

# Implementation of Problem Based Learning to Improve Students Motivation

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Received: June 06, 2024

Revised: December 15, 2024

Accepted: January 25, 2025

Published: January 31, 2025

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DOI: [10.29303/jppipa.v11i1.10049](https://doi.org/10.29303/jppipa.v11i1.10049)

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**Abstract:** The purpose of this study was to describe the implementation of the Problem Based Learning (PBL) learning model with interactive multimedia media and to increase student learning motivation through the application of the Problem-Based Learning (PBL) learning model assisted by interactive multimedia media at SDN Jatisari 3 Bekasi. The research method used is Action Research by adopting the STAR approach (Situation, Challenge, Action, Reflection of Results and Impact). Data were collected through teacher reflection journals, video recordings of learning, observation sheets by school supervisors, interviews with students and teachers, surveys to students, and artifacts of student learning outcomes. The results of this study are that this innovative approach has a significant positive impact on student learning motivation in Elementary Schools. Some of the main findings that can be used as the main conclusions include: increased Student Engagement; interactive multimedia can be an effective tool to facilitate conceptual understanding; improving technological infrastructure is key to ensuring smooth implementation and a smooth learning experience; students find it more fun to learn with multimedia and feel more interested; increased student motivation and participation through the PBL Learning model assisted by interactive multimedia has succeeded in stimulating student learning motivation; and indicators of successful implementation have been met.

**Keywords:** Interactive multimedia; Motivation; PBL

## Introduction

Primary education plays a central role in shaping the foundation of students' knowledge, skills, and attitudes. One of the key factors that affect the success of learning is student motivation. At the primary school level, the critical phase of learning motivation formation begins, and positive experiences during this period can form a sustainable learning attitude. SDN Jatisari 3 Bekasi, as part of the education system, must continue to adapt to the development of the dynamic world of education. The main challenge faced by many elementary schools is how to create a learning environment that can inspire and increase students' motivation to learn.

In the world of education, it is important to understand that the learning environment has an important role in shaping learning motivation. At the same time, it needs to be emphasized that the existence of a learning environment simultaneously has a positive and significant impact on learning encouragement. The presence of a learning environment simultaneously has a significant positive impact on learning motivation (Damanik, 2019).

Conventional learning models are often less able to maintain student motivation, especially in the face of the complexity and contextuality of subject matter. Students' learning motivation plays a central role in determining the success of learning at the elementary school (SD) level, several research results have proven it, including

### How to Cite:

Rediyono. (2025). Implementation of Problem Based Learning to Improve Students Motivation. *Jurnal Penelitian Pendidikan IPA*, 11(1), 1099-1105.

<https://doi.org/10.29303/jppipa.v11i1.10049>

research of Abadi & Wintarti (2021) Motivation is not only the encouragement to achieve good academic results, but also the key to building a foundation of a positive attitude towards learning, creativity, and perseverance in overcoming learning challenges. Several studies have outlined several aspects of the importance of learning motivation in the learning process (Abroto et al., 2021) as the authors can summarize. First, encouraging the desire to learn, learning motivation plays an important role in shaping students' desire to learn.

Students who are motivated from within themselves tend to be more eager to understand the material, actively ask questions, and fully engage in learning, thus forming a deep understanding. In addition, they are also more diligent and consistent in learning, have better endurance against difficulties, which ultimately improves academic achievement. High motivation also triggers the courage to try new things and develop creativity, so that students not only understand the material in a monotonous way, but also be able to apply knowledge innovatively. Motivated students also have higher self-confidence, which positively impacts various aspects of life. Active involvement in learning is also a hallmark of motivated students, which enriches the learning experience and enhances social and communication skills. Furthermore, high learning motivation correlates with good academic performance, as students are motivated to learn not only for grades, but also for deep understanding. Finally, learning motivation plays an important role in shaping students' character, helping them have a positive attitude towards challenges and failures.

Through understanding and acknowledging the urgency of student learning motivation, educators at the Elementary School level can develop learning strategies that not only focus on knowledge transfer but also stimulate students' intrinsic interest, interest, and motivation. Thus, learning is not only an obligation, but a meaningful journey that shapes character and opens the door to broader knowledge. Motivation is not just a drive to achieve good academic results, but also the key to building a foundation of a positive attitude towards learning, creativity, and perseverance in overcoming learning challenges. Several studies have outlined several aspects of the importance of learning motivation in the learning process (Fatayan, 2022).

This preliminary study notes some important findings from observations and interviews. First, it was found that there were students who were passive in class, characterized by a lack of participation and enthusiasm in learning. They have difficulty actively engaging in discussions, asking questions, or participating in class activities. Some of the factors that

are suspected to be the cause include a lack of interest in the material, unattractive teaching methods, or a lack of self-confidence.

Second, interactions between students during learning, such as telling stories with their classmates, are also in the spotlight. Although social interaction is important, if it is excessive, it can interfere with students' focus on the material being studied. Third, many students are reluctant to express their opinions. This may be due to a less supportive classroom atmosphere, fear of negative judgment, or a lack of confidence. This situation shows that students need to be encouraged to feel comfortable and safe in expressing their opinions in class.

Finally, lack of focus when studying is also a significant problem. This can have a bad impact on the understanding and absorption of subject matter. Some factors that can cause a lack of focus include distractions from the outside, inappropriate teaching methods, or a lack of visual or interactive appeal in learning.

The initial findings of this study were discussed with a research team consisting of several lecturers. The research team carried out an action plan for improvement. The first action is to improve learning methods by using more interactive and engaging learning methods that can help increase student engagement. The next action is to create a positive atmosphere so that a positive classroom atmosphere can be realized/created and support/help students feel comfortable expressing their opinions and ideas. The final action plan is the use of technology and interactive media. The application or use of technology and interactive media in learning is expected to help attract students' attention and become more familiar with multimedia approaches.

One interesting alternative is the application of Problem-Based Learning (PBL), a learning approach that emphasizes problem-solving, collaboration, and the application of knowledge in real contexts. PBL provides opportunities for students to be actively involved in learning, but its success depends on a number of factors, including the sustainability of student motivation. (Pagarra, 2021) Application of Problem-Based Learning Model in Improving Reading Skills. The selection of the PBL model is based on the exploration of literature studies, both reference books and articles in reputable scientific journals. Some articles that support the selection of the PBL model include the results of research by Amin et al. (2021) which emphasizes that the Problem-Based Learning (PBL) model can increase student learning motivation. The difference between this study and the results of previous research lies in the differences in student culture and the use of interactive multimedia. The culture of students at SDN Negeri 69

Balang-balang is still very natural with environmental conditions full of families and being in remote areas. In addition, the use of interactive multimedia in the PBL model is still very rare.

Through research and implementation of learning models such as Problem-Based Learning (PBL) assisted by interactive multimedia media, it is hoped that it can solve problems and increase student learning motivation at SDN 69 Balang-balang. The importance of the role of media in supporting learning is increasingly prominent, especially with the advancement of interactive multimedia technology. This medium can create a deeper and more engaging learning experience, spark students' imaginations, and provide a more tangible context for problem-solving. In this case, the application of the PBL model assisted by interactive multimedia media is expected to provide a more meaningful and in-depth learning experience.

In the midst of the positive potential of the PBL model, there have not been many studies that specifically explore the effect of the application of the PBL model fostered by interactive multimedia media on the learning motivation of students at SDN 69 Balang-balang. Therefore, this research is relevant and important to be conducted. By understanding more about how the integration between PBL and interactive multimedia can increase students' motivation to learn, SDN 69 Balang-balang can take strategic steps in improving the quality of learning, creating a supportive environment, and preparing students to face the challenges of the 21st century. This research is expected to provide a scientific basis for the development of better and more innovative learning methods at the basic education level.

The purpose of this study is: to describe the application of the Problem-Based Learning (PBL) learning model assisted by interactive multimedia media at Jatisari 3 Bekasi State Elementary School, and to increase student learning motivation through the application of the Problem-Based Learning (PBL) learning model assisted by interactive multimedia media at SD Negeri Balang-balang 69.

**Method**

This research uses the Classroom Action Research (PTK) approach to overcome student problems in learning. PTK was chosen because of its cyclic and participatory nature, allowing researchers (in this case teachers) to identify problems, plan actions, implement actions, observe and evaluate the results, and reflect on the process for further improvement.

The STAR method is a framework used in PTK to assist teachers in each stage of the cycle. STAR stands

for: Step 1 Situation: At this stage, the teacher identifies and analyzes in depth the context and learning problems faced by students. Teachers need to comprehensively understand the factors that cause these problems, both internal factors in managing students' social-emotional learning environment, building relationships with students, implementing positive discipline, providing feedback, learning methods, motivational problems, HOTS materials, numeracy literacy, misunderstandings, the use of technology in learning, assessment, interaction with students' parents, the use of innovative learning models, and learning other problems.

Step 2 Task: After understanding the situation, the teacher formulates a specific challenge or problem that needs to be overcome in learning. These challenges must be formulated clearly and measurably in order to be evaluated.

Step 3 Action: At this stage, the teacher designs and implements relevant corrective actions to overcome the challenges that have been formulated. These actions can be in the form of changes in teaching methods, the use of different learning media, or more interactive learning strategies. Step 4 Reflection: After carrying out the action, the teacher evaluates and reflects on the effectiveness of the action. Teachers collect data through observations, interviews, or tests to see if the actions taken have successfully addressed the challenges students face. The results of this reflection are used as a basis for planning further corrective actions if needed.

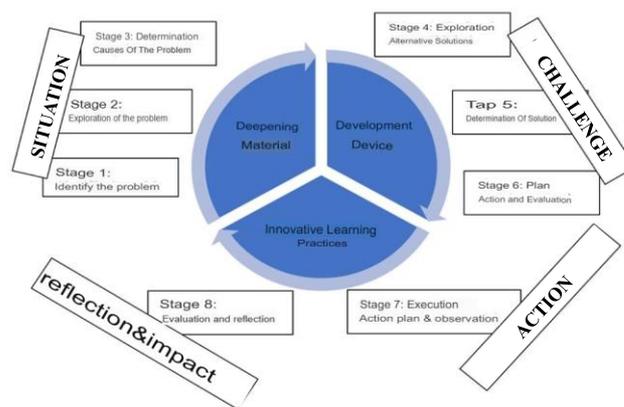


Figure 1. Research Flow

**Result and Discussion**

*Situation*

Based on the findings during interviews with three teachers, the principal, and the school supervisor revealed that the core of students did not pay attention to the learning delivered by the teacher, students did not have the courage to express opinions and ideas because of low student learning motivation. The results of

distributing questionnaires to students obtained an average learning motivation score of 50 on a scale of 0-100. For student participation data in class: 60% of students are active, and 40% of students are less active. One of the findings of his research revealed that one of the causes of low student learning motivation was caused by the use of learning methods/models (Alfiah et al., 2021).

The results of interviews with students showed that they were very bored with the learning process presented by their teachers. Teachers teach without a variety of learning models, methods, and media. The learning models and methods delivered by teachers are still conventional by relying on lecture methods. In contrast to interviews with school leaders and school supervisors, they said that in fact some teachers have been learning using new models and methods but not in accordance with the conditions and characteristics of schools and students. In addition, the latest models or methods they use are irrelevant to the learning material. After being confirmed directly with teachers, they are actually eager to do innovative learning but they are still confused about models and methods that suit the school context, student characteristics and suitability with the subject matter.

### *Challenge*

Based on the analysis, the alternative solution chosen was the interactive multimedia-assisted PBL learning model because it has the highest percentage of support and weaknesses that can be overcome with good resource management. Literature studies show the effectiveness of PBL in increasing learning motivation (Ilyas, 2022). The action plan data and evaluations carried out are:

**Implementation Strategy:** Implementation of the PBL learning model assisted by interactive multimedia: Steps for creating teaching tools: creating interactive modules for each learning topic, developing interesting multimedia content that supports learning objectives, compiling problem-based project assignments that trigger critical thinking and collaboration; Other relevant forms: increasing access to and use of technology in the classroom, intensive training for teachers in the use of interactive multimedia, providing technical support and mentoring during implementation; and Evaluation Plan (Evaluation Instrument). Literature studies show the effectiveness of PBL in increasing learning motivation, including research conducted (Fajari, 2020).

**Teacher reflection journal:** recording teacher experiences during implementation, capturing challenges and successes, recording frequency, every week for 3 months. Video recording of learning:

recording learning activities to check student interactions and responses to the material, analyzed for levels of student engagement and understanding. Recording frequency: every two weeks for 3 months.

**Observation sheet by school supervisor:** direct classroom observation to assess PBL implementation and multimedia usage, using a special rubric covering critical aspects. Observation frequency: every month for 3 months. Interviews with students and teachers: gather direct feedback on learning and teaching experiences, assess student perceptions of increased motivation. Interview frequency: beginning, middle, and end of implementation.

**Student survey:** a survey with questions related to learning motivation and learning preferences, conducted before and after implementation to compare changes. Survey frequency: pre-implementation, post-implementation. Student learning outcome artifacts: collecting student learning outcome projects or assignments as concrete evidence, assessing the level of achievement of learning objectives, stored as a student learning outcome portfolio. In one of their research findings revealed that one of the causes of low student learning motivation was caused by the use of learning methods/models. Likewise, research by (Cakir, 2018).

This data reflects a structured action plan and evaluation to implement the selected solution (Interactive Multimedia Assisted PBL Learning Model) in the study to improve students' learning motivation in Elementary Schools. Various evaluation instruments were designed to provide a comprehensive picture of the effectiveness of the implementation and its impact on students and teachers. The use of innovative learning models can help increase student learning motivation as in several other studies such as (Arifin, 2020).

### *Action*

Data from the evaluation results of the implementation of the PBL learning model using interactive multimedia on students' learning motivation:

**Teacher Reflection Journal.** Week 1: teachers noted initial challenges in developing interactive modules, but were enthusiastic about the positive student response. Week 3: Observed increased student engagement after multimedia use, but encountered technical challenges that required improvement. Interactive multimedia based on cultural diversity to improve the understanding of civic concepts and learning motivation (Kus, 2022).

In the teacher reflection journal, it was seen that in the first week of implementation, the teacher noted initial challenges in developing interactive modules. However, enthusiasm emerged thanks to positive student responses. In the third week, the teacher

observed increased student engagement after the use of multimedia, but faced technical obstacles that were identified as areas for improvement. This reflects the teacher's adaptability in overcoming challenges and willingness to improve the learning experience.

Learning Video Recordings, students are actively involved in group discussions, demonstrating good collaboration. Video increased student interaction with multimedia materials, demonstrating better understanding of concepts. Feedback from the video recording of the learning shows that students are actively involved in group discussions in the second week, indicating good collaboration. In the fourth week, there is an increase in student interaction with multimedia materials, illustrating a better understanding of the concept. These results indicate that the use of interactive multimedia has succeeded in creating a learning environment that supports student collaboration and understanding. Learning Resources Based on Interactive Learning Media in Schools (Masdar, 2022).

Observation sheet by school supervisor, Criteria 1: material selection and delivery (score: 4/5). Criteria 2: teacher-student interaction (score: 5/5). Criterion 3: use of multimedia (score: 3/5). The observation sheet by the school supervisor gave positive scores related to the selection of materials and delivery (4/5), teacher-student interaction (5/5), although the use of multimedia received a score that needed improvement (3/5). This provides an indication that further development in the use of multimedia can improve the effectiveness of learning.

Interview with students and tutors, Survey to students, question: "how much do you feel motivated in learning?". Before implementation: average score 3/5 while after implementation: Average score 4.5/5. The results of the survey before implementation showed an average score of student learning motivation of 3/5, while after implementation it increased to 4.5/5. This significant increase reflects that the PBL learning model assisted by interactive multimedia has a positive impact on student motivation.

Student Learning Outcome Artifacts: Math project: multimedia presentation on the concept of multiplication, Indonesian language assignment: creating an interactive story with the help of multimedia. Student learning artifacts in the form of mathematics projects and Indonesian language assignments demonstrate student creativity and implementation of concepts obtained through interactive learning. This shows that students are able to apply their knowledge in real contexts.

Implementation Success Indicators: Student participation increased from 60 to 85% over 3 months,

Teacher evaluations showed an increase from an average of 75 to 90%. Student grades on problem-based project assignments increased by an average of 20%. Survey results showed that 90% of students felt more motivated after implementation. Positive feedback from students and teachers in interviews and surveys. Success indicators showed consistent improvement over 3 months. Student participation increased from 60 to 85%, teacher evaluation increased from 75 to 90%, and student grades on problem-based project assignments increased by an average of 20%. Survey results showed that 90% of students felt more motivated after implementation, and positive feedback was obtained from interviews with students and teachers.

Overall, the evaluation results show that the interactive multimedia-assisted PBL Learning Model has a positive impact on student motivation, participation, and conceptual understanding. Although there are technical challenges identified, reflection and follow-up plans need to be directed to improve these obstacles and improve future implementation.

These data reflect the results of the evaluation of the implementation of the Interactive Multimedia-Assisted PBL Learning Model, showing a significant increase in student engagement, teacher response, and student learning motivation. The various evaluation instruments provide a comprehensive picture of the positive impact of the implemented solution to address the problem of student learning motivation in Elementary Schools.

### *Reflection and Impact*

#### *Reflections on Innovative Learning Practices*

Strength: Student engagement: the implementation of the PBL learning model assisted by interactive multimedia has significantly increased student engagement. Students are actively involved in discussions, problem-based projects, and multimedia assignments, creating a more dynamic learning environment; Positive response: Feedback from students and teachers showed a positive response to this innovative approach. Students reported increased motivation, while teachers observed positive changes in student participation and understanding; Skills development: students engage in projects and assignments that build problem-solving, collaboration, and critical thinking skills. This is in line with the original goal of increasing motivation and engagement through innovative learning. The selection of the PBL model is based on the exploration of literature studies, both reference books and articles in reputable scientific journals. Several articles that support the selection of the PBL model include research results (Herman, 2022)

Challenge: Technical constraints: the emergence of technical constraints such as device limitations and

network problems require quick adjustments and solutions so that learning is not disrupted; Teacher training: despite intensive training, some teachers still feel the need for improvement in managing interactive multimedia devices and integrating them into the curriculum; Continuous monitoring: challenges in maintaining student engagement and learning effectiveness need to be addressed through continuous monitoring efforts for continuous improvement.

Meaning and learning, this experience shows that innovative learning can be a catalyst for positive change in student motivation and participation. However, thoroughness in technical preparation and continuity in teacher training are critical to successful implementation. Based on the analysis of the description of the findings above, the follow-up plans for improving learning that can be carried out include: Improvement of technology infrastructure. Identifying and fixing technical constraints such as device availability and connectivity to ensure smooth implementation of innovative learning; Strengthening teacher training. Developing advanced training programs that focus more on technology management, the effectiveness of interactive multimedia, and strategies for addressing potential classroom challenges; Continuous monitoring and evaluation. Implement a structured monitoring system to continuously monitor student engagement and learning effectiveness. Use monitoring results to adjust content and learning approaches; Formative approach. Integrate formative approaches into the learning process, including regular feedback to teachers and students. Facilitate reflection and continuous improvement; Collaboration between teachers. Encourage collaboration between teachers to share experiences and best strategies. Establish regular forums or meetings for the exchange of ideas and mutual support; Development of additional materials.

Developing more additional learning materials that support innovative approaches, including interactive modules and multimedia resources that can enrich students' learning experiences; Results of reflection and follow-up plan. The process of reflection and follow-up plan is expected to strengthen the implementation of the PBL learning model assisted by interactive multimedia. By addressing challenges and strengthening strengths, innovative learning can continue to be the center of positive change in student motivation and engagement. Achievement Motivation on Students' Academic Procrastination Behavior (Robbi, 2022).

## Conclusion

This study examines the application of the interactive multimedia-assisted Problem-Based

Learning (PBL) learning model and its impact on student learning motivation at SDN 69 Balang-balang. Based on the findings of the study, several key conclusions can be drawn: Interactive multimedia-assisted PBL models have been proven to significantly increase student engagement in the learning process. This is reflected in students' positive responses to interactive modules, problem-based project assignments, and the use of multimedia that creates a dynamic and collaborative learning environment. Analysis of learning video recordings showed an increase in students' interaction with multimedia materials, which indicates a better understanding of concepts. These findings reinforce the argument that interactive multimedia is an effective tool to facilitate students' conceptual understanding. The study identified technical constraints, such as device limitations and network connectivity, as areas that need attention. Improving technological infrastructure and adequate technical support are key to ensuring the smooth implementation of the learning model and an optimal learning experience for students. Interviews with teachers and students revealed a positive perception of this innovative learning model. Teachers acknowledge the need for technical adjustments, but they also see increased student engagement as a positive outcome. Students also feel more motivated and enjoy learning with multimedia. The survey results showed a significant increase in students' learning motivation scores after the implementation of the interactive multimedia-assisted PBL model. The use of Problem-Based Learning Models can increase Student Learning Motivation in Elementary Schools (Roni, 2022).

This increase shows that this learning model is effective in stimulating students' learning motivation. This research successfully met the indicators of successful implementation, including increased student participation, increased teacher evaluation, and increased student grades on problem-based project assignments. The survey results also confirmed that most students felt more motivated after participating in learning with this model. In general, this study concludes that the interactive multimedia-assisted PBL learning model is an effective approach to increase students' learning motivation. However, the identified technical challenges highlight the need for further investment in technology infrastructure and teacher training. By continuing to optimize its implementation, this innovative learning model is expected to have a sustainable positive impact on learning at SD Jatisari 3 Bekasi.

## Acknowledgments

I would like to thank to all parties who has supported this research.

**Funding**

This research received no external funding.

**Conflicts of Interest**

The authors declare no conflict of interest.

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