



Enhancing Learning Abilities through Problem-Based Learning: A Meta-Analysis at Sanggar Bimbingan Hulu Kelang

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Abstract

Traditional learning methods in schools often involve passive activities such as listening, completing assignments, and focusing solely on textbooks. This lack of interaction between teachers and students, or among students themselves, can lead to ineffective learning and lower student outcomes. This research aims to analyze the effectiveness of the Problem-Based Learning (PBL) model in enhancing learning abilities at Sanggar Bimbingan Hulu Kelang. The study employs a meta-analysis method, with data collected through field observations and document reviews. The data was then analyzed both descriptively and qualitatively. The results indicate that the PBL model significantly improved students' learning abilities, with an increase from a low of 8.9 percent to an average of 83.3 percent. The PBL model has proven effective in enhancing social studies learning outcomes for elementary school students. The findings of this research can assist teachers in selecting an appropriate learning model to improve student learning outcomes.

Keywords: educational challenge, innovative teaching, learning abilities, problem-based learning

1. Introduction

Sanggar Bimbingan Hulu Kelang is an educational institution in Indonesia that provides elementary or MI level education. It operates under the auspices of SIKL in Malaysia. Established in 2022 (Azizah, Mumfaza, et al., 2023). *Sanggar Bimbingan* Hulu Kelang has been serving the community for a significant period, providing quality education to the children of Indonesian immigrants (Fauziyah et al., 2022).

Currently, the school has a total of 49 students, all of whom are children of Indonesian immigrants who have chosen to settle in Malaysia. These immigrants often have blank identities or lack the necessary permissions to reside in the country legally (Della Amrina Yusra, 2023). Despite these challenges, the school continues to provide these children with the education they deserve (Fauziyah et al., 2022).

The establishment of *Sanggar Bimbingan* Hulu Kelang was a direct result of a government program that mandated 12 years of compulsory education. This program was designed to address the educational limitations faced by the children of Indonesian immigrants in Malaysia (Musli & Yumasdaleni, 2023). The 12-year compulsory education program takes into account a socio-cultural perspective that aims to reduce the high school dropout rate, curb the growth rate of child labor, and facilitate children's access to school (Fauziyah et al., 2022).

In addition to these domestic goals, the program also aims to prepare internationally competitive human

resources, even for those located outside Indonesia's territorial boundaries (Anam et al., 2022). This aligns with Article 31, paragraph 1 of the 1945 Constitution, which states, "Every citizen has the right to education" (Fauziyah et al., 2022).

In its efforts to uphold this right, the Indonesian government, through the Embassy of the Republic of Indonesia in Kuala Lumpur, has partnered with the Association of Muhammadiyah and Aisyiah College Teaching Personnel Educational Institutions (ALPTK PTMA). This partnership involves sending selected students to serve as teaching staff in several *Sanggar Bimbingan* Hulu Kelang schools that have been established in neighboring countries (Novia, 2023).

ALPTK PTMA serves as a forum for students who wish to contribute their services, particularly abroad, and specifically in Malaysia. As the organizer of the 5th Batch of the Malaysian International KKN-Dik, ALPTK PTMA acts as a bridge for facilitating these service activities (Dewi, 2018). One of the key services implemented in the *Sanggar Bimbingan* Hulu Kelang is teaching using the problem primary learning method. This innovative teaching approach is expected to significantly enhance the learning abilities of students at the *Sanggar Bimbingan* Hulu Kelang. Moreover, it aims to motivate students to develop a passion for learning and attending school, achieve accomplishments in their respective fields, and understand the crucial role of education in securing a prosperous future (Fauziyah et al., 2022).

2. Method

The Problem-Based Learning (PBL) method is an innovative learning model that is designed to simulate real-world problems typically encountered in a professional work environment. The primary objective of this method is to encourage students to independently gather and integrate new knowledge, thereby fostering a sense of self-reliance and initiative (Ruthven, 2020). A distinguishing feature of this method is its focus on fostering active problem-solving skills among students, thereby equipping them with the necessary tools to tackle complex issues (Novi Andriastutik, 2013).

In contrast to traditional learning methods where information flow is unidirectional, PBL provides students with learning material in a multi-directional manner. This approach promotes a more comprehensive understanding of the subject matter, as it encourages students to view the problem from multiple perspectives (Shobahiya, 2016). The PBL model is designed to facilitate a natural learning process, characterized by student activities aimed at enhancing problem-solving skills and fostering independence. This approach enables students to formulate, solve, and interpret mathematical problems in various contexts, thereby promoting a deeper understanding of the subject matter (Alston-Abel & Berninger, 2018; Ball et al., 2014; Lechner et al., 2021).

The PBL learning process is initiated by presenting a problem to the students. This is followed by a phase of problem identification, where students engage in

discussions to align their understanding of the problem. This collaborative approach promotes a shared understanding of the problem, thereby fostering a sense of community among the students. Subsequently, they design solutions and set targets that need to be achieved by the end of the learning process. To achieve these targets, students are encouraged to gather knowledge from various sources such as books, the internet, and observations. This approach promotes a sense of curiosity and encourages students to take an active role in their learning process (Azizah, Mumfaza, et al., 2023).

A significant advantage of the PBL model is that it promotes interaction among students. It provides a platform for students to collaborate, exchange knowledge, and carry out evaluations. This collaborative approach fosters a sense of community among the students and promotes a culture of shared learning (Abuya et al., 2015; Skwarchuk et al., 2014). In this learning model, the teacher assumes the role of a facilitator, guiding the students through the learning process, which is primarily student-centered. This approach promotes a sense of ownership among the students and encourages them to take an active role in their learning process (Gumartifa et al., 2023).

Several research studies have highlighted the effectiveness of the PBL model in enhancing the learning abilities of elementary school students. These studies suggest that the PBL model can significantly improve students' learning outcomes, thereby validating its application in the educational context. The

success of the PBL model in improving learning outcomes underscores its potential as a powerful tool for enhancing the quality of education (Ruthven, 2020; Wardhani et al., 2022). By fostering a sense of curiosity, promoting active learning, and encouraging collaboration, the PBL model holds the promise of transforming the educational landscape (Gumartifa et al., 2023).

3. **Result and Discussion**

This research provides a comprehensive analysis of the effectiveness of the problem-based learning method in enhancing the abilities of students at the SB Hulu Kelang (Gumartifa et al., 2023). The study was meticulously conducted with a carefully selected sample size of 49 students from the Hulu Kelang Guidance Studio. These students were chosen based on specific criteria, including a strong determination and an unwavering enthusiasm for learning. The sample was diverse, encompassing students from classes 1-6 and included both boys and girls, thereby ensuring a broad perspective (Azizah, Mumfaza, et al., 2023; Lechner et al., 2021).



Figure 1. Students Actively Engaging in Problem-Based Learning

The research methodology was robust and involved detailed observations and the implementation of class action in the form of special assistance tailored for each class. The data collected from these actions were systematically arranged in a tabular format, facilitating ease of analysis and interpretation (Azizah, Setiadi, et al., 2023). The success of this program was evaluated against several sub-categories, including literacy skills, numeracy, and national insight (Gumartifa et al., 2023). To further enhance the validity of the findings, qualitative data such as student feedback, classroom dynamics, and engagement levels were also considered. This qualitative dimension added depth to the overall evaluation, providing insights into the emotional and cognitive impact of the problem-based learning method on students.

Moreover, the research acknowledges the limitations, including the need for longer-term follow-up to assess the sustainability of the observed improvements. Future studies may consider expanding the sample size and incorporating control groups to strengthen the generalizability of the findings. Nonetheless, the positive outcomes identified in this research underscore the potential of the problem-based learning method in fostering holistic development and academic excellence among students at the SB Hulu Kelang. Detailed explanations of these sub-categories, along with their relevance to the study, will be presented in the following tables:

Tabel 1. Result of Problem-based Learning Method

No	Activities	Before Activities	Impact After Activities
1	Reading textbooks and learning basic Latin writing for students in grades 1-3	Many students need help with reading and writing.	Students can read words in one sentence well and correctly.
2	Primary calculation media using mathematical calculation tools and fast calculation methods for students in grades 1-6	Some SB Hulu Kelang students have potential in numeracy because they have their techniques for solving fundamental calculation problems, especially in solving multiplication number operations.	SB Hulu Kelang students tend to emphasize their numeracy skills more than literacy because students like calculations because they are challenging.
3	Learning video media related to national insight includes regional dances and national songs as well as national obligatory songs for students in grades 1-6	SB Hulu Kelang students still need to learn more about regional dances, national songs, and national obligatory songs.	Students are increasingly active in singing the national anthem and the national obligatory song. They often sing this song between lessons and at the end of lessons. Moreover, students also learn regional dances. Students quickly understand the dance movements taught. In the learning process, several regional dances are taught. These include the creative dances Yamko Rambe Yamko, Bungong Jeumpa, and Cublak Cublak Suweng.

The analysis of the data presented in the tables provided compelling evidence that the problem-based learning method had a significant and positive impact on the learning abilities of the students at the SB Hulu Kelang (Gumartifa et al., 2023). This was evident from the noticeable changes in learning methods, achievements, and motivation levels among the students. The students displayed consistent enthusiasm for learning, which was particularly noticeable during the quiz competition held at the end of the meeting. This competition served as a benchmark for the success of the learning method and provided a practical measure of the

students' understanding and application of the learned concepts (Lehrl et al., 2014).



Figure 2. A Teacher and Students at Sanggar Bimbingan Hulu Kelang Actively Participate in Problem-Based Learning

The quiz scenario was thoughtfully designed to address problems in literacy, numeracy, and national insight, thereby

reflecting the program's objectives. The students at SB Hulu Kelang showed great enthusiasm in participating in these activities and programs. This enthusiasm was largely because the activities were packaged in an engaging and interesting manner, making learning fun and enjoyable (Friesen et al., 2014).

Moreover, the positive response from the students underscores the effectiveness of incorporating interactive and entertaining elements into educational activities. The quiz scenario not only served as a tool for assessing academic proficiency but also as a medium for instilling a sense of curiosity and excitement about learning. By creating an enjoyable atmosphere, the program aimed to break down traditional barriers to learning, making it more accessible and appealing to a diverse range of students.

The ultimate goal was to create a comfortable, enjoyable, and high-quality learning environment for the students at SB Hulu Kelang, thereby fostering a love for learning (Gumartifa et al., 2023). As evident from the students' enthusiastic participation, the incorporation of dynamic and enjoyable elements in educational programs contributes significantly to creating a positive learning culture. This love for learning, instilled through engaging activities, not only enhances academic performance but also prepares students with the motivation and mindset necessary for continuous learning throughout their lives.



Figure 3. Students at Sanggar Bimbingan Hulu Kelang Experiencing the Shift from Traditional Methods to the Interactive Problem-Based Learning model

In order to realize these activities and programs, strategic collaborations were established with programs and activities that support students' creativity and intuition. The program ingeniously combined quiz activities with art performances, providing a holistic learning experience that catered to both the academic and creative sides of the students. In addition to understanding literacy, numeracy, and national insight, students at the Upstream Guidance Studio were encouraged to develop their potential in non-academic fields, thereby ensuring a well-rounded development (Susperreguy et al., 2020).

The implementation of the problem-based learning method involved several stages, with the orientation of students towards the problem being a critical stage. This stage played a crucial role in determining the success of the problem-based learning method as it set the tone for the entire learning process (Ball et al., 2014). The problems addressed were those arising from the actual conditions faced by

the students, thereby ensuring the relevance and applicability of the learning. The teaching staff was responsible for creating a pleasant learning atmosphere and guiding the learning process based on the principles of problem-based learning (Gumartifa et al., 2023).

One of the unique characteristics of students at the Hulu Kelang guidance studio is their high level of curiosity. When faced with a problem, this curiosity drives the student to take an interest in solving it. As a result, students engage in critical thinking to identify and solve their problems, often without even realizing it (Melinda & Rahmawati, 2021). This natural curiosity and problem-solving ability of the students were effectively harnessed through the problem-based learning method, leading to enhanced learning outcomes (Azizah, Mumfaza, et al., 2023; Murray & Harrison, 2011).

Furthermore, it is noteworthy that the problem-based learning method not only fosters critical thinking and problem-solving skills but also promotes a sense of ownership and autonomy among students. As they delve into real-world problems, students at the Upstream Guidance Studio actively participate in their own learning journey, taking responsibility for the exploration and resolution of challenges. This student-centered approach contributes to the creation of a positive and empowering learning environment (Gumartifa et al., 2023; Hmelo-Silver, 2004). This aspect adds depth to the potential of the problem-based learning method in cultivating lifelong learners who are not only

academically proficient but also equipped with essential skills for navigating the complexities of the real world.

4. Conclusion

In general, the teaching staff at the Hulu Kelang Guidance Studio needs to optimize their learning methods. Currently, teachers often rely on the lecture method to deliver material, which can be challenging for students who are still in the concrete operational stage of cognitive development. This teacher-centered approach has led many students to perceive learning as complex, and it could be hindering the optimization of student learning outcomes.

One way to enhance students' learning processes and abilities is by selecting appropriate learning methods. The problem-based learning method is one such approach that could be beneficial. This method initiates learning with a problem that students must solve, ideally one that is contextual and related to their lives. This approach facilitates easier understanding and acceptance of the material. Students are encouraged to solve the problem by seeking information from various sources, thereby constructing their own knowledge and making learning more meaningful.

Teaching staff should consider implementing the problem-based learning method as an alternative in teaching mathematics. This would diversify the learning experience, make it more active, and potentially increase students' interest.

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