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Application of Problem-Based Learning Models to Improve Science Learning Outcomes in Class IV Students of SD Inpres Kinilow

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Abstract. Thepurposeofthis study was to improve the learning outcomes of the concept of style in fourth grade students of SD Inpres Kinilow through problem-based learning. This research was conducted at SD Inpres Kinilow, North Tomohon District, Tomohon City with a total of 9 students, the class IV teacher and the researcher acted as observers observing the ongoing learning process. Classroom action research was carried out in two cycles. Each cycle is carried out with four stages, namely planning, implementing actions, observing and reflecting. Data collection techniques in this study, using evaluation results test techniques, observation sheets (observation) questionnaires. To analyze existing data, that is done by calculating the percentage of learning completeness with an indicator of success shown if the number of students who show classical learning mastery reaches 75% with an average value of 75 for style concept material. The results of the research in cycle I showed that success indicators had not been achieved, namely the average value of student learning outcomes was 70%, students who had completed learning were 5 people with a mastery learning presentation of 55.55%. Whereas in cycle II there was an increase in learning outcomes, namely an average value of 82.78%, students who completed learning were 8 people with a percentage of masterylearningof 77.77%.
Keywords: problem basedlearning, learningachievement, science.

INTRODUCTION

Efforts to improve the quality of education in Indonesia never stop. Various new breakthroughs continue to be made by the government through the Indonesian Ministry of Education and Culture. According to Uno and Nudin (2011: 7) the learning method is the effort used by the teacher in carrying out its functions and is a tool to achieve learning goals. These efforts include school management, increasing educational staff resources, developing/writing teaching materials, and developing a new paradigm with teaching methodologies so that students can learn to get good results. One of the ways students need to "do it", is to describe something in a way themselves, showing examples, tryingtopracticeskills,

Planting the correct concept of material must start from school students in elementary schools. One branch of knowledge that is very important to teach children is science. According to Alo Liliweri (2022) science is a collection of knowledge and the process of developing knowledge itself, therefore science is one of the subjects in which students systematically collect information about the natural world accompanied by a system of values and attitudes in thelearningprocess.

However, in realitywhathappens in theclassroom in thesciencelearningprocessistheactivityofexplainingandstudentslistening. The

processoflearningscience in elementaryschoolsisonlydirectedatthestagesofrememberingandmemorizing, sothatlearningmethods are directedatachievingthegoalofstudentsbeingabletorememberandmemorizeonlythe material beingtaught. Itisstillveryrareforlearningactivitiestoprovideproblemstobesolvedjointlybystudents. Thissituationcausesstudentsto study scienceverylowandboring. The keytolearningScienceis a goodunderstandingofconcepts. The lackofunderstandingofthe material bystudentscauseslearningoutcomesthat are not optimal (Fauzia, 2018: 41).

If students are not motivated to learn science, of course it can be predicted that the true goals of the learning process will not be achieved. Students may have good grades, but science lessons are meaningless and are often abandoned after exams, even though the science concepts taught in elementary schools are matters related to everyday life.

Based on observations at Inpres Inpres Kinilow Elementary School that occur in the teaching and learning process, especially in learning science in class IV SD Inpres Kinilow with a total of 9 students, it has not been effective in the learning process because it shows that teachers tend to use a conventional learning system, conventional means agreement carried out by a group of people to express and communicate everything, in this case the agreement made between theteacherandstudents.

The teacher acts as the only provider of information, which results in students being placed as good listeners and making the learning atmosphere less active, Trianto (2007: 1) says that in conventional learning models the atmosphere in the class tends to be teacher centered so students become very passive because only seeing and listening, students are not taught a learning model that can understand how to learn about various materials, think and motivate themselves. This will affect student learning outcomes as seen from the KKM (Minimum Completeness Criteria) made by the school, namely 75, 6 students still have not achieved KKM scores and 3 students have achieved KKM scores in science subject theme 8 "The area where I live" sub-theme 1 "The environment where I live" therefore there is no increase in the quality of learning, especially science subjects. Because science subjects (Alo Liliweri, 2022), are collections of knowledge and the process of developing knowledge itself. That means, science must needtobedeveloped.

This is in line with the opinion (Munif, 2012) which states that the lecture method tends to be not optimal in improving student learning outcomes due to a lack of conceptual understanding ofthe material provided.

These problems require learning that can improve the quality of education, one of which is learning with a problem-based learning model. Because the problem-based learning model is the application of a learning model that provides a direct experience experienced by children. According to Komalasari (2013: 58-59) problem-based learning is a learning model that uses real-world problems as a context for students to learn about critical thinking and problem-solving skills, as well as to acquire knowledge and concepts that are the essence of the subject matter..

This is because in the learning system students must be the main object in teaching and learning activities and because students must play an active role in finding and finding answers to a questionable problem themselves, while the teacher acts as a facilitator and guide for students to learn.

Based on the descriptionabove, the authorchose the title "Application of Problem Based Learning Models to Improve Science Learning Outcomes in Class IV Students of SD InpresKinilow".

RESEARCH METHODS

This research was conducted at SD Inpres Kinilow in the second semester of the school year2022/2023. The research subjects were all students in class IV as many as 9 people, 2 boysand 7 girls.

The research conductedwasclassroom action research (PTK). According to the UNIMA Classroom Action Research Teacher Profession Education and Training Material book (Lumapow, et al: 2011) Classroom action research is an examination of activitiesthataredeliberatelyraised, and occur in a classthataims to changetowardsimprovement.

This research was conducted in two cycles, on the material concept of style by applying model problem-based learning. Data on student learning outcomes were collected by giving learning outcomes tests, namely questions of entry and Student Worksheets (LKS). After the data is collected, an individual and classical analysis of student learning outcomes is carried out as well as an analysis of the observation sheet data. The instruments used in this study were observation sheets, LKS, questions and LearningImplementationPlans (RPP).

RESULTS AND DISCUSSION

Research result

Test results in cycle I total scores obtained by students individually 630 or 70%, while classically there were 4 students who had not completed their learning outcomes 44.45% and those who completed 5 students 55.55% in the category of student learning completeness in individual learning and classical is 70% so that student learning completeness in individual learning and classical is if it reaches 70% so that student learning mastery cycle I has not been achieved.

Improved student learning outcomes individually can be seen in Table 1.

Table 1. Learning outcomes of cycle I and cyclesII individually

Cycle I		Cycle II	
Score	percentage	Score	percentage
630	70%	745	82.78%

Based on Table 1, it shows the total score obtained by students in cycle II individually 745 or 82.78%.

Increasing student learning outcomes classically can be seen in Table 2.

Table 2. Cycle learning outcomesII by way classic

Completeness		Cycle II
	Student	percentage
Q	7	77.77%
TT	2	22.22%

Based on Table 2, it shows the number of students who achieved complete learning outcomes in cycle II classically 7 students whocompletedor 77.77%.

The category of student completeness in individual and classical learning is up to 70%, with the KKM 70 which has been determined but there are still 2 students who have not reached the KKM because they are not precise in answering test questions, unable to answer questions given by the teacher and less active in learning, so that the efforts made, the teacherprovides remedial teaching.

Discussion

Classroom Action Research (CAR) includes 2 cycles consisting of cycle I and cycle II. Each cycle consists of 2 meetings and consists of several stages, namely

planning, action, observation and reflection. In cycle II, the stages carried out were an improvement from the previous cycle.

The discussion is based on the results of observations followed by reflection on each action cycle. From the results of observing the learningprocess in cycle I the student learningactivitiesweregood, but in givingresponses or givingexamples of teacherexplanations and thosewhowereable to answerquestionswere still few. In groupdiscussionsonlydominated by students whoareclever. Thus, thereneeds to be an effort to increase student activity, namely in learning the teacheralwaysmotivates students.

From the results of the evaluationanalysis of cycle I, therewere 5 students whocompletedtheir studies, while 4 students did not completethem. With a percentage of 55.55% and the class average value is 70% below the specifiedsuccessindicator. This is due to the lack of seriousness of students in working on questions. Students areafraid to ask about the material or concept given. In addition, the factor of the teacherwhodoes not fully understand the problem-basedlearning model, so that the teacherdoes not carry out the process flow in learningwhichconsists of 5 stages, namelyorienting students to problems, organizing students to learn, guidingindividual and groupinvestigations, developing and presentingworks, analyze and evaluate the problem-solvingprocessperfectly. For example, the teacherdoes not go around helping students or groupswhoarehavingdifficulties. From the implementation of cycle I, it turns out that the indicator of success has not yetbeenreached, so it is continued with implementation in cycle II so thatlearningoutcomesareincreasing.

Based on the analysis of the reflectionquestionnaire in cycle II students felt this problem-basedlearningwasfun and easy to follow. Theyarehappy with the presentation of the results of groupwork. The evaluation given to themwaseasy to follow and the problem solvingquestionsposedwereinteresting so thattheyencouraged and motivatedthem to move forward and continuelearning science.

In cycle II from the results of observing the learningprocess of student learningactivitiesboth students already have experience in participating in problem-basedlearning. There has been an increase in givingresponses or givingexamples of teacherexplanations and thosewhoareable to answerquestions. The formation of groups is carried out by takingintoaccount the distribution of students' abilities. In groupdiscussionstheyworktogether and share opinions on everyissue, so students whoaregood at patiently provide guidance to students whoare not good at it. As a result, students whoareless intelligent do not feel isolated, insteadbecome students whoareactive in discussions, askingquestionswhichare not understood so thatgroupdiscussionscantakeplacewell.

From the test results in cycle II the students wereenthusiastic in working on the questions given, theyworkedseriously and carefully in working on the questions, becausetheyunderstood and understood the materialprovided so that from the results of the evaluationanalysis, therewere 7 students who had completedlearning, whilethosewho did not completewere 2 students with a percentage of student learningcompleteness of 77.77% and an average class score of 82.78% this had reached the specifiedsuccessindicator, so it wassaidthatthis research wassuccessful.

Based on the results of the reflectionquestionnaire in cycle II students felt that problem-basedlearningwasfun and easy to follow. Theyareveryhappy with the learningthat is done with groupwork. Theyarehappy with the presentation of the results of groupwork. The evaluation given to themwaseasy to follow and the problem solvingquestions given encouraged and motivatedthem to continuelearningmathematics. Means there is a positive increase in cycle II.

From the discussionabove, it shows that the indicators of successareachieved, there is an increase in learningoutcomes and also the activeness of students in teaching and learningactivitiesusing a problem-basedlearning model on the subject of the concept of style in

class IV SD InpresKinilow. The results of thisstudyare in line with research conducted by Nuraini (2017), whichstatesthat the Problem Based Learning model is a learning model thatinvolves students in learningbothindividually and collaboratively and is able to solveeveryday problems through the learningprocess. Theseresultsreinforce the research conducted by Damayanti and Mintohari (2017), which shows that the Problem Based Learning model canimprove science student learningoutcomes for elementaryschool students. In line with research conducted by Lindayani (2017), which shows that the application of the Problem Based Learning model canimprove science learningoutcomes for students. Other research wasalsoconducted by Prasetyo (2018), whichshowedthat the Problem Based Learning model waseffective in improving students' natural science learningoutcomes.

CONCLUSION

Based on the results of the research conducted on the application of the Problem Based Learning (PBL) learning model to improve Science learning outcomes for fourth grade students at SD Inpres Kinilow, it was found that the learning outcomes of students in cycle II individually increased to 83.32%, while classical experienced an increase to 77.77% which is included in the good category and the results of student learning activities have increased in cycle II, namely 83.32% in theverygoodcategory.

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