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Problem Based Learning

Maura Manalu, mauramanalu2005@gmail.com, *UIN Syahada Padangsidimpuan, Indonesia*

Melinda Syahputri Nasution, melindasyahputrinasution@gmail.com, *UIN Syahada Padangsidimpuan, Indonesia*

Abstract: *Problem-Based Learning (PBL) is a student-centered learning model that uses real-world problems as the starting point of the learning process. This model encourages students to think critically, analyze problems, collaborate with others, and find solutions either independently or in groups. This paper aims to examine the concept, theoretical foundations, characteristics, objectives, steps, advantages, disadvantages, as well as the challenges and solutions in implementing Problem-Based Learning. The method used is a literature review that analyzes various theories and expert opinions. The results show that PBL can improve higher-order thinking skills, problem-solving abilities, communication skills, collaboration, and students' learning independence. In addition, PBL helps students connect theoretical knowledge with real-life situations, making learning more meaningful and contextual. However, the implementation of PBL faces several challenges, such as time constraints, readiness of both teachers and students, uneven participation, limited learning resources, and the complexity of assessment.*
Therefore, careful planning, appropriate problem selection, and strong teacher competence as facilitators are required to ensure effective and optimal implementation of PBL.

Keywords: *Problem-Based Learning; characteristics; objectives; steps; advantages.*

INTRODUCTION

Education in the 21st century demands innovation in the learning process to equip students with critical thinking, creativity, communication, and collaboration skills. Learning is no longer teacher-centered, but must provide broad opportunities for students to actively construct their own knowledge (Hmelo-Silver, 2004). One learning model that aligns with these demands is Problem-Based Learning (PBL).

Problem-Based Learning is a learning model that uses real-world problems as the foundation or trigger of the learning process. Through this model, students are encouraged to engage actively in learning activities that are meaningful and contextual.

In PBL, students are guided to identify problems, gather relevant information, analyze various possible solutions, and present their findings in a systematic way. This process helps learners become more independent and responsible for their own learning.

Thus, students not only acquire knowledge but also develop higher-order thinking skills and collaboration abilities (Suyadi, 2015). The learning process becomes more dynamic and student-centered.

PBL is grounded in constructivist theory, which emphasizes that knowledge is actively constructed by learners through meaningful learning experiences. Students build understanding based on their interaction with problems and their environment.

In addition, social learning theory highlights the importance of interaction and collaboration in the learning process. Through discussion and teamwork, students are able to develop deeper understanding and shared knowledge.

Therefore, PBL becomes an effective approach in creating meaningful learning that is closely related to real-life situations (Mulyasa, 2015). Learning is no longer abstract but directly connected to students' everyday experiences.

In its implementation, PBL offers various benefits such as increasing learning motivation, improving communication skills, and preparing students to face real-world challenges. It also encourages active participation and independent learning.

However, the implementation of PBL is not without challenges. Some of the obstacles include limited instructional time, the readiness of both teachers and students, and the complexity of the learning assessment process (Shoimin, n.d.). Despite these challenges, PBL remains a promising learning model that can improve the quality of education. It requires careful planning and proper instructional design to be effective.

Based on these considerations, the study of Problem-Based Learning is important to understand its concepts, characteristics, objectives, steps, and implementation challenges (Sugiyono, 2019). Through a comprehensive understanding, educators are expected to implement PBL effectively in order to enhance both the learning process and learning outcomes (Trianto, 2014).

METHODS

This study uses a qualitative research method with a descriptive approach. The qualitative approach was chosen because it aims to deeply understand and describe the implementation of the Problem-Based Learning (PBL) model, including the obstacles, challenges, and solutions applied during the learning process. Through this approach, the researcher is able to obtain a comprehensive picture of the experiences and perspectives of both teachers and students regarding the implementation of PBL.

The subjects of the study consist of teachers and students who are involved in learning activities using the Problem-Based Learning model. The selection of participants was carried out using a purposive sampling technique, based on the consideration that they have relevant experience and understanding related to the focus of the research.

Data collection in this study involved several techniques. Observation was used to directly examine the PBL learning process in the classroom. Interviews were conducted with teachers and students to gather information regarding their experiences, challenges, and perceived benefits during the implementation of PBL.

In addition, documentation was used to complement the data in the form of lesson plans, students' work results, activity photographs, and other relevant supporting documents. These multiple sources of data helped to enrich the findings of the study.

Data analysis was carried out using an interactive model consisting of three stages: data reduction, data display, and conclusion drawing. Data reduction was performed by selecting and focusing on information relevant to the research objectives.

Data display was presented in the form of descriptive narratives to facilitate understanding of the research findings. After that, conclusions were drawn based on patterns, themes, and relationships identified throughout the data analysis process.

To ensure the validity of the data, this study employed source triangulation and technique triangulation. Source triangulation was conducted by comparing information obtained from teachers and students.

Meanwhile, technique triangulation was carried out by comparing the results of observations, interviews, and documentation. Through this process, the data obtained is expected to have a high level of validity and credibility.

Through this descriptive qualitative research method, it is expected that a deep understanding of the implementation of Problem-Based Learning (PBL) can be achieved, so that the research results can serve as evaluation material and recommendations for improving the quality of learning in schools.

RESULTS & DISCUSSION

Definition of Problem-Based Learning

Problem-Based Learning (PBL) is a learning model whose term consists of three words: *Problem*, meaning an issue or challenge; *Based*, meaning grounded or founded on something; and *Learning*, meaning the process of acquiring knowledge. Literally, PBL can be understood as a learning process that is initiated by a problem as the starting point of instruction.

In a terminological sense, Problem-Based Learning is an instructional approach in which students are actively confronted with complex, real-world problems that encourage them to investigate, collaborate, and develop problem-solving skills (Arends, 2012). It is also described as a student-centered interactive learning model in which authentic problems serve as triggers for acquiring new

knowledge and skills.

Thus, PBL is a student-centered learning model that places real-world problems at the beginning of the learning process. Students are encouraged to think critically, analyze situations, seek relevant information, and develop solutions either independently or collaboratively. This model emphasizes not only the final learning outcomes but also the learning process itself, which allows students to become more active and responsible learners (Rusman, 2017).

According to educational experts, Arends explains that PBL presents authentic problems that enable students to construct their own knowledge. Similarly, Hmelo-Silver emphasizes that PBL supports learning through the experience of solving complex and meaningful problems (Shoimin, 2014).

Problem-Based Learning is grounded in several educational theories. Constructivist theory proposed by Piaget states that knowledge is actively constructed by learners through their experiences. Social learning theory from Vygotsky highlights that learning occurs through interaction and collaboration with others. In addition, active learning theory emphasizes that students must be actively involved in the learning process in order to achieve meaningful understanding (Hamalik, 2014). These theoretical foundations collectively support the idea that learning becomes more effective when students actively construct knowledge rather than passively receive it.

One of the main characteristics of PBL is student-centered learning. In this model, students play the central role in the learning process, while teachers act as facilitators and guides. Students are given opportunities to explore information, analyze problems, ask questions, and develop solutions independently or in groups (Trianto, 2014). This approach helps students develop independence, responsibility, as well as critical and creative thinking skills.

Another important characteristic of PBL is the use of real-world problems as the foundation of learning. Learning always begins with authentic problems that are closely related to students' daily lives. These problems function as triggers that stimulate curiosity and motivate students to learn. For instance, in Islamic Education, teachers may present issues related to low social awareness in society and ask students to propose solutions based on Islamic values. This approach makes learning more meaningful and increases student engagement.

PBL also emphasizes problem-solving skills as a core learning outcome. Students are trained to identify problems, gather information, analyze data, generate alternative solutions, select the most appropriate solution, and evaluate the results. This structured process helps students develop Higher Order Thinking Skills (HOTS), logical reasoning, and decision-making abilities, all of which are essential for real-life challenges.

In addition, PBL strongly promotes collaborative learning. Students work in groups to discuss problems, share information, and develop solutions together. Through this process, they learn how to communicate effectively, respect different opinions, and build teamwork skills. Collaboration also fosters tolerance and social awareness among learners.

In PBL, the teacher plays the role of a facilitator rather than the main source of knowledge. The teacher guides students throughout the learning process by

presenting problems, providing direction, motivating learners, and facilitating discussions without directly giving answers. This role helps students become more active and confident in their learning process (Ardianti, Sujarwanto, & Surahman, 2022).

The main objectives of Problem-Based Learning are to support students in acquiring knowledge while simultaneously developing essential skills needed in real life. One of its primary goals is to enhance critical thinking skills by encouraging students to analyze problems, evaluate information, and make decisions based on evidence and logical reasoning.

PBL also aims to improve problem-solving abilities by training students to address real-life issues systematically and creatively. Through this process, learners develop the ability to think logically and independently in finding effective solutions.

Another important objective is to foster independent learning. Students are encouraged to take responsibility for their own learning process by actively seeking information and constructing knowledge without relying entirely on the teacher.

Furthermore, PBL enhances teamwork skills by engaging students in collaborative activities. They learn how to work together, respect diverse perspectives, and communicate effectively in group settings. This also strengthens their interpersonal and social skills.

PBL contributes significantly to improving communication skills, as students are required to present ideas, explain findings, and discuss solutions both orally and in written form. This strengthens their ability to express thoughts clearly and confidently.

Another key objective of PBL is to connect theoretical knowledge with real-life situations. This helps students understand the relevance of what they learn in school to everyday life, making the learning process more meaningful and applicable.

PBL also fosters creativity and innovation by encouraging students to generate multiple solutions to a given problem. This process helps them develop flexible thinking and openness to new ideas.

Ultimately, Problem-Based Learning prepares students for the challenges of the 21st century by equipping them with critical thinking, creativity, communication, collaboration, and problem-solving skills that are essential in an ever-changing global environment.

The implementation of PBL follows a structured learning process. It begins with problem orientation, where the teacher presents a relevant and meaningful problem related to the learning material (Cindy E., 2004). This stage aims to stimulate students' curiosity and engagement.

The next stage involves organizing students into groups, where they work collaboratively to discuss and understand the problem from different perspectives. This is followed by guiding investigation, during which students gather information from various sources to deepen their understanding of the issue.

After that, students develop and present their solutions in front of the class. This stage allows them to communicate their findings and receive feedback from peers and the teacher. Finally, evaluation and reflection are conducted collaboratively to assess both the learning process and outcomes, enabling students

and teachers to improve future learning experiences (Piaget, 1972).

Advantages of Problem-Based Learning

Problem-Based Learning (PBL) is a student-centered learning model that uses real-world problems as the foundation of the learning process. This model offers various advantages that can significantly improve both the learning process and learning outcomes of students.

One of the main advantages of PBL is its ability to enhance critical thinking skills. Students are encouraged to analyze problems, identify causes, gather relevant information, and evaluate various possible solutions. This process helps learners develop logical and reflective thinking skills when dealing with complex situations.

PBL also trains students' problem-solving abilities. Through direct engagement with real-life problems, students become accustomed to facing challenges and finding appropriate solutions in a systematic and effective way. This experience prepares them for real-world situations beyond the classroom.

Another advantage of PBL is that it increases students' learning motivation. Because the problems used in learning are closely related to everyday life, students find the learning process more meaningful, engaging, and relevant. This relevance encourages greater interest and enthusiasm in learning activities.

PBL also fosters independent learning. Students are required to seek information and learning resources on their own, which encourages them to take responsibility for their own learning process. As a result, students become more self-directed and proactive in acquiring knowledge.

In addition, PBL enhances collaboration skills. Since learning is generally conducted in groups, students learn how to work together, share responsibilities, respect different opinions, and build effective communication within the group to achieve common goals.

Another important advantage of PBL is the development of communication skills. Throughout the learning process, students actively participate in discussions, express their ideas, ask questions, and present group findings. These activities improve both oral and written communication abilities.

PBL also contributes to a deeper understanding of learning materials. Because students discover concepts through investigation and problem-solving activities, the knowledge they acquire becomes more meaningful and long-lasting compared to traditional memorization-based learning.

Furthermore, PBL helps students develop creativity. When facing problems, students are encouraged to think of various possible solutions rather than relying on a single answer. This process stimulates innovative and flexible thinking.

PBL also improves students' decision-making skills. By evaluating different alternatives and selecting the most appropriate solution, students learn how to make rational and well-considered decisions based on evidence and logical reasoning.

Another advantage is the development of responsibility and discipline. Students must actively participate in group activities, complete assigned tasks, and contribute to problem-solving processes, which helps build a strong sense of responsibility.

PBL also prepares students for real-life challenges by equipping them with essential 21st-century skills such as critical thinking, collaboration, communication, and creativity. These skills are highly important in academic, professional, and social contexts.

Overall, Problem-Based Learning is an effective instructional model that not only improves cognitive abilities but also develops essential soft skills. Its advantages make it a powerful approach for creating meaningful, engaging, and student-centered learning experiences.

Disadvantages of Problem-Based Learning

Although Problem-Based Learning (PBL) has many advantages in improving students' critical thinking, creativity, and problem-solving skills, this learning model also has several limitations that need to be considered by educators.

One of the main disadvantages of PBL is that it requires a longer learning time compared to conventional teaching methods. In PBL, students are not simply passive recipients of information from the teacher, but must go through several stages such as identifying problems, gathering information, discussing ideas, analyzing data, developing solutions, and presenting their findings.

These stages require a considerable amount of time, making it challenging to implement when instructional time is limited. In addition, teachers must provide opportunities for each group to discuss and present their work. If not managed properly, the learning objectives may not be fully achieved due to time constraints.

For example, in Islamic Education lessons on adolescent morality, students need to observe real-life problems in their environment, search for relevant religious evidence, discuss possible solutions, and present their results. All of these activities require significantly more time compared to traditional lecture-based teaching.

Another limitation of PBL is that it requires thorough preparation from teachers. In this model, teachers play an important role as designers and facilitators of learning. Therefore, they must carefully prepare learning activities compared to conventional teaching methods.

Teachers must be able to select problems that are relevant to the subject matter, appropriate to students' cognitive level, and capable of stimulating curiosity. In addition, they must prepare learning resources, instructional media, assessment instruments, and appropriate guidance strategies during the learning process.

If teachers do not fully understand the concept of PBL or fail to prepare properly, the learning process may become unstructured. As a result, students may struggle to understand the learning objectives, and the expected outcomes may not be achieved optimally.

Another limitation is that not all subject matter is suitable for PBL. PBL is more effective when applied to topics that involve problem-solving, case analysis, or real-life situations. However, some learning materials are conceptual, theoretical, or require foundational understanding first, making them less suitable for direct application of PBL.

In such cases, other teaching methods such as lectures, demonstrations, or direct instruction may be more effective. For example, learning the rules of Tajweed

in reading the قرآن (Qur'an) is often better introduced through demonstration and guided practice before students engage in problem-solving activities.

If all learning materials are forced into a PBL approach, students may become confused and learning outcomes may decline. Therefore, teachers must carefully select appropriate instructional models based on the characteristics of the subject matter.

Another challenge of PBL is that it requires relatively high-level thinking skills from students. PBL demands that students actively think, analyze, evaluate, and generate solutions to problems. These processes involve Higher Order Thinking Skills (HOTS) (Rusman, 2017).

As a result, students with lower academic readiness may struggle to adapt to this learning model, especially at the beginning of its implementation.

Overall, although Problem-Based Learning is an effective and modern instructional approach, its limitations highlight the importance of careful planning, teacher readiness, time management, and appropriate selection of learning materials to ensure successful implementation.

Challenges and Solutions in Problem-Based Learning

One of the common challenges in implementing Problem-Based Learning (PBL) is that students are not yet familiar with this learning model. Many students are accustomed to conventional teaching methods in which the teacher is the main source of information. When they are introduced to PBL, they often feel confused, passive, or less confident in participating in learning activities.

To address this issue, teachers need to clearly explain the concept and stages of PBL before implementation. Gradual habituation is also necessary so that students can adapt step by step to this learning model (Sanjaya, 2016). In addition, teachers can provide simple examples before moving on to more complex problems so that students can better understand the process.

Another challenge is that PBL requires a longer learning time. The stages of identifying problems, discussing, searching for information, and formulating solutions take more time compared to traditional teaching methods.

To overcome this, teachers should manage time effectively by carefully planning each learning session. The problems selected should match the available instructional time. Some stages of learning can also be assigned as out-of-class tasks to maximize classroom efficiency.

A further challenge is that teachers may find it difficult to shift their role from the main source of knowledge to a facilitator. This change in role is often not easy and requires adjustment in teaching practice (Silberman, 2013).

The solution is for teachers to participate in training or workshops related to PBL implementation. They also need to improve their ability to guide discussions and practice using guiding or probing questions to support student thinking (Trianto, 2011).

Another issue is unequal participation among students in group work. In many cases, some students are highly active, while others tend to remain passive and rely on their peers.

To solve this problem, teachers should assign clear roles and responsibilities

to each group member. Both individual and group assessments should be applied to ensure accountability. Teachers also need to monitor student involvement throughout the learning process.

Limited learning resources can also become a barrier in implementing PBL. Not all schools have adequate facilities or access to information resources that support inquiry-based learning. To address this limitation, teachers can utilize available resources in the surrounding environment as learning materials. In addition, technology such as the internet and digital libraries can be used to enrich learning resources. Teachers may also provide additional references to support student learning.

Assessment in PBL is another challenge because evaluating both the process and learning outcomes is more complex than traditional assessment methods.

The solution is to use clear and well-structured assessment rubrics. Teachers should assess not only the final product but also the learning process, collaboration, and presentation skills. Self-assessment and peer assessment can also be included to provide a more comprehensive evaluation. Another challenge is the inappropriate selection of problems. Problems that are too difficult or too easy can reduce the effectiveness of learning and student engagement.

To overcome this, teachers must select problems that are relevant to students' real-life experiences and match their cognitive level. The problems should also be aligned with learning objectives to ensure meaningful learning outcomes (Trianto, 2010). Overall, although Problem-Based Learning presents several challenges, these can be effectively managed through proper planning, teacher readiness, appropriate strategies, and continuous improvement in instructional practice.

CONCLUSION

Problem-Based Learning (PBL) is a student-centered learning model that uses real-world problems as the foundation of the learning process. Through PBL, students not only acquire knowledge but also develop critical, analytical, and creative thinking skills, as well as collaboration and problem-solving abilities. This model is grounded in constructivist theory, social learning theory, and active learning theory, which emphasize that knowledge is constructed through experience, interaction, and active student engagement.

PBL has several key characteristics, including a student-centered approach, the use of authentic problems, an emphasis on group work, and the teacher's role as a facilitator. The implementation steps of PBL begin with problem orientation, followed by student organization, investigation, presentation of results, and evaluation. Through these stages, PBL creates a learning process that is more meaningful, engaging, and relevant to real-life situations.

Although PBL offers many advantages, such as improving learning motivation, higher-order thinking skills, and communication abilities, it also presents several challenges. These include the longer time required for implementation, limited learning resources, and the complexity of assessment.

However, these challenges can be overcome through careful planning, improving teacher competence, selecting appropriate problems, and applying comprehensive assessment strategies.

Overall, Problem-Based Learning is an effective instructional model for preparing students to face the challenges of the 21st century. When implemented

properly, PBL can help students become independent, active, innovative learners who are capable of solving various problems in both daily life and future professional contexts.

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