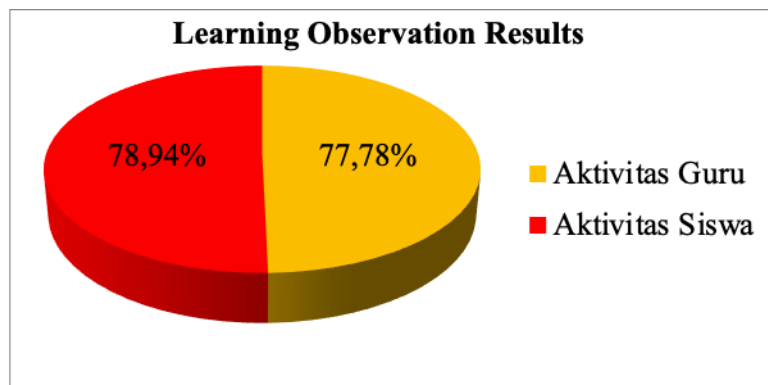


Figure 1. Observation Results of Teacher and Student Activities

Based on Figure 1. above, it shows that the activities of teachers and students during learning both look active, so it can be said that the results of observations of the activities carried out by teachers and students during learning have been carried out well. So the use of the Problem Based Learning (PBL) model in class IV SD Negeri 10 Setia Bakti Aceh Jaya Regency can both make teachers and students active in the teaching and learning process.

Data Analysis of Students' Critical Thinking Ability

The results of research data analysis regarding the critical thinking skills of fourth grade students at SD Negeri 10 Setia Bakti Aceh Jaya Regency in subtheme 1 learning I and My Goals can be seen in table 1 below:

Table 1. Students' Critical Thinking Ability Value

No	Student initial	L/P	Score	Percentage	Category
1	MA	L	17	85%	Sangat Baik
2	UR	P	11	55%	Cukup
3	AR	L	14	70%	Baik
4	SB	L	8	40%	Kurang
5	MR	P	16	80%	Baik
6	IM	P	15	75%	Baik
7	MO	L	15	75%	Baik
8	SN	P	16	80%	Baik
9	NZ	P	12	60%	Cukup
10	HM	P	13	65%	Cukup
Jumlah			137		
Rata-Rata			13,70	69%	Cukup

Source: Data processed in 2023

Based on the data in table 1 above, it shows that the score of students' critical thinking skills with the lowest score is 8 and the highest score is 17 with an overall average score of 13.70 and an overall percentage of 69% (sufficient category). From this data, the level of criteria for critical thinking skills for fourth grade students of SD Negeri 10 Setia Bakti Aceh Jaya Regency was made as shown in table 2. below.

Table 2. Criteria for Students' Critical Thinking Ability

No	Criteria	Student answers	Percent
1	Very good(A)	1	10%
2	Good (B)	5	50%
3	Enough (C)	3	30%
4	Not enough (D)	1	10%
5	Very less (E)	0	0%
Amount		10	100%

Source: Data processed in 2023

Based on the data in table 2 above, the criteria and percentage level of critical thinking ability of fourth grade students at SD Negeri 10 Setia Bakti Aceh Jaya Regency on very good criteria amounted to 1 student or 10% of respondents, good criteria amounted to 5 students or 50% of respondents, sufficient criteria amounted to 3 students or 30% of respondents and insufficient criteria amounted to 1 student or 10% of respondents, while for very lacking criteria there were no students or 0% of respondents. Based on the results of calculating the percentage, it can be concluded that in general half of the fourth grade students at SD Negeri 10 Setia Bakti Aceh Jaya Regency have the ability to think critically with good criteria.

Based on the analysis of interview data, information was obtained that the strategies carried out by teachers in class IV SDN 10 Setia Bakti, Aceh Jaya Regency in improving students' critical thinking skills in learning so far, namely through various learning strategies in order to provide enthusiasm for student learning, avoid boredom and One way of saturation in the teaching and learning process is through the application of the Problem Based Learning learning model with the steps of 1) student orientation to problems, 2) organizing learning activities, 3) guiding individual and group investigations. From these steps it can be understood that the steps taken by the teacher are appropriate and directed to the PBL model, as we know that the problem-based learning model is learning that uses various thinking abilities of students individually and in groups, as well as the real environment to solve problems so that they are meaningful, relevant, and contextual.

Based on this description, it can be seen that the teacher has made every effort to apply various strategies to improve students' critical thinking skills, one of which is through the use of various strategies in the teaching and learning process. In addition to this, teachers can also improve students' critical thinking skills by using learning methods that emphasize more active students in the learning process, this can help improve students' thinking skills through analysis. Such as the use of PBL models, cooperative learning methods, Group Investigation and others. So that it is hoped that it can present new nuances that are more interesting and memorable, so that learning can be felt more fun and not boring.

In applying the Problem Based Learning model the teacher also found several obstacles or difficulties during the learning process, the constraints were that not all students could accept learning easily, limited learning time and lack of facilities to carry out experimental activities in learning in accordance with PBL goals. So that the teacher suggests to other teachers in applying the Problem Based Learning model to improve students' critical thinking skills, teachers should prepare sufficient time and also supporting facilities to be able to carry out practical activities in solving problems in learning, in addition to improving students' critical thinking skills. teachers must always provide problem-based learning so that students will get used to thinking and can develop their critical thinking skills.

Research that has been carried out in class IV SD Negeri 10 Setia Bakti Aceh Jaya Regency is also supported by several previous studies as stated by Priawasana and Waris (2019:57) the PBL (Problem Based Learning) learning model is very effective and can improve critical thinking skills students on the subject of classification of living things class VII F at MTs. Ma'arif Ambulu for the 2017/2018 academic year with a total of 31 students. This can be seen from the students' critical thinking skills which have increased from the action stage of cycle I to the action stage of cycle II, namely by 67% rising to 81% while their classical completeness rose from 36% to 80%, so it is in the high category.

Furthermore, the results of research conducted by Yuniarsi and Sapri (2022: 136) The results of the study show that the application of the Problem Based Learning (PBL) learning model can improve critical thinking skills, learning achievement and the effectiveness of student learning outcomes in Indonesian language class VIII SMP Negeri 2 West Merapi. From the results of the t-test calculation the significance level is 95% of the degrees of freedom (db) = $n_1 + n_2 = 31 + 30 = 61 - 2 = 59$ seen in ttable, namely 2.002, tcount = 5.441. Because t count > t table, the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. This means that there are differences in student achievement with the application of the Problem Based Learning (PBL) learning model in increasing critical thinking and student achievement in Indonesian subjects.

Based on the results of the research and several previous studies that support this research, it can be stated that the application or use of the Problem Based Learning (PBL) learning model is very effective in improving students' critical thinking skills. Which of these in Problem Based Learning (PBL) requires careful preparation. Teachers must be able to choose the right topic for learning so that the Problem Based Learning (PBL) model can be applied. Good ability in implementation will give the effect of good students' critical thinking too. Teachers as learning implementers are required to have a complete understanding of learning concepts about learning models both in planning, implementing, and evaluating. Good understanding and ability in good implementation will produce good learning outputs.

CONCLUSION

The conclusion is that the use of the Problem Based Learning (PBL) learning model is very effective in improving the critical thinking skills of elementary school students. This is evidenced by the results of observations of teacher activities in carrying out learning using the Problem Based Learning (PBL) model obtaining an overall score of 14 with a percentage value of 77.78% (good category). While the results of observations of student activities obtained an overall score of 15 with a percentage value of 78.94% (good category).

The results of the questionnaire data analysis for students' critical thinking skills with the lowest score of 8 and the highest score of 17 with very good criteria amounted to 1 student or 10% of respondents, good criteria numbered 5 students or 50% of respondents, sufficient criteria numbered 3 students or 30% of respondents and less criteria amounted to 1 student or 10% of respondents. In general, half of the fourth grade students at SD Negeri 10 Setia Bakti, Aceh Jaya Regency have the ability to think critically with good criteria. While the overall average value is 13.70 and the overall percentage is 69% (enough category).

The strategy carried out by the teacher in improving students' critical thinking skills in learning is through various learning strategies in order to provide enthusiasm for student learning, avoid boredom and boredom in the teaching and learning process, one of which is through the application of the Problem Based Learning learning model with steps 1) orientation of students to problems, 2) organizing learning activities, 3) guiding individual and group investigations. In applying the Problem Based Learning model, the teacher also found several obstacles or difficulties during the learning process, the constraints were that not all students could accept learning easily, limited learning time and lack of facilities to carry out experimental activities in learning that were in line with PBL goals.

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