IMPLEMENTATION OF THE PROJECT-BASED LEARNING (PJBL) MODEL AS AN ATTEMPT TO IMPROVE THE THIRD-GRADE STUDENTS' CRITICAL THINKING SKILLS AT SDN 004 RANTAU KOPAR

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IMPLEMENTASI MODEL *PROJECT -BASED LEARNING* (PJBL) SEBAGAI UPAYA MENINGKATKAN KEMAMPUAN BERPIKIR KRITIS PADA SISWA KELAS III SDN 004 RANTAU KOPAR

ARTICLE HISTORY	ABSTRACT
	Abstract: Critical thinking is a skill in thinking by using the process of analyzing and evaluating a problem to produce the right decisions in solving the problem. PJBL is a learning model that applies problems as the first stage in acquiring new knowledge based on the experience of concrete life activities. Project Based Learning is a learning model that provides opportunities for teachers to manage learning in class by involving work projects. This paper describes the implementation of the project-based learning (PjBL) model in improving students' critical thinking skills. The research used was Classroom Action Research (CAR) using the Kemmis and Mc. Taggart research design models. The cycle consisted of planning, action, observation, and reflection. The research was conducted at SDN 004 Rantau Kopar. The research subjects involved 22 students of class III (Three). Teacher and students activities increased from cycle I to cycle II with an average teacher activity score of 69.92. Meanwhile, student activity average scores were 67.89, both of which increased in each cycle. Conversely, the results of critical thinking skills indicate a significant increase to a very good category, with an average value of 53, 70, and 85 for each cycle. After conducting the improvement phase in cycle II, the student test results reveal a significant increase to a very good category.
	Keywords: critical thinking skill, project-based learning (pjbl), elementary students
	Abstrak: Berpikir kritis adalah keterampilan dalam berpikir dengan menggunakan proses menganalisis dan mengevaluasi suatu masalah sehingga menghasilkan keputusan yang tepat dalam memecahkan masalah tersebut. Model Pembelajaran PJBL yaitu model pembelajaran yang menerapkan masalah menjadi langkah awal dalam memperoleh pengetahuan baru berlandaskan terhadap pengalaman aktivitas kehidupan yang konkrit. *Project Based Learning* merupakan model pembelajaran yang memberikan kesempatan kepada guru untuk mengelola pembelajaran di kelas dengan melibatkan kerja proyek. Artikel ini mendeskripsikan implementasi model *project-based learning* (PjBL) dalam meningkatkan kemampuan berpikir kritis siswa. Penelitian yang digunakan berupa Penelitian Tindakan Kelas (PTK) dengan menggunakan desain penelitian model Kemmis dan Mc. Taggart. Siklus meliputi *planning*, *action*, *observation*, dan *reflection*. Penelitian dilaksanakan di SDN 004 Rantau Kopar. Subjek penelitian melibatkan 22 siswa kelas III (Tiga). Aktivitas guru dan siswa mengalami peningkatan mulai dari siklus I hingga siklus II dengan nilai aktivitas guru rata-rata 69.92. Sedangkan nilai aktivitas siswa rata-rata 67.89, keduanya naik pada setiap siklusnya. Sedangkan pada hasil kemampuan berpikir kritis mengalami peningkatan yang cukup signifikan menjadi kategori sangat baik dengan nilai rata-rata 53, 70, dan 85 setiap siklusnya. Setelah diadakannya perbaikan pada siklus II, hasil tes siswa mengalami peningkatan yang signifikan menjadi kategori sangat baik.
	Kata Kunci: kemampuan berpikir kritis, project-based learning (pjbl), siswa sekolah dasar

INTRODUCTION

The elementary school education system in Indonesia currently applies the 2013 curriculum theme, learning activities are directed at empowering all the potential possessed by students so that they can have the competencies that are expected to make changes to a much better country in the future (Ariana, 2022). Learning is defined the conscious effort of the teacher to make sure that students who do not know become aware. Learning is a system or planned learning process, carried out and evaluated systematically, activity in learning is needed because in principle learning is doing to be able to change behavior as a result of learning (Kusuma & Aisyah, 2012). 2013 curriculum, a curriculum that emphasizes the learning process student-centered using active learning patterns seeking as well as reinforced with learning models that are appropriate to learning materials (Susanti, 2019).

Efforts to improve learning in the 2013 curriculum are using a scientific approach (Fuadah et al., 2016). According to Hosnan (2014) a scientific approach means a learning process that is carried out scientifically which forms the skills of observing, asking, trying, reasoning, and communicating. Implementation of learning using a scientific approach is expected to form students' ability to think critically. According to Greenstein, in the 21st century the critical thinking skills needed are critical thinking, creativity, and problem solving (Fitri et al., 2018). According to Unaenah (2019) Critical thinking is a skill in thinking by using the process of analyzing and evaluating a problem so as to produce the right decisions in solving the problem. Critical thinking is a person's ability to find information and solve a problem by asking himself to dig up information about the problem at hand (Christina & Kristin, 2016). Critical thinking skills possessed by students affect the learning outcomes obtained by students. What's more, learning mathematics for the basic education level emphasizes the formation of attitudes, reasoning or logic and skills (Wahyudi et al., 2012).

Based on the results of observations made in class III at SDN Rantau Kopar, in the learning process, when the teacher gave students the opportunity to ask questions about material that students did not understand, they were silent and tended to be passive. Then during the explanation and at the end of learning students were unable to make conclusions from the learning that was carried out. When asked for opinions by the teacher, students have not been able to give opinions. When the teacher gave questions the students were not able to answer these questions. But in reality the method given by the teacher did not work well. If viewed from the results of tests conducted at the beginning of the study the average value obtained was 53. This indicates that students' critical thinking skills are still low.

Learning should be able to develop students' self-potential both intelligence potential and talent possessed optimally so as to get high selling points (Shoimin, 2014). The learning model needs attention from various

parties (Gani, 2015). The learning strategy used in school will be directly related to the success of the student learning process. The use of learning models that are not in accordance with the circumstances of a school will have an impact on the success of students understanding the concepts being studied (Juleha, Khuzaemah, & Cahyani, 2014). A learning model that can shape students more active when the learning process is the *Inquiry model, Project Based Learning (PjBL), Cooperative Learning* , and *Problem Based Learning (PBL*). The learning model is a learning model that the government emphasizes to apply to curriculum 2013 (Mujiyono, 2018). The PJBL Learning Model is a model learning that applies the problem to be the first step in acquiring new knowledge based on the experience of concrete life activities (Fahrezi *et al*., 2020).

In line with the research of Aini, Ridianingsih, and Yunitasari (2022) states that the *Project Based Learning (PjBL)* learning model is effective on students' critical thinking skills with an average score of 91.6% in the very good category. In addition, the results of students' calculations show that there are differences in the ability to think creatively based on the description test assessment data between students who use the *Project Based Learning* learning model and students who use the direct learning model as evidenced from the calculation results using the normality test, homogeneity and t-test, namely the value sig. 0.002 (Nazua, & Aisyah, 2021). *Project Based Learning* is a learning model that provides opportunities for teachers to manage classroom learning by involving project work (Wena, 2011). Cord also explained that *Project Based Learning* is an innovative learning model that focuses on contextual learning through complex activities (Sutirman, 2013). *Project Based Learning (PjBL)* is a learning model that focuses on developing and applying theory to projects

undertaken by students (Afriani & Fitriani, 2016). The purpose of this study is to determine the increase in critical thinking skills using the *Project Based Learning (PjBL) learning model* .

RESEARCH METHODS

This type of research is Classroom Action Research (PTK) using the Kemmis and Mc model research design. Taggart iespiral from one to the other cycle Which next. Every cycle covers *planning* (plan), *action* (action), *observation* (observation), And *reflection* (reflection) (Arikunto, 2016). The subjects of this study were 22 students in class III consisting of 10 boys and 12 girls. This research was conducted in mid-December 2022 on eye lesson Mathematics . This research was conducted in 2 cycles, in each cycle will be carried out in 2 meetings. Data collection techniques using observation and interviews as well as Evaluation Tests. Data were analyzed quantitatively and presented in tabular form. kindly detail procedure study action This:

1. Stage Planning

On stage planning This activities includes; researcher And observer set alternative enhancement effectiveness learning, researcher together collaborator make planning teaching Which develop Skills intellectually, discussing developing learning Skills intellectual students inventory media learning, creating sheet observation, design evaluation tool.

2. Action Implementation Stage

the activity is carry out learning activities ashas planned.

3. Stage Observation

Activity Which held that is observing to implementationaction with use sheet observation Which been prepared.

4. Stage Reflection

Its activities include analysis data Which obtained through observation observation.

RESULTS AND DISCUSSION

This research was conducted starting from the pre cycle and ending in cycle II. Each cycle in the learning process observes teacher activities, student activities, and conducts tests to measure students' critical thinking skills using the PJBL learning model . This study aims to describe the learning process and the improvement of critical thinking skills in class III students at SDN 004 Rantau Kopar. The results of observations made on teacher and student activities using the PJBL learning model can be seen in table 1:

Table 1. Observation Results of Teacher and Student Activities

No	Aspect	Teacher Activity		Student Activity	
		Cycle I	Cycle II	Cycle I	Cycle II
1	Open Learning	72	97	70	94
2	Fundamental Question Determination Stage.	70	81	67	85
3	Project Planning Stage	65	94	71	89
4	Schedule Arrangement Stage	70	88	68	97
5	Monitoring Student and Project Progress Stage	75	88	61	87
6	Results Assessment Stage	65	88	61	82
7	Stages of Experience Evaluation	65	88	60	82
8	Close Lesson	75	100	70	99
	Rate-Rata	**69**	**92**	**67**	**89**

Based on table 1, it can be seen that the activities of teachers and students have increased from cycle I to cycle II with the application of the *Project Based Learning learning model.* In the first cycle the activities of teachers and students obtained a good category. However, this is still said to have not reached the predetermined achievement indicators. In cycle II the activities of teachers and students have increased to very good. With mark average teacher activity 69.92, meanwhile mark activity students average 67.89, both go on on every the cycle . This has increased so that in this cycle it has been achieved. Results students' critical thinking ability tests can be seen in table 2:

Table 2. Test Results for Students' Critical Thinking Ability in Pre-cycle, Cycle I, and Cycle II

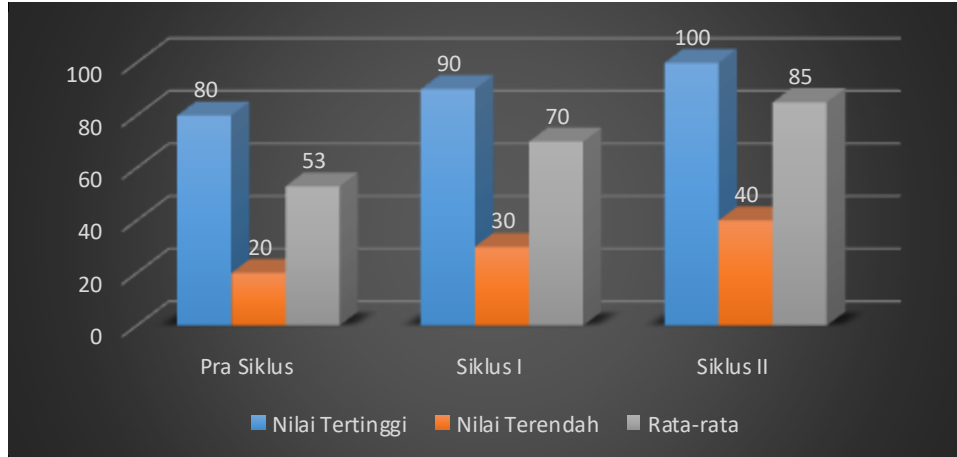|	The highest score	Lowest Value	Average
Pre Cycle	80	20	53
Cycle I	90	30	70
Cycle II	100	40	85

Figure 1. Test Results for Students' Critical Thinking Ability

Based on table 2 and chart on regarding student test results, it is known to have increased from the pre-cycle, cycle I, and cycle II. From the test results in the pre-cycle, it was in the less category, this has not yet reached the predetermined achievement indicators. In cycle I the results of the thinking skills test were still not achieved because they had not reached the predetermined achievement indicators because the categories obtained in this cycle were sufficient categories, so they still needed improvement in cycle II. After the improvement in cycle II, the student test results increased significantly to a very good category. With average score of 53, 70, and 85 on every the cycle . In accordance with the data analysis carried out by observing the activities of teachers and students in the learning process received an increase. This can be seen during the teacher's learning process in accordance with the learning steps that have been prepared according to the PjBL learning model.

Critical Thinking Ability

Creation in PjBL is important because it helps students to integrate and reconstruct knowledge, discover and improve professional skills, as well as increase student interest in the discipline and ability to work with others (Guo *et al* ., 2020). The formation of reason or logic and skills can be grown with learning that directs students to think critically. Critical thinking skills can be formed by teachers by providing learning that encourages students to think critically and requires effective learning strategies (Umuroh & Agoestanto, 2017). In this case the implementation of the project based learning (PJBL) model can enhance, emphasize and develop higher order thinking or critical thinking. One learning model that is more empowering to be active, creative and innovative as well as a critical mindset is the Project Based Learning (PJBL) learning model (Kristiyanto, 2020).

The superiority of PJBL is a) increasing learning motivation. This category is in accordance with the research findings and the use of the PJBL model motivates students to learn, because during the learning process it invites students to bring up the thoughts that students have. b) train the taste students' self-confidence according to the research results that when students convey his opinion was already full of confidence. c) train collaboration between

students, results This research also shows that students can collaborate with other students but will there are still students who have not been able to collaborate well. d) students become more active in learning activities, this research also shows that the PjBL model can make students play an active role in learning if this can be seen from the number of students who can answer questions asked by the teacher. e) train students to process resources information, when processing information students still have difficulty (Azizah *et al* ., 2019).

PjBL , PBL, and RBL are approach learning Where student participate active in the learning process , discuss And solve problem And question as well as Work in team (Mäkiö-Marusik et al, 2019). PjBL-based STEM learning can train students' skills in planning, organizing, negotiating, and creating agreement on the issues of the task to be done, who is responsible responsible for each task, and how the information will be collected and presented (Susanti *et al.* , 2021). *Project Based Learning* learning model able to increase self-confidence, motivation, tolerance, understanding of student material, as well cooperation (Natty *et al* ., 2019).

CONCLUSIONS AND RECOMMENDATIONS

The activities of teachers and students have increased from cycle I to cycle II with the application of the *Project Based Learning learning model.* In the first cycle the activities of teachers and students obtained a good category. However, this is still said to have not reached the predetermined achievement indicators. In cycle II the activities of teachers and students have increased to very good. With mark average teacher activity 69, 92, meanwhile mark activity students average 67.89, both go on on every the cycle . In cycle I the results of the thinking skills test were still not achieved because they had not

reached the predetermined achievement indicators because the categories obtained in this cycle were sufficient categories, so they still needed improvement in cycle II. After the improvement in cycle II, the student test results increased significantly to a very good category. With average score of 53, 70, and 85 on every the cycle. Teachers are expected to better prepare materials for the learning process because it takes quite a long time to design teaching materials that will be applied on the learning process class .

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