Jurnal Pendidikan Dasar Nusantara Vol 11, No 1, July 2025
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v11i1.26014

Improving Student Learning Outcomes of Grade VI in Science Subjects Through the Problem Based Learning Model

Submitted:
June 28, 2025
Accepted:
July 10, 2025
Published:
July 31, 2025

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Abstract: The purpose of this study is to improve student learning outcomes in the subject of social studies on the topic of international relations by implementing the Problem Based Learning (PBL) model in class VI of UPT SD Negeri Sumurgung 1 Tuban. This study focuses on the problem that arises in the form of low achievement of student learning outcomes in the subject of social studies on the topic of international relations due to the use of less effective learning models. The PBL model was chosen because it is able to encourage students to think critically, work together and solve problems relevant to everyday life. This study design uses Classroom Action Research (CAR) which is implemented in two cycles. The subjects in the study consisted of 12 students, including 7 male students and 5 female students. Each cycle includes the steps of planning, implementation, observation and reflection. Data were collected through observation sheets and written test results. This study shows that the use of the PBL model provides a significant increase in student learning outcomes. In cycle I, the average score reached 68.75 with a classical completion percentage of 41.66%. While in cycle II, the average score reached 84.58 with a classical completion percentage of 83.33%. Thus, it was concluded that the implementation of the Problem-Based Learning model was effective in improving student learning outcomes in the science subject of international relations. The researcher recommends that this model be used in teaching other subjects to improve student learning outcomes.

Keywords: Learning Outcomes, Science, Problem-Based Learning Model

PRELIMINARY

Education is a planned and systematic process to create a learning environment and learning activities for students so they can actively develop their potential (Sanga & Wangdra, 2023). Elementary school education aims to provide students with the basic knowledge, skills, and attitudes necessary for future success (Sasoeng et al., 2023). To achieve these educational goals at the elementary school level, the learning process must be designed in an engaging, contextual manner, and in line with students' cognitive development. Creating an active and enjoyable learning environment is crucial for

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learning. Effective learning can build understanding and foster higher-order thinking skills, such as critical thinking and problem-solving (Fatriani & Sukidjo, 2018).

One subject that plays a crucial role in instilling basic knowledge is Natural and Social Sciences (IPAS), a combination of Natural Sciences (IPA) and Social Sciences (IPS) in the independent curriculum for improving the basic education system in Indonesia. The independent curriculum is a curriculum that provides varied learning and emphasizes core material, so that students have sufficient time to understand concepts and improve their competencies (F. I. Ulya et al., 2023). The integration of science and social studies subjects is due to the fact that elementary school children tend to see things holistically, thus encouraging them to organize the natural and social environment as a whole in real life (Ahmad, 2024). Science subjects not only provide basic knowledge about natural and social phenomena but also foster critical thinking and problem-solving skills (Pendidikan, 2024). The material on international relations in science learning is one of the topics that students must master, particularly regarding international trade, namely exports and imports. This material is highly relevant to real life because it introduces students to forms of international cooperation, Indonesia's role in the global world, and the importance of tolerance and collaboration between nations. Therefore, a good understanding of this material needs to be supported by an effective learning process.

Several factors influence success in the learning process, namely internal and external factors (Siregar, 2024). Internal factors arise from within the student, while external factors originate from parties such as teachers, parents, the community, and others (Niawati & Reffiane, 2023). This means that these two factors are interrelated and play a crucial role in supporting student learning outcomes. Learning achievement depends not only on individual student abilities but also on the support of those around them, especially teachers. Therefore, it is crucial for teachers to select and implement appropriate learning models to create a supportive learning environment and facilitate active student engagement.

Referring to observations in grade VI of the Sumurgung 1 Elementary School UPT Tuban, data showed that learning was still dominated by lecture methods, which quickly bored students and resulted in minimal student engagement. They acted only as passive listeners without any activities that encouraged active participation. This lack of

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critical thinking skills was evident in group discussions, which were still dominated by simple and in-depth answers, and students' inability to ask follow-up questions regarding the problems presented. Meanwhile, low analytical skills were evident in the initial test results, where most students were only able to answer basic knowledge questions but failed to answer questions requiring analysis of cause-and-effect relationships between countries, such as questions about the impact of export-import cooperation on the national economy. As a result, students not only lost interest in learning but also failed to achieve the Learning Objective Achievement Criteria.

This situation requires innovation in the learning process that can increase student participation and understanding. One learning model considered effective is the Problem-Based Learning model. The Problem-Based Learning model is an innovative learning model that encourages students to learn through solving real-life problems. The PBL model is also defined as a learning model that exposes students to authentic situations and encourages them to develop critical thinking skills and find innovative solutions to the problems they face (Pancasila et al., 2025). This model creates an active learning environment and directly engages students in the learning process (Hotimah, 2020).

According to Trianto (in N. Ulya et al., 2025), the PBL model has several advantages, including motivating students to be more active, improving their ability to solve everyday problems, sparking new ideas, strengthening relationships and collaboration among students, and connecting school learning to real life. This Problem-Based Learning model has been applied by previous researchers to support improved learning outcomes. A study by (Fatah et al., 2023) titled "Improving Science Learning Outcomes through the PBL Model for Fourth-Grade Students of SDN 1 Cirendang, Kuningan District, Kuningan Regency" applied Classroom Action Research (CAR). The study found that before implementing the Problem-Based Learning (PBL) model, the percentage of students achieving learning mastery was 37% (Poor). Learning outcomes using the Problem-Based Learning (PBL) model showed that in the first cycle, the percentage was 41% (Poor), while in the second cycle, it increased to 89% (Good). Therefore, it can be concluded that the application of the PBL model for grade IV A students of SDN 1 Cirendang, Kuningan District, Kuningan Regency has succeeded in improving learning outcomes in science learning. In addition, another study also came from (Sari et al., 2021) with the title "Problem Based Learning Model as an Effort to

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Improve Social Studies Learning Outcomes of Grade VI Elementary School Students" by applying the problem based learning model for students can improve student learning outcomes with learning completeness of 92.08%.

Based on the problems presented, the researcher conducted a study entitled "Improving the Learning Outcomes of Grade VI Students in Science Subjects through the Problem Based Learning Model." Through the application of the Problem Based Learning model, it is expected that there will be an increase in students' active involvement in learning which will ultimately have a positive impact on their learning outcomes, both in terms of conceptual understanding, critical thinking skills, and achievement of the Learning Objective Achievement Criteria (KKTP).

METHOD

This study employed Classroom Action Research (CAR). CAR is a reflective, in-classroom study conducted during the teaching and learning process, with the primary goal of improving the quality of learning, which in turn impacts student learning outcomes (Arif & Oktafiana, 2023). This study was conducted to improve sixth-grade students' learning outcomes in the science subject of international relations through the application of the PBL model, referring to Kurt Lewin's CAR. Kurt Lewin's model is a spiral process encompassing planning, acting, observing, and reflecting (Machali, 2022).

This classroom action research was implemented in two cycles. In Cycle I, the planning stage began with the development of a teaching module based on the PBL model, along with learning media such as problem sheets and happy notes, and test questions. Learning actions were carried out in groups to solve contextual problems presented in the form of happy notes. Observations were conducted to assess student engagement, collaboration skills, and analytical skills. Afterward, a reflection was conducted on the learning process and outcomes to identify weaknesses that would be addressed in the next cycle. Cycle II was then implemented as an improvement with a more contextual approach through case studies, the addition of visual media such as images of national flags and export-import goods, and guided discussions by the teacher. This process was a follow-up to the results of the previous reflection. Observations in this cycle showed an increase in student participation, critical thinking skills, and the delivery

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of ideas. The final reflection showed that the actions taken in Cycle II were more effective in improving student learning outcomes.

The population and sample in this study were all 12 sixth-grade students of UPT SD Negeri Sumurgung 1 Tuban. The instruments used included observation sheets to obtain qualitative data to record student activities during learning, such as involvement, cooperation, and the ability to identify and solve problems. Meanwhile, quantitative data were obtained from test results in the form of evaluation questions compiled based on the learning material. The data from the student learning test results were analyzed descriptively quantitatively. Improvement in learning outcomes was determined by comparing the results of Cycle I and Cycle II. The percentage of student learning completion was calculated using the formula:

$$\text{KBK} = \frac{\Sigma N}{\Sigma S} \times 100\%$$
$$= \frac{\text{number of students who completed}}{\text{total number of students}} \times 100\%$$ (Septiani et al., 2024)

Learning is considered successful if 70% of students achieve the school-set minimum grade point average (KKTP) of 70 or higher.

The researcher served as both the teacher implementing the learning activities and as an observer during the learning process. All sixth-grade students were directly involved in the learning activities, implementing the PBL model. The research was conducted from November to January at the Sumurgung 1 Tuban Elementary School, Tuban District, Tuban Regency. Data validity in this classroom action research was achieved through Source Triangulation to compare observation data and learning outcome tests; Technical Triangulation using two instruments: observation sheets and learning outcome tests; and Research Triangulation through joint discussions between the teacher and researcher to provide feedback to each other to refine the research.

RESULTS

This study shows an improvement in sixth-grade students' learning outcomes in science. This is demonstrated through data on student performance development from cycle to cycle. This improvement indicates that the applied learning model is able to help students better understand the material and solve problems more accurately. The details of student learning outcomes can be seen in the following table:

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Table 1. Completion Criteria

Value	Criteria	Description
≥ 70	T	Completed
< 70	TT	Not Completed

Source: (Nurhayati & , Langlang Handayani, 2020)

Table 2. Results of Cycle 1 Student Abilities

No	Description	Value
1.	Highest Score	80
2.	Lowest Score	60
3.	Average	68,75
4.	Classical Mastery Percentage	41,66%

The results of Cycle I showed that the total score for all students was 825, with an average of 68.75. Of the 12 students, only 5 achieved a score of ≥ 70, resulting in a passing percentage of 41.66%. This means that most students have not achieved learning mastery.

Table 3. Results of Cycle II Student Abilities

No	Description	Nilai
1.	Highest Score	100
2.	Lowest Score	65
3.	Average	84,58
4.	Classical Mastery Percentage	83,33%

In Cycle II, the total score for all students reached 1,015 with an average of 84.58. Ten out of 12 students achieved a score of ≥ 70, increasing the passing percentage to 83.33%.

Table 4. Increase in Average Grades and Class Completion

Activities	Class Average	Passing Percentage
Cycle I	68,75	41,66%
Cycle II	84,58	83,33%

The data above shows that in Cycle I, the average student score was 68.75, with 41.66% achieving mastery. After improvements to learning in Cycle II, the average score increased to 84.58, and mastery increased to 83.33%.

DISCUSSION

This study aimed to improve the learning outcomes of sixth-grade students at the Sumurgung 1 Elementary School in Tuban through the use of the Problem-Based Learning (PBL) model for the science subject of international relations. The results showed a significant improvement between Cycle I and Cycle II, both in terms of average

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grades and percentage of learning completion. In Cycle I, the average student score was 68.75, with a completion rate of 41.66%. The low learning outcomes in Cycle I were due to several factors, including the dominance of the lecture method, which quickly led to student boredom, and minimal student engagement in the learning process. After improvements were made in Cycle II, significant improvements were observed. The average student score increased to 84.58, with a completion rate of 83.33%. This improvement indicates that most students understood the material well and were able to complete the test questions with scores that met the KKTP target.

These findings support a previous study by (Fatah et al., 2023) that demonstrated that the implementation of the PBL model had a positive impact on student active engagement, critical thinking skills, and deeper conceptual understanding. This is also in line with other research that states that learning using the Problem-Based Learning (PBL) model can improve students' social studies learning outcomes (Sari et al., 2021). Thus, the implementation of the Problem-Based Learning model is effective in improving sixth-grade students' learning outcomes in the social studies subject on international relations. Active participation in group discussions, student involvement in solving contextual problems, and improved test scores demonstrate the success of the interventions implemented in this study.

CONCLUSION

Based on the research results and discussions presented, it can be concluded that the application of the Problem Based Learning model in the subject of Science is effective in improving the learning outcomes of sixth grade students at the UPT SD Negeri Sumurgung 1 Tuban. This is indicated by the increase in the average student score in Cycle I, which is 68.75 and increased in Cycle II to 84.58. This increase is also evidenced by the percentage of learning completion which experienced a significant increase from 41.66% to 83.33% after Cycle II was implemented. Therefore, for future follow-up, the application of the Problem Based Learning model is very relevant to be applied to learning with other materials that require active group discussions, student involvement in solving problems and understanding concepts that have an impact on improving learning outcomes.

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REFERENCES

Ahmad, T. P. (2024). Perencanakan pembelajaran bermakna dan asesmen kurikulum merdeka. *Jurnal Ilmiah Pedagogy*, *20*(1), 75–94.

Arif, S., & Oktafiana, S. (2023). *Penelitian tindakan kelas*. Yogyakarta: Deepublish.

Fatah, R. P., Kisai, A. A., & Labudasari, E. (2023). Peningkatan Hasil Belajar IPAS melalui Model Pembelajaran Problem Based Learning (PBL) pada Siswa Kelas IV SDN 1 Cirendang Kecamatan Kuningan Kabupaten Kuningan. *El-Muhbib:Jurnal Pemikiran & Penelitian Pendidikan*, *7*(1), 29–40. https://jurnalilmiahcitrabakti.ac.id/jil/index.php/jil/article/view/101/117

Fatriani, E., & Sukidjo, S. (2018). Efektivitas metode problem based learning ditinjau dari kemampuan berpikir kritis dan sikap sosial siswa. *SOCIA: Jurnal Ilmu-Ilmu Sosial*, *15*(1), 11–26. https://doi.org/10.21831/socia.v15i1.20089

Hotimah, H. (2020). Penerapan Metode Pembelajaran Problem Based Learning Dalam Meningkatkan Kemampuan Bercerita Pada Siswa Sekolah Dasar. *Jurnal Edukasi*, *7*(3), 5. https://doi.org/10.19184/jukasi.v7i3.21599

Machali, I. (2022). Bagaimana Melakukan Penelitian Tindakan Kelas Bagi Guru? *Indonesian Journal of Action Research*, *1*(2), 315–327. https://doi.org/10.14421/ijar.2022.12-21

Niawati, K., & Reffiane, F. (2023). Upaya Meningkatkan Hasil Belajar IPAS Kelas V melalui Metode Problem Based Learning (Pbl) Berbantu Media Konkret. *Jurnal Pendidikan Guru Profesional*, *1*(2), 215–224. https://doi.org/10.26877/jpgp.v1i2.235

Nurhayati, H., & , Langlang Handayani, N. W. (2020). Jurnal basicedu. Jurnal Basicedu,. *Jurnal Basicedu*, *5*(5), 3(2), 524–532. https://journal.uii.ac.id/ajie/article/view/971

Pancasila, P., Puspita, R. D., Dasar, P., Terbuka, U., Dasar, P., & Ikip, U. (2025). *Jurnal perseda*. *8*(1), 77–86.

Sanga, L. D., & Wangdra, Y. (2023). Pendidikan Adalah Faktor Penentu Daya Saing Bangsa. *Prosiding Seminar Nasional Ilmu Sosial Dan Teknologi (SNISTEK)*, *5*(September), 84–90. https://doi.org/10.33884/psnistek.v5i.8067

Sari, P. I., Kristiantari, M. G. R., & Saputra, K. A. (2021). Model Pembelajaran Problem Based Learning sebagai Upaya Meningkatkan Hasil Belajar IPS Siswa Kelas VI Sekolah Dasar. *Jurnal Imiah Pendidikan Dan Pembelajaran*, *5*(3), 544. https://doi.org/10.23887/jipp.v5i3.37697

Sasoeng, N. J., Wonggo, D., & Liando, O. E. S. (2023). Penerapan Model Pembelajaran Berbasis Masalah untuk Meningkatkan Hasil Belajar Siswa SMK. *Edutik : Jurnal Pendidikan Teknologi Informasi Dan Komunikasi*, *3*(2), 243–252. https://doi.org/10.53682/edutik.v3i2.7000

Septiani, M., Zain, M. I., & Hasnawati, H. (2024). Pengembangan Media Permainan Ular Tangga Berbasis Kearifan Lokal untuk Meningkatkan Hasil Belajar IPAS Siswa Kelas IV. *Journal of Classroom Action Research*, *6*(1), 208–215.

ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v11i1.26014

Siregar, H. T. (2024). *Faktor-Faktor yang Mempengaruhi Hasil Belajar Dalam Pembelajaran PAI*. *2*. https://psikologi.uma.ac.id/wp-content/uploads/201

Ulya, F. I., Mudzanatun, Istikomah, A., & Farichah, R. N. (2023). *Peningkatan Partisipasi Siswa Melalui Media Interaktif IPAS Berbasis Project Based Learning di Sekolah Dasar*. *23*, 1991–1998.

Ulya, N., Pritasari, A. C., & Madura, U. T. (2025). *Pengaruh Model Problem Based Learning (PBL) terhadap Hasil Belajar Kognitif pada Mata Pelajaran IPAS Siswa Kelas VI SDN Bandungrejo 1*. *3*(1).