



IMPLEMENTATION OF PROBLEM BASED LEARNING MODEL TO IMPROVE CRITICAL THINKING SKILLS IN GRADE VI STUDENTS OF SD NEGERI SUKOWIRYO 01

Rohmah Nurul Faiqoh¹, Elly Sukmanasa²

^{1,2}Master's Study Program in Elementary Education, Universitas Terbuka
Corresponding author: faiq22052001@gmail.com, sukmanasaelly@gmail.com

Abstract

This study aims to describe the implementation of the Problem Based Learning (PBL) learning model in improving the critical thinking skills of grade VI students of SD Negeri Sukowiryo 01, as well as identifying its supporting and inhibiting factors. This study used a descriptive qualitative approach with data collection techniques in the form of observations, interviews, and documentation. The results of the study show that the application of PBL improves students' critical thinking skills, which is characterized by an increased ability to identify problems, analyze information, express opinions, and draw logical conclusions. In addition, students become more active and involved in the learning process. Supporting factors include the role of the teacher as a facilitator, the use of contextual problems, group cooperation, and the availability of learning resources. The inhibiting factors include differences in student abilities, time limitations, and low confidence among some students. Thus, PBL is effectively used to develop the critical thinking skills of elementary school students.

Keywords: *Problem Based Learning, Critical Thinking Skills, Grade VI Students*

A. Introduction

In the 21st century, education faces the demand to develop four skills known as the 4Cs: communication, collaboration, critical thinking, and creativity (Dewi et al., 2023). 21st century skills in the current learning process have been observed from the changes in the curriculum that are implemented in schools by enacting driving school programs. In the application of the driving school program, teachers are required to be driving teachers who can stimulate students, one of which is to think critically (Dewi et al., 2023).



Critical thinking skills are among the highest-level thinking skills (Adnyana 2012). Critical thinking is a more organized and thorough process of thinking about something using the available information. According to Juliyantika and Batubara (2022), critical thinking is the ability to think that involves knowledge and problem solving, which encourages a person to think according to their abilities and develop their thinking skills. According to Haryanti and Febriyanto (2017), critical thinking is a skill that students must possess to respond to reflective, productive, and evaluative evidence from an event. Thus, critical thinking can be considered a higher and deeper thinking ability that involves the process of problem-solving to respond to information from an event and apply it to the formation of new knowledge.

Critical thinking is a 21st century learning skill. Educational innovations in the 21st century aim to teach skills that include critical thinking skills (Manassero-Mas et al., 2020). The results of Sari et al.'s research show that students' critical thinking skills are very important because students are required to be more responsive in solving problems and solving problems contained in learning. Meanwhile, the results of the research by Shanti et al. (2018) say that the importance of critical thinking for students is so that students are able to be rational and choose the best alternative choice for them. This means that in the process of solving problems, there needs to be reasonable and reflective consideration so that the right decisions and solutions are obtained to solve the problems faced by the students.

Based on the results of the initial observations carried out in grade VI of SD Negeri Sukowiryo 01, it was found that the learning process was still dominated by routine lecture and assignment methods. Teachers often explain the material in one direction, while students tend to be passive and listen without engaging in the deep thought process. When asked a question, most students are only able to answer at the level of remembering and understanding, but have difficulty when asked to analyze, give reasons, or solve a problem related to their daily life.

In addition, in group discussion activities, it is still seen that only a few students are active, while others tend to rely on more dominant friends. Students also have difficulty expressing opinions, formulating arguments, and drawing logical conclusions. This shows that students' critical thinking skills have not been optimally developed. The results of the learning evaluation also show that most students have not achieved indicators of critical thinking skills, such as identifying problems, analyzing information, and determining appropriate solutions.

This condition shows that the learning that takes place has not fully provided opportunities for students to experience the process of finding and solving problems independently. Therefore, a learning model is needed that can encourage active student

involvement, stimulate high-level thinking skills, and provide a meaningful learning experience. One of the models that can be applied is *problem-based learning* (PBL).

Problem-based learning (PBL) is a learning model in which students are faced with a real problem that has been experienced by students (Adrianti et al., 2021). *Problem Based Learning* is a learning model that centers on cooperative actions between group members who are given examples of cases in the community, and students are required to be able to provide solutions to problems presented by educators (Novelni & Sukma, 2025). This model is included in innovative learning strategies designed to create an active-learning environment. In its application, PBL involves students in the process of systematically solving problems by following the stages of the scientific method, thereby encouraging them to think critically and independently (Ariani, 2020). The application of the PBL model has great potential for developing various student skills. Through this learning design, students can think critically, get used to discipline, and improve their group communication skills. In addition, PBL instills the value of tolerance and responsibility and encourages motivation and active participation of students in the learning process (Ariani, 2020).

Jamhari et al. (2020) support this finding, stating that students' critical thinking skills are biased toward improvement through learning with the PBL model. Miranti (2023) also states that the PBL model can be an alternative learning strategy that supports the development of students' critical thinking skills. In addition, Faturrahman et al. (2023) revealed that the consistent application of the PBL model can improve students' critical thinking skills. As explained above, the researcher is interested in conducting research to describe the application of the PBL model to improve the critical thinking skills of grade VI students at SD Negeri Sukowiryo 01.

Based on this description, this study focuses on examining in depth how the implementation of the *Problem Based Learning* learning model improves the critical thinking skills of grade VI students of SD Negeri Sukowiryo 01. In addition, this study also aims to describe how students' critical thinking skills are developed during the application of *the Problem Based Learning* model in the classroom. In addition, this study identifies various factors that are supporters and inhibitors in the implementation of *the Problem Based Learning* learning model in an effort to improve students' critical thinking skills.

B. Methods

This research uses a descriptive qualitative approach, which is an approach to a certain behavior, phenomenon, event, problem, or circumstance that is the object of investigation; the results are in the form of a description of meaningful sentences that explain a certain understanding (Leksono, 2013). In this case, the use of a qualitative descriptive approach aims to deeply understand the implementation of *the Problem*

Based Learning (PBL) model in improving students' critical thinking skills. The research site was SD Negeri Sukowiryo 01 for grade VI students. Data collection techniques included interviews, observations, and documentation studies.

Interviews are a data collection technique that involves direct interaction between researchers and participants. Qualitative interviews aim to gain an in-depth understanding of an individual's experiences, views, and perspectives regarding the phenomenon being studied. Interviews can be conducted in a structured, semi-structured, or unstructured manner, depending on the level of the predetermined framework (Creswell, 2014). Interviews were conducted with grade VI teachers and students as the main informants to obtain information related to the implementation of learning using PBL.

Observation is a data collection technique that involves the direct observation of participants and the context involved in the research phenomenon. Qualitative observations can be made in real-world situations or in environments specifically designed for research. Observation provides researchers with the opportunity to observe social interactions, behaviors, and contexts relevant to the phenomenon being studied (Bogdan & Biklen, 2017). Observations were made to see the learning process in class VI when using the PBL model.

Documentation involves collecting data from documents, archives, or other written materials related to the research phenomenon. The documents used include notes, reports, letters, books, and other official documents. Documentation studies provide insights into the historical contexts, policies, events, and developments relevant to the phenomenon under study (Creswell, 2014). Documentation studies were used to analyze related documents, such as learning implementation plans (RPP), learning activity reports, and student learning outcome records.

The data analysis technique used in this study is qualitative data analysis, which includes three stages: data reduction, data presentation, and conclusion drawing. The data obtained from the interviews and observations were reduced to filter relevant information and then presented in the form of a descriptive narrative. Next, the researcher draws conclusions based on the patterns and findings that emerge from the data. The validity of the data was checked using source triangulation techniques and methods to ensure the validity of the research results (Creswell 2018). This approach allows researchers to obtain a comprehensive picture of the implementation of PBL and its influence on students' critical thinking skills.

C. Results and Discussion

1. Implementation of *the Problem Based Learning Model* in Improving the Critical Thinking Ability of Grade VI Students of SD Negeri Sukowiryo 01

The Problem-Based Learning (PBL) learning model is implemented in grade VI of SD Negeri Sukowiryo 01 through several key phases, such as problem orientation, student organization, independent and group investigations, development and presentation of work results, and analysis and evaluation of the problem-solving process. Observations show that, instead of acting as facilitators, teachers provide contextual challenges to students that they can use in their daily lives. According to Howard S. Barrows (1986), PBL is a student-centered learning paradigm that uses the presentation of real-world events as a catalyst for learning.

Observational data showed that students began to actively participate in group discussions during the learning process after the intervention. To solve a given problem, students not only receive knowledge but also actively search for, process, and analyze it. Interviews with classroom teachers support this, stating that the use of PBL increases students' confidence in voicing their views and their ability to provide justification for their responses. In addition, documentation in the form of student worksheets shows improved students' ability to recognize problems and methodically create solutions. These results are consistent with the hypothesis put forward by Robert H. Ennis (1996) states that critical thinking includes the ability to logically analyze, evaluate, and make decisions.

In addition, students' critical thinking skills showed significant improvement during the implementation of PBL. Observations and documentation show that students are beginning to articulate ideas, ask questions, and make more logical arguments than before the implementation of the PBL paradigm. Interviews with some students also showed that they were more challenged and engaged in their studies because they faced real-world issues relevant to their lives. This is in line with Trianto's (2010) research, which states that PBL can improve higher-level thinking skills, such as critical thinking, when students are actively involved in the problem-solving process.

Overall, the results of the study show that the use of the *Problem Based Learning* (PBL) model can help sixth grade students of SD Negeri Sukowiryo 01 strengthen their critical thinking skills. This is shown by the increased enthusiasm of students in learning, their talent in solving problems, and their courage in expressing opinions. Therefore, the PBL model can be used as an effective teaching method to support elementary school students in developing critical thinking skills.

2. Critical Thinking Skills of Grade VI Students of SD Negeri Sukowiryo 01 During the Implementation of *the Problem Based Learning Model*

Based on observations, interviews, and documentation, sixth grade students at SD Negeri Sukowiryo 01 showed positive progress in their critical thinking skills during the implementation of *the Problem Based Learning* (PBL) learning model. Students' critical thinking skills were assessed using markers such as problem identification, expression of

point of view, logical reasoning, information analysis, and drawing conclusions with descriptive qualitative methods. The observational findings showed that students began to actively participate in group discussions during the learning process and tried to understand and solve problems presented by the teacher.

Observational data show that in the early stages of PBL implementation, some students still have difficulty identifying the main problem and prefer to wait for instructions from the instructor. However, as the learning process progresses, students begin to show improvements in their ability to ask questions and formulate difficulties more clearly. This is supported by documentation in the form of student worksheets that show improvements in the way students organize data and systematically develop problem-solving strategies for the same. These findings support the concept of Robert H. Ennis (1996) states that critical thinking includes the ability to identify problems, assess arguments, and arrive at intentional and logical conclusions.

Based on interviews with students, they felt more motivated and challenged because problem-based learning (PBL) gives them the freedom to think independently and participate in peer-to-peer conversations. Students say that learning PBL helps them understand the material more thoroughly because it encourages them to solve problems rather than merely memorizing facts. Teachers also see that students' learning habits have changed, becoming more engaged, confident, and able to provide explanations for their answers. This shows that PBL provides students with the greatest opportunity to develop their critical thinking skills.

In addition, students' ability to analyze and evaluate information increases. Students begin to evaluate several options and choose the best one based on observation and logical reasoning. However, some students still have difficulty formulating convincing arguments and reaching reliable conclusions. This shows that students' critical thinking skills develop gradually and require constant practice and supervision.

The findings of this study are in line with research showing that when students are actively involved in problem solving, the *Problem Based Learning* (PBL) model can improve their critical thinking skills (Sari et al., 2020). Furthermore, several studies have shown that PBL effectively teaches students to think more critically by asking them to analyze, assess, and reflect on the difficulties they face (Pratiwi, 2021).

Based on the overall results, it can be said that Grade VI students of SD Negeri Sukowiryo 01 have developed their critical thinking skills since the *Problem Based Learning* (PBL) model was implemented. This is shown by improving students' ability to recognize problems, evaluate data, express opinions, and reach logical conclusions. While there are still some challenges, PBL has been shown to help students improve their

critical thinking skills. Therefore, to obtain the best results, this learning paradigm must be used consistently and supported by appropriate learning techniques.

3. Supporting and Inhibiting Factors in the Implementation of *the Problem Based Learning Model* to Improve the Critical Thinking Skills of Grade VI Students of SD Negeri Sukowiryo 01

Based on the results obtained through observation, interviews, and documentation techniques, the implementation of *the Problem Based Learning* (PBL) learning model in improving the critical thinking skills of grade VI students of SD Negeri Sukowiryo 01 is influenced by various supporting and inhibiting factors. These factors arise naturally in the learning process and affect the effectiveness of the application of the PBL model in the classroom.

Teachers' function as facilitators who can manage learning actively and interactively is the main factor that allows the implementation of PBL. Based on observations, teachers can provide students with contextual issues that are relevant to their daily lives, making difficulties easier to understand. The teachers interviewed confirmed this, stating that choosing challenges relevant to students' daily lives increases their motivation and interest in learning. In addition, group collaboration among students is the main supporting component. The results of the group projects are documented, showing how student engagement improves their problem-solving perspectives and allows them to share their ideas. These results are consistent with research showing that group problem-based learning can improve students' critical thinking skills and engagement (Sari et al., 2020).

In addition, the implementation of PBL is supported by the availability of educational materials, including textbooks, student worksheets, and a supportive learning atmosphere. According to observations, students use various sources of knowledge to answer given problems, which adds meaning to the learning process. This is consistent with research showing that diverse educational materials can improve students' analytical and problem-solving skills (Pratiwi, 2021).

However, the effectiveness of the PBL paradigm during implementation is influenced by many challenges. One of the main obstacles is the gap in students' understanding and problem-solving skills. Observations show that some students still have difficulty identifying key problems and developing solutions independently. This conclusion is reinforced by teacher interviews, which reveal that students with lower ability levels typically rely on peers who are more involved in their groups. This leads to uneven student involvement in the learning process.

In addition, the obstacle in the implementation of PBL is the lack of study time for the students. Observations show that the problem-based learning process is more time-consuming than traditional learning approaches, especially in the discussion and

presentation phases. The lack of confidence of some students in their ability to convey their ideas is another obstacle to effective communication. According to the interviews, some students were afraid of being wrong, which made them reluctant to express their opinions or arguments. Students' critical thinking skills are not optimally developed due to this situation, especially in terms of debate and evaluation. In addition, the first obstacle in the implementation of PBL is the lack of familiarity of students with problem-based learning, which takes time for students to adjust to the learning paradigm.

D. Conclusion

Based on the results of the study, the application of *the Problem Based Learning* (PBL) model in grade VI of SD Negeri Sukowiryo 01 was able to improve students' critical thinking skills, which is defined by improving the ability to recognize problems, evaluate data, and rationally express and defend opinions. In addition, PBL encourages students to actively participate in their education. Differences in students' abilities, time constraints, and lack of self-confidence are inhibiting factors, while teacher roles, contextual issues, group participation, and learning resources are supporting elements. In general, PBL has been proven to be successful in helping elementary school students to improve their critical thinking skills.

Bibliography

- Adnyana, Gede Putra. 2012. Keterampilan Berpikir Kritis Dan Pemahaman Konsep Siswa Pada Model Siklus Belajar Hipotetis Deduktif. *Jurnal Pendidikan dan Pengajaran*, 45(3): 201–209. <https://ejournal.undiksha.ac.id/index.php/JPP/article/view/1833/1603>.
- Adrianti, R., Sujarwanto, E., & Surahman E. 2021. *Problem Based learning: Apa dan Bagaimana*. *DIFRACTION: Journal for Physics and Applied Physics*, Vol. 3 No. 1: 27–35.
- Ariani, R. F. (2020). Pengaruh model pembelajaran problem-based learning terhadap kemampuan berpikir kritis siswa SD pada muatan IPA. *Jurnal Ilmiah Pendidikan dan Pembelajaran*, 4(3), 422–432.
- Barrows, H. S. (1986). *A taxonomy of problem-based learning methods*. Medical Education.
- Bogdan, R., & Biklen, S. K. (2017). *Qualitative Research for Education: An Introduction to Theories and Methods* (6th ed.). Pearson.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Thousand Oaks, CA: SAGE Publications.

- Dewi, S. P., Santoso, L.M., Anwar Y., Ermayanti, E., Saputri, D.A., Pratiwi, I.R., Salsabila, N. (2023). Pelatihan pembuatan soal berpikir kritis untuk meningkatkan keterampilan abad 21 bagi guru IPA SMP Kota Pagaram. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 5(1), 250–259.
- Ennis, R. H. (1996). *Critical Thinking*. New Jersey: Prentice Hall.
- Faturrahman, M. A., Putri, N.R., Nusantoro, B.P., Novahisa, P., Kusuma Ayu, N.A., & Sandra, K.M. (2023). Studi literatur: Penggunaan model PBL terhadap kemampuan berpikir kritis peserta didik pada materi pencemaran lingkungan. *Jurnal Biogenerasi*, 8(1), 310–322.
- Haryanti, Y. D., dan Febriyanto, B. (2017). Model Problem Based Learning Membangun Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Jurnal Cakrawala Pendas*, 3(2), 57–63.
- Jamhari, M., Humaira, Paudi, R.I., & Bialangi, M.S. (2020). Pengaruh Model Problem Based Learning (PBL) terhadap Kemampuan Berpikir Kritis Siswa pada Mata Pelajaran IPA Biologi di SMP Negeri 7 Palu. *Journal of Biology Science and Education*, 8(1), 593-601.
- Juliyantika, T., dan Batubara, H. H. (2022). Tren Penelitian Keterampilan Berpikir Kritis pada Jurnal Pendidikan Dasar di Indonesia. *Jurnal Basicedu*, 6(3), 4731–4744.
- Leksono, S. *Pendekatan Deskriptif*. Jakarta: Raja Grafindo Persada, 2013.
- Manassero-Mas, M. A., Moreno-Salvo, A., & Vázquez-Alonso, Á. (2022). Development of an instrument to assess young people's attitudes toward critical thinking. *Thinking Skills and Creativity*, 45, 101100. <https://doi.org/10.1016/j.tsc.2022.101100>
- Miranti, K. (2021). Pengembangan perangkat pembelajaran menggunakan model problem based learning untuk meningkatkan keterampilan berpikir kritis peserta didik SMP. *Prosiding Magister Pendidikan Ilmu Pengetahuan Alam*, 1(1).
- Novelni, D. & Sukma, E. (2025). Analisis Langkah-Langkah Model Problem Based Learning Dalam Pembelajaran Tematik Terpadu Di Sekolah Dasar Menurut Pandangan Para Ahli. *Journal of Basic Education*, Vol. 4, No. 1.
- Sari, T. A., Hidayat, S., & Harfian, B. A. A. (2018). Analisis keterampilan berpikir kritis siswa SMA di Kecamatan Kalidoni dan Ilir Timur II. *Bioma: Jurnal Ilmiah Biologi*, 7(2), 183-195. <https://doi.org/10.26877/bioma.v7i2.2859>
- Sari, F. F. K., dan Atmojo, I. R. W. (2021). Analisis Kebutuhan Bahan Ajar Digital Berbasis Flipbook untuk Memberdayakan Keterampilan Abad 21 Peserta Didik pada Pembelajaran IPA Sekolah Dasar. *Jurnal Basicedu*, 5(6),
- Shanti, W. N., Sholihah, D. A., & Abdullah, A. A. (2018). Meningkatkan kemampuan berpikir kritis melalui CTL. *Jurnal Pembelajaran Matematika*, 5(1).
- Trianto. (2010). *Mendesain Model Pembelajaran Inovatif-Progresif*. Jakarta: Kencana.
- Trianto. (2010). *Designing an Innovative-Progressive Learning Model*. Jakarta: Kencana.