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# COMPARISON OF LEARNING OUTCOMES USING PROJECT-BASED LEARNING MODEL VERSUS CONVENTIONAL LEARNING IN ELEMENTARY SCHOOL

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**Abstract**

This observation aims to compare learning outcomes among students who apply the Project-Based Learning (PJBL) Model with those who learn through conventional means in elementary schools. The research method utilized the literature study method. The findings indicated that students who learned through the PjBL model generally achieved better learning outcomes in terms of critical thinking, creativity and problem-solving skills. The PjBL model also appeared to increase students' motivation and enthusiasm for learning as they were more engaged in relevant and interesting projects. In addition, PjBL facilitates the development of better social skills and teamwork through collaboration and interaction among students in project groups. Nevertheless, this study also found some challenges in implementing PjBL in primary schools, such as the need for more thorough preparation, longer implementation duration, and the need for special training for teachers. Therefore, in order to maximize learning outcomes, it is suggested that a wise mix of PjBL and conventional learning models is needed in accordance with educational objectives and students' needs.

**Keywords**: Learning Outcomes, Project-Based Learning Model, Conventional, Elementary School.

## Introduction

Education is one of the important factors in shaping a person's character and abilities, especially at the elementary school level which is the main foundation for further development. (Sitopu et al., 2024); (Guna et al., 2024). Therefore, the learning methods and models applied in schools determine student learning outcomes. In order to improve the quality of education, various learning models continue to be developed and implemented, one of which is the project-based learning (PBL) model. (Hairiyanto et al., 2024)..

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The project-based learning model is a learning approach that makes projects the centerpiece of the teaching and learning process. In this model, students are invited to actively participate in designing, implementing, and evaluating projects related to the subject matter. (Qomalasari et al., 2023).. PBL aims to improve students' critical thinking skills, problem solving, and cooperation skills. In addition, PBL also encourages students to become more responsible for their own learning and engages them in real-world contexts. (Acoci, 2023).

On the other hand, conventional learning models are still widely used in elementary schools. This model is more focused on lectures, memorization, and the delivery of information from teacher to student. Although this method has been used for a long time and has the advantage of systematic and structured presentation of material, it is often less able to adjust to the individual needs of students and limits their creativity and active participation. (Oktaviani & Lena, 2022)..

Learning methods play an important role in basic education because the right methods can build a solid foundation for children's cognitive, emotional and social development. By applying methods in accordance with the characteristics and needs of children, the teaching and learning process can be more effective and enjoyable, thus increasing motivation and enthusiasm for learning. (Aprilianti et al., 2023).. In addition, varied and innovative methods can encourage critical thinking, creativity, and cooperation among learners, all of which are important skills for their future success. Finally, good learning methods support the achievement of holistic and comprehensive educational goals. (Saputra et al., 2021).

The project-based learning model can have a positive impact on student learning outcomes, including the improvement of 21st century skills such as critical thinking, collaboration and communication. However, the implementation of PBL requires careful planning, infrastructure support, and readiness from teachers and students themselves. This causes the implementation of PBL to be uneven in all elementary schools (Djaga et al., 2022)..

In Indonesia, the challenges in education are increasingly complex with the demand to produce graduates who are competent and ready to face the era of globalization. For this reason, an effective learning model that is relevant to the needs of the times is needed. (Marlina & Rahmah, 2023); (Syamsuriyanti & Amalia, 2022). The question that arises is, is the project-based learning model more effective than conventional learning models in improving student learning outcomes in elementary schools?

This study aims to explore and compare the learning outcomes of students who use a project-based learning model with students who apply a conventional learning model. This research is expected to provide an in-depth understanding of the advantages and disadvantages of each model in the context of learning in elementary schools.

The choice of these two learning models is motivated by fundamental differences in approach, interaction, and expected outcomes. Project-based learning

emphasizes the process and the final product produced by students, while conventional learning focuses more on the material taught and testing as the main evaluation tool.

## Research Methods

The study conducted in this research uses the literature research method, which is an approach used to collect and analyze information that has been published in the existing literature. The aim is to gain a comprehensive understanding of a particular topic based on existing sources. (Firman, 2018); (Suyitno, 2021); (Jelahut, 2022).

## Results and Discussion

### Definition and Theory of Learning

Learning is a complex and ongoing process by which an individual acquires, renews, and expands knowledge, skills, attitudes, and values through experience, formal education, social interaction, and self-reflection. This process not only involves gathering information, but also understanding, applying, analyzing, synthesizing, and evaluating that knowledge. (Tubagus et al., 2023); (Aslan & Shiong, 2023); (Nurdiana et al., 2023). Learning also includes cognitive, emotional, and social aspects, which interact to develop an individual's full potential. Ultimately, learning results in positive changes in behavior and abilities that enable a person to adapt and contribute effectively to their environment. (Sarmila et al., 2023); (Haddar et al., 2023).

Learning outcomes are a reflection of the abilities and skills that an individual has acquired as a result of the learning process. Learning outcomes include conceptual understanding, analytical skills, practical skills, as well as attitudes and values possessed by students after going through various learning activities. Learning outcomes are not only limited to mastery of academic material, but also include affective aspects such as character development, moral values, and social skills. (Tuhuteru et al., 2023); (Astuti et al., 2023). Measurement of learning outcomes is usually done through various evaluation methods, such as written tests, project assessments, observation, and self-reflection to assess the extent to which learning objectives have been achieved.

In more detail, learning outcomes play an important role in identifying the effectiveness of learning methods, curriculum, and teaching strategies used by educators. Positive results indicate that the learning approach applied is effective in improving the competence of students, while unsatisfactory results can be an indicator of the need for adjustments and improvements in the teaching process. (Rambe et al., 2023).. In addition, learning outcomes help map individual development, provide constructive feedback, and design appropriate interventions to support the achievement of optimal learning outcomes. In other words, learning outcomes not only serve as a measure of individual success, but also as a diagnostic tool for the improvement and development of the education system as a whole. (Kurniawan & Latifatunnisa, 2024).

**Conventional Learning Model**

Conventional learning is a traditional teaching method that is generally oriented towards face-to-face interaction between teachers as facilitators and students as recipients of information in the classroom. This method tends to be one-way and direct, where the teacher acts as the main source of delivering lesson content while students are in a passive position who receive learning material through exposure to lectures, textbook readings, and practice questions. (Darmiyati & Novitawati, 2023).. Conventional learning often uses a strict framework and is limited to the physical classroom, with assessments measured through standardized tests such as end-of-semester exams and quizzes. This method has a long history of use in education and is still widely applied especially in formal learning contexts such as primary and secondary education. (Riskyka et al., 2023)..

The characteristics of conventional learning include several key aspects. First, the curriculum is systematically structured and delivered by the teacher who is regarded as the ultimate authority on knowledge. Second, teaching methods tend to emphasize memorization and mastery of facts over critical and analytical thinking. Third, the interaction between teachers and students is limited, with students having little opportunity to actively participate or cooperate in the learning process. Fourth, the classroom layout is designed to support a one-way model with benches usually facing the blackboard or the teacher. Finally, assessment in conventional learning is often summative, where the emphasis is more on the end result than the learning process itself. (Solehudin & Rochmiyati, 2023)..

Conventional learning provides some important advantages that still make it relevant in today's educational era. One of the advantages is its well-structured and clear structure, making it easier for teachers to deliver material in a systematic and well-planned manner. By using a predetermined syllabus and standardized curriculum, conventional learning ensures that all students receive similar information and have a consistent knowledge base. (Aziz & Astuti, 2023). In addition, this model allows teachers to easily monitor and control the course of the teaching-learning process, thus providing the discipline and order needed in a learning environment. Face-to-face interaction also allows for immediate correction and quick feedback from the teacher, which can help students understand the material better. (Puspita & Tirtoni, 2023)..

However, conventional learning also has some drawbacks. One of the disadvantages is the lack of flexibility in accommodating students' various learning styles. This method tends to be more effective for students who can learn well through lectures and memorization, but less effective for students who need a more interactive, visual, or kinesthetic approach to learning. (Wardina & Wulandari, 2023).. In addition, conventional learning often does not encourage active student participation and collaboration between students, which can hinder the development of social and critical thinking skills. Another limitation is the lack of time and space for more in-depth exploration of topics of interest to students, as well as the limited use of technology

and digital resources that can support a more dynamic learning process that is relevant to the demands of today's world. (Sari, 2021).

Conventional teaching methods have long been used in various educational institutions to deliver various learning materials to students. Although it provides an organized and systematic framework for delivering lessons, this approach is not fully flexible to accommodate students' various learning styles. (Hamidah & Liansari, 2024).. Teachers can easily provide feedback on students' work, but students' direct involvement in the discussion and exploration process is often limited. The current digital era has enabled the use of more varied and interactive learning technologies, which have not been fully utilized by conventional teaching methods. (Safitri, 2023). Therefore, educators need to evaluate when and how these conventional approaches can be adapted or combined with other approaches to create a more optimal learning environment for the development of learners from various backgrounds.

**Project Based Learning (PBL) Model**

Problem-based learning allows students to understand concepts through the experience of solving real problems. Teachers introduce complex situations that require in-depth analysis and creative solutions from students. They work independently or collaborate in groups to identify multiple perspectives on the problem, explore relevant resources, and develop new approaches to address the challenge at hand. Through the process, students can develop critical thinking, problem-solving, and teamwork skills-important skills for their future. (Katuuk & Tarusu, 2024).

Problem-based learning emphasizes the role of students as the center of learning. The teacher guides them to discover their own knowledge through independent investigation and group discussion. Students learn from the experience of solving a variety of real problems using available resources, then reflecting on their processes and results. (Turyati et al., 2020). Evaluation focuses on student performance in demonstrating the understanding and skills developed through this approach. In this way, problem-based learning prepares students to face various future challenges more wisely and creatively. (Makrumah, 2023).

Problem-based learning (PBM) in basic education consists of a series of structured steps to facilitate student learning. The initial stage is the orientation of students to the problem, where the teacher introduces the problem to be solved and stimulates students' interest in the topic (Hutasoit et al., 2023).. Furthermore, students enter the stage of organizing learning tasks by discussing and dividing roles in groups. In the independent and joint investigation stage, students gather relevant information, collect data, and develop hypotheses or solutions. Then, they proceed to the solution development and presentation stage, where solutions are evaluated and delivered either in the form of presentations or written reports. The final stage is reflection and evaluation, where students and teachers reflect on the learning process, evaluate the effectiveness of the solution, and discuss what has been learned and what skills have been developed throughout the process. (Siswadi et al., 2024)..

In implementing PBM in basic education, the teacher's role is crucial as a facilitator who monitors and supports the learning process. The teacher must ensure that the problems given are appropriate to the students' level of understanding and ability, and provide timely guidance while encouraging students to think independently. (Arthadewi et al., 2024).. In addition, it is important to create a collaborative and supportive classroom environment, where students feel comfortable to share ideas and work together. The use of technology and multimedia resources can also enrich the learning process and make it easier for students to access information. By building critical thinking and problem-solving skills early on, PBM is able to prepare basic students to face challenges at higher levels of education and in everyday life. (Salam et al., 2022).

The Problem-Based Learning (PBM) model has many significant advantages in the educational context. One of the advantages is that it improves students' critical thinking and problem-solving skills. By facing real complex problems, students are trained to analyze situations, develop hypotheses, and find effective solutions. (Indri et al., 2022).. PBM also encourages students to work in groups, honing collaboration and communication skills that are indispensable in real life. In addition, this approach makes learning more relevant and meaningful, as students can see the direct application of the concepts they learn in everyday life. This can significantly increase student engagement and motivation to learn, compared to traditional teaching methods which tend to be more passive. (Lestari et al., 2023).

While PBM has many advantages, it also has some disadvantages that need to be considered. One of the main disadvantages is that it requires more time and resources than traditional methods. Effective implementation of PBM requires careful planning and preparation by teachers, as well as adequate support facilities such as access to information sources and technology. (Rostikawati et al., 2024)..  In addition, students who are not familiar with this approach may feel confused or have difficulty in organizing independent learning and working in groups. This could cause frustration and affect their performance. It is important for teachers to give proper guidance and provide support that helps students in the process of transitioning to a more active and independent learning mode. Without adequate support and supervision, the objectives of PBM may not be achieved optimally. (Makrifah & Fauzi, 2024).

In conclusion, Problem-Based Learning (PBL) provides many benefits, including improving students' critical thinking skills, problem-solving abilities and collaboration skills, and making learning more relevant and meaningful. However, it also has disadvantages, such as the need for more time and resources and possible initial difficulties for students who are unfamiliar with the approach. Therefore, implementing PBL requires careful preparation and adequate guidance from teachers to ensure that learners gain maximum benefit from this learning method.

**The difference in learning outcomes between students who use the PBL model and conventional learning**

Problem-based learning (PBL) models and conventional methods have mixed impacts on learners' learning achievement. Learners who follow PBL learning tend to show significant improvement in critical thinking and problem-solving skills. In PBL, learners are invited to analyze complex cases in depth, develop hypotheses, search for various solutions, and evaluate the results. The process forms a more analytical mindset than the conventional way that emphasizes memorization and passive acceptance of information. (Asa, 2020).

Furthermore, learners who learn in PBL usually have higher motivation and engagement in learning activities. PBL allows learners to actively participate and experience the practical relevance of the material learned. This situation encourages their interest and curiosity, which in turn increases the absorption of the material. Conventional learning, on the other hand, often lacks space for learners to explore and experience direct application of theoretical concepts, which can lead to boredom and decreased motivation (Rahayu, 2020). (Rahayu, 2020).

In addition, the social and collaborative skills of learners who follow PBL also tend to be more developed. In PBL, learners often work in groups to solve problems together, share tasks, and support each other. This trains them to communicate effectively, negotiate and cooperate with others. In contrast, conventional learning emphasizes more on individual work and instruction from the teacher, which may lack the ability to work together and group dynamics. (Rahmawati, 2020).

Nonetheless, there are certain challenges in implementing the PBL model that need to be considered. As mentioned, the implementation of PBL requires more preparation and time from both teachers and learners. This difference arises because PBL has a more flexible pattern than conventional methods that have long been applied and are more structured. (Novendra & Taufina, 2020).. In addition, students who are accustomed to conventional learning may need adaptation to adjust to the new learning style in PBL, which may affect their learning achievement in the short term. (Khusna et al., 2023)..

Overall, the Problem-Based Learning (PBL) model and conventional methods offer different outcomes for learners. PBL can improve learners' critical thinking, participation and collaboration skills more effectively than conventional learning. However, PBL also demands greater preparation, duration, and adaptation from teachers and learners. Therefore, the choice between PBL and conventional methods should be adjusted to the learning objectives, learners' characteristics, and available facilities.

**Conclusion**

Research on comparing learning outcomes using the Project-Based Learning (PjBL) model versus conventional teaching in elementary schools yielded several important findings. First, students who learn using the PjBL model tend to achieve more

satisfactory learning outcomes in several aspects, particularly in critical thinking skills, creativity, and problem-solving ability. This is because PjBL allows students to engage directly in projects that require them to seek information, make decisions and solve problems in a real environment.

Second, the PjBL model is proven to increase students' motivation and enthusiasm for learning. By working on relevant and interesting projects, students are more motivated to learn independently and understand the material in depth. In contrast to conventional teaching which is dominated by teacher lectures and sometimes less interesting activities, PjBL creates a more dynamic and student-focused learning environment. This helps students to feel more responsible for their own learning process and outcomes.

Third, PjBL also encourages the development of better social and teamwork skills. In PjBL, students often work in groups to complete projects together, which hones their ability to communicate, collaborate and resolve conflicts. This provides them with learning experiences that are not only useful for academics, but also for personal development and life skills. Meanwhile, conventional teaching tends to be more individualistic with an emphasis on content mastery, and less opportunity for meaningful social interaction.

However, there are some challenges in implementing PjBL in elementary schools. One of them is the need for greater preparation and cost so that the implementation process can be more demanding for both teachers and students. Teachers need adequate training to design, manage and guide learning projects to be effective. In addition, the time required for each project may be longer than with conventional delivery. There is also the adjustment factor, where students and teachers who are used to conventional methods may need time to adapt to this new approach.

Overall, Project-Based Learning (PBL) shows superiority over conventional teaching in improving student learning outcomes in primary schools, particularly in critical thinking skills, creativity, learning motivation and social skills. However, the implementation of PjBL is also faced with challenges such as the need for more preparation and longer implementation time. Therefore, choosing between PjBL and conventional teaching should consider the educational objectives, students' needs, as well as the resources available in the school. Integrating both methods wisely can optimize students' learning process and outcomes in primary schools.

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