

ENHANCING STUDENTS' CRITICAL THINKING WITH PROJECT-BASED LEARNING IN ELEMENTARY SCHOOL

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Abstract: This study aims to improve students' critical thinking skills by implementing the project-based learning model in the science subject in class IV SDN 47 Ampenan. The type of research used is classroom action research (CAR), which consists of II cycles, each consisting of 2 meetings, which goes through four stages: planning, implementation, observation, and reflection. The research methods used are observation, testing, and documentation. The data analysis uses a quantitative approach to calculate the average value and qualitative to analyze the results of observations of teacher and student activities during the learning process. The results of this study indicate that implementing the project-based learning Model can improve students' critical thinking skills in the subject of science in class IV SDN 47 Ampenan. This is evidenced by the results of the critical thinking ability evaluation test, observations of teacher activities, and the results of observations of student activities. The increase in students' critical thinking skills from 69.25% (cycle I) to 90.2% (cycle II) is 20.95%. Meanwhile, the results of teacher activity observations increased from cycle I to cycle II by 86.67% to 100%, or an increase of 13.33%. Likewise, the results of student activity observations increased from cycle I to cycle II by 78.3% to 93.3%, an increase of 15%.

Keywords: Project-Based Learning Model, Critical Thinking, Science Learning, Elementary School

INTRODUCTION

21st-century learning requires schools to modify the form of learning approaches from teacher-centered to student-centered. This is in line with the needs of the development of the era to prepare the future generation, who can think critically and creatively, solve problems, communicate, and collaborate. (Rini, 2022). The achievement of 21st-century learning is supported by the skills of educators in preparing learning plans that combine 4C activities so that 4C skills can be applied in learning. (Alif Agung, 2022). Competencies in the realm of 21st century education that must be prioritized in today's world of education can be said to depend on one primary ability, namely critical thinking, with the application of critical thinking students can identify the shortcomings of an object and then try to fix it, which means that in this concept he has combined creativity, problem solving and innovation skills at once. (Amar Halim, 2022).

Critical thinking is a classification of higher-order thinking skill (HOTS), which refers to memorizing facts or concepts and students' ability to connect facts and concepts. Students must be accustomed to understanding, monitoring, grouping, manipulating, making more creative innovations, and applying them to find optimal solutions to various new

problems. Thus, students can finally make decisions using scientific and logical reasons. (Indramayu and Asep, 2020). The reality in class IV of SDN 47 Ampenan is still far from ideal. Students' analytical thinking skills in the subject of science are still low. From the results of interviews with class IV teachers on September 30, 2024, information was obtained that most class IV students had difficulty formulating and solving problems and were still dependent on ready-made answers. Of the 32 students, only 3 were able to give their opinions, and even then, it was still less than optimal. For the average Natural and Social Sciences scores, the average is low; if given a normative score, many did not complete their scores.

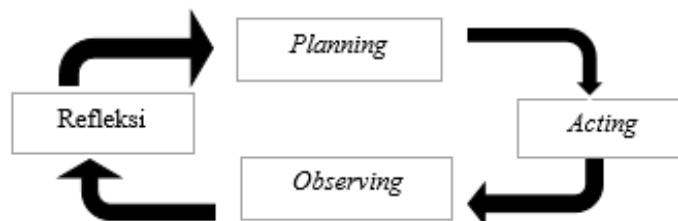
Based on the observations at SDN 47 Ampenan on September 30, 2024, information was obtained that most fourth-grade students had difficulty solving problems, finding solutions, and drawing conclusions. In addition, students still have difficulty in connecting the concept of science and natural sciences with everyday life. These results are also supported by the learning outcomes of fourth-grade students at SDN 47 Ampenan. The low critical thinking skills of students in science and natural sciences learning are caused by less varied learning methods; Teachers have not been optimal in implementing various learning models that vary in the learning process, so students feel bored, less active, and lose interest in learning. As a result, students have difficulty understanding the learning material.

The above conditions, if left unchecked, will have a negative impact on the critical thinking skills of fourth grade students at SDN 47 Ampenan. In fact, the ability to think logically is one of the important competencies that students need to have to express opinions, draw conclusions, and face challenges in this increasingly complex era. One alternative solution to the above problem is the application of the Project Based Learning model. The application of the Project Based Learning Model is a learning model that provides opportunities for educators to guide classroom learning with project work. (Asni Widiastuti, 2020). This method trains students to think critically, collaborate, and find solutions to various problems. They are invited to explore information, evaluate, and present their work innovatively. Based on the explanation above, the researcher examined the application of the project-based learning model to improve students' critical thinking skills in the science subject in fourth grade at SDN 47 Ampenan.

METHOD

This study uses the type of classroom action research (CAR). Classroom Action Research is a teacher's effort to improve the teaching and learning process in the classroom by trying various new methods and analyzing the results (Sutoyo, 2020). CAR is used to develop the quality of teacher learning in the classroom and improve their understanding of elements related to students and the school environment. The purpose of CAR is closely related to the desire of teachers who want to develop or improve learning practices in the classroom. (Risky Hasina Maryuningsih, 2020).

This study uses Kurt Lewin's research model, which consists of four steps: (1) Planning, (2) Action, (3) Observation, and (4) Reflection. The location of the research was at SDN 47 Ampenan. The target of the research was 32 fourth-grade students. This research was conducted in two cycles. The types of instruments in this study include observation, tests and documentation. Data analysis of this study includes teacher activities, student activities, and critical thinking skills.



DISCUSSION

Learning using the project-based learning model has been proven effective in improving students' critical and collaborative thinking skills. In learning, students are actively involved in completing projects that are relevant to real life. The more students are involved in the learning process, the more effective the learning outcomes achieved. Based on the results of data analysis, the critical thinking skills of students carried out in cycle I to cycle II experienced a significant increase. In cycle I, no students were in the very critical criteria, while in cycle II, 7 students (21.88%) were in the very critical criteria. The number of students in the critical criteria increased from 6 (18.75%) to 22 (68.75%). Conversely, students with relatively critical and less critical criteria decreased drastically. Students' average critical thinking skills increased from 69.25% in cycle I to 90.2% in cycle II, with an increase of 20.95%. The highest score obtained by students in cycle I was 80, and the lowest score was 45, while in cycle II, the highest score obtained by students was 95, and the lowest score was 60. The project-based learning model can improve students' critical thinking skills in class IV SDN 47 Ampenan. Based on the results of observations, data obtained on students' critical thinking skills with the project-based learning model increased at each meeting by correcting the shortcomings that occurred in the previous meeting. The increase in student learning activities is caused by many factors, including the project-based learning model, which guides students to be more active in designing, developing, and completing projects that are relevant to real life. The existence of collaborative activities in groups trains students to work together, share ideas, and play an active role in the learning process. With collaboration, students become more confident in expressing opinions, solving problems, and providing and receiving feedback from friends and teachers.

The project-based learning model also affects students' attitudes, especially when they complete projects. Students are also required to collect and manage information independently or with their groups to complete the given project. This activity helps shape attitudes of responsibility, discipline, and openness. In addition, critical and creative thinking skills have also been developed through the application of this project-based learning model.

The results of this study are reinforced by the results of research from Farahdhiva Qutrunnda Fajrin et al., who said that the results of students' critical thinking ability tests in the application of the project-based learning model in the fifth grade of elementary school science subjects obtained results in the good category. So in this study, the project-based learning model can be used to improve students' critical thinking skills (Farahdhiva et al., 2024). This was further strengthened by Nida Winarti et al., who said that teacher and student activities increased with a very good category. The results of the evaluation test were higher, with very good criteria. So the project-based learning model can be used to improve students' critical thinking skills. By using the project-based learning model, students can solve the problems they face and are able to work together in solving problems.

One of the teacher's strategies in improving students' critical thinking skills is to apply the project-based learning model. In this model, students are directly involved in the discovery process through projects designed in LKPD. This development can be seen when students are given real challenges or problems they must solve. In this process, students observe objects, analyze information, test concepts, and draw conclusions based on the evidence found. Thus, students not only memorize or think about information, but also develop critical thinking skills of exploration, investigation, and reflection. (Nida Winarti et al., 2022)

In addition to comparative data on improving students' critical thinking skills, teacher and student activities in science learning by implementing the project-based learning model have increased and changed. Where students are the subject or center of learning. Students are actively involved during the learning process and can complete projects collaboratively. The influence of the project-based learning model on critical thinking skills is in the steps of implementing the project-based learning model which include; determining basic questions that are relevant to the material, designing projects, planning project implementation schedules, monitoring project progress, assessing project results, and evaluating project creation experiences, which emphasize real problem solving and a deeper learning process, thus encouraging students to think critically and analytically in finding solutions. (Anim et al., 2024)

CONCLUSION

Based on the results of the research and discussion above, it can be concluded that the application of the project-based learning model can improve students' critical thinking skills in the subject of science in class IV of SDN 47 Ampenan. This is evidenced by the results of the critical thinking ability evaluation test, observation of teacher activities, and observation of student activities in cycle II. The increase in students' critical thinking skills from 69.25% (cycle I) to 90.2% (cycle II), or an increase of 20.95%. Meanwhile, the results of teacher activity observations increased from cycle I to cycle II by 86.67% to 100%, which is very good and increased by 13.33%. Likewise, the results of student activity observations increased from cycle I to cycle II by 78.3% to 93.3%, which is very active, increased by 15%. Based on the data analysis, the study was declared successful because it had achieved a success indicator of 80%, with teacher activities being very good and student activities being very active. So it can be concluded that by implementing the project-based learning model, critical thinking skills in the science subject in class IV of SDN 47 Ampenan can be improved.

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