International Journal of Educational Research Excellence (IJERE)
https://ejournal.ipinternasional.com/index.php/ijere
Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

Improving Student Learning Outcomes Using the Project-Based Learning (PJBL) Model at SDN 064034

Dinda Renita Br Taringan[1], Agung Evansiyus Saragih[2], Ahmad Laut Hasibuan[3*]
[1,2,3] Pendidikan Profesi Guru, Universitas Muslim Nusantara Al-Washliyah, Indonesia
Corresponding Authors: ahmadlauthsb@umnaw.ac.id
Article history: received June 17, 2025; revised June 30, 2025; accepted July 25, 2025

ABSTRACT

This research arises from an awareness of the crucial role education plays in shaping individuals capable of leading better lives and achieving their life goals in alignment with their true purpose. Education is expected to cultivate a generation that excels, can adapt to rapid technological advancements, and enhances learning outcomesparticularly in conceptual understanding, critical thinking, and creativity. The aim of this study is to explore and evaluate the effectiveness of the Project-Based Learning (PjBL) model in improving student learning outcomes at SDN 064034, as a measure of the success of the educational process. However, observations in the field indicate that many students have yet to achieve optimal learning outcomes, largely due to unengaging teaching methods and limited student involvement. As a response, project-based learning is introduced as a strategy to foster active student participation and nurture creativity. Creativity itself is a vital component of both education and modern life, as creative individuals are key to navigating challenges and continuous environmental change.

Keywords: *Improvingt, Learning Outcomes, Pjbl Model, SDN 064034*

I. INTRODUCTION

Education plays a crucial role in guiding humans towards a better life and achieving life goals in accordance with the essence of their existence. Through education, superior individuals will emerge who are able to adapt to increasingly rapid technological advances (Wahyu Raharjo, 2016). In the educational context, teachers function as guides, helping students move from ignorance to understanding. The success of the educational process is influenced by various factors, one of which is the extent to which teachers are prepared to design quality learning for students. The quality of education can be seen from two main aspects: the quality of the learning process and the quality of the outcomes achieved (Taula, Roana, and Angreni Siska, 2018).

To address these issues, educators are required to implement learning models designed to increase student participation and comprehensive understanding. One model that has proven effective is Project-Based Learning (PjBL), which emphasizes the learning process through projects related to real-life situations. Thus, students not only learn theory but also can apply it directly in practice (Prasetya, B., and Wahyuni, R. 2024).

In general, education plays a vital role in shaping human character (Silvia and Bahri, 2022). Implemented educational reform efforts emphasize that education must have a future-oriented plan and vision to ensure every individual's right to optimally develop their full potential, skills, and achievements, which will ultimately support progress and well-being.

With current developments in education, teachers are expected to be more creative and flexible in adapting learning methods. They are required to create an effective, enjoyable

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

learning environment that enhances student understanding. One approach that can be used is the Project-Based Learning (PjBL) model, which focuses on collaborative problem-solving through collaboration (Richard Adony Natty, 2017).

The implementation of the PjBL model in public elementary schools (SDN) is expected to improve student learning outcomes, particularly in conceptual understanding, critical thinking skills, and creativity. This study aims to examine and analyze efforts to improve student learning outcomes through the implementation of the Project-Based Learning (PjBL) model in SDN as an indicator of the success of the learning process. However, many students still fail to achieve optimal learning outcomes because the learning methods used are less engaging and lack direct, active student participation (Wulandari, E. 2021).

Through project-based learning, students are encouraged to be more active and creative. Creativity is a crucial aspect of education and life in today's era. Creative individuals are essential to address the challenges and needs of a constantly changing environment. Every student inherently possesses creative potential, as evidenced by traits such as curiosity, a penchant for asking questions, and a strong imagination (Richardn Adoy and Firosalia Kristin, 2019). Creative ideas play a crucial role in the technological advancements and easy access to information we enjoy today. Student creativity can be identified through their ability to express opinions, develop ideas into products, ask questions about unknowns, solve problems from multiple perspectives, and provide logical reasons for their opinions.

Based on the previous explanation, the researcher was motivated to conduct research on improving learning outcomes through the implementation of the PjBL learning model at SDN 064034. Therefore, the research title formulated is: "Improving Student Learning Outcomes with the Problem-Based Learning Model at SDN 064034." This research aims to: (1) describe the application of the Problem-Based Learning model in improving cognitive learning outcomes, and (2) explain the improvement in students' cognitive learning outcomes after using the model.

II. RESEARCH METHOD

Type of Research

This research falls into the category of studies on learning outcomes that apply the Project-Based Learning (PjBL) approach. Learning outcome research emphasizes student-centered learning, where students are actively involved in complex and meaningful real-life projects or simulations. The purpose of this research is to measure the extent to which students have achieved the established competencies after participating in the learning process, including knowledge (cognitive), attitude (affective), and skills (psychomotor).

Research Design

Research design is a structured plan or strategy for testing hypotheses and evaluating the effect of a treatment on the variables studied. In education, experimental design is used to determine the effect of a learning model on student learning outcomes. One such model is Project-Based Learning (PjBL), a learning approach that focuses on project-based learning activities. In this model, students actively explore real and relevant topics in depth, resulting in tangible and measurable outcomes.

The main characteristics of PjBL include:

1. Student-centered learning
2. Based on real-life projects
3. Implemented collaboratively and reflectively
4. Enhances 21st-century skills, including critical thinking, creativity, communication, and

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

collaboration.

To measure the effectiveness of the PjBL model, a pretest-posttest control group experimental design is often used as a research method.

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

Tabel 1. Design of Structure

Group	*Pretesst*	Treatment	*Pottest*
Exppriment	O1	Project-Based Learning PjBL mode	O2
Control	O2	conventional learning system	O4

Description:
O_1 and O_3: Initial values (before treatment)
X: Treatment using the PjBL model
O_2 and O_4: Final values (after treatment)

Research Location and Timeline

This research was conducted at the UPT SDN 064034 Medan Johor, specifically to improve learning outcomes and the Project-Based Learning (PjBL) model. The research is located at Jl. STM No. 13, Sitirejo II, Medan Amplas District, Medan City, North Sumatra, 20217. The research will be conducted in the 2024/2025 academic year.

Population and Sample

1. Population

A population is the entire collection of subjects with certain characteristics and who are the focus of the research. In educational research examining the Project-Based Learning (PjBL) model, the population usually includes all students at a specific level, school, or class. For example, the population in this study is all 25 students in class SDN 064034 in the 2024/2025 academic year (Sugiyono, 2018).

2. Sample

A sample is a subset of the population selected to represent the entire population in a study. Sample selection must be carried out carefully so that research findings can be generalized. In this study, the sample consisted of two classes from the population: all 25 students at SDN 064034, who were selected as the experimental group using the Project-Based Learning (PjBL) model.

Research Instruments

Data collection instruments are tools used by researchers to facilitate data collection and ensure that the collected data is accurate, complete, and neatly organized, thus facilitating data analysis. The tools used in this study include:

1. Student activity observation sheets, used to record the extent to which students participated during the learning process.
2. Learning outcome tests in the form of evaluation questions designed according to competency achievement indicators for the Indonesian Cultural Diversity material.
3. Field notes, containing records of various important information that occurred during the learning process, from both the teacher and observers.
4. Documentation, in the form of photos and videos of learning activities, which served as supplementary observation data and reflective evaluation materials.

Methods and Data Collection

1. **Data Collection Techniques**

Data in this study were obtained through observation sheets of student activities during the learning process and cognitive learning outcome tests.

a. Cognitive learning test

1) Calculating the average score

The average score is calculated using the formula = ΣΣ n x. Where: Σx = Total Student Score (the sum of all scores obtained by students)

Σn = Total Number of Students

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

Table 2: Student Learning Outcomes

N0	Total Number of Students	**Students Score**
1	X 1	65
2	X 2	75
3	X 3	80
4	X 4	90
5	X 5	59
6	X 6	78
7	X 7	85
8	X 8	60
9	X 9	95
10	X 10	45
11	X 11	89
12	X 12	68
13	X 13	70
14	X 14	94
15	X 15	83
\6	X 16	55
17	X 17	67
18	X 18	88
19	X 19	49
20	X 20	90
21	X 21	100
22	X 22	89
23	X 23	76
24	X 24	90
25	X 25	100

Then,
Σx = 65 + 75 + 80 + 90 + 59 + 78 + 85 + 60 + 95 + 45 + 89 + 68 + 70 + 94 + 83 + 55 + 67 + 88 + 49 + 90 + 100 + 89 + 76 + 90 + 100 = 1.855
Σn= 25
So, Average = 1.855/25 = 74,2

2) **Classical Completion**

Classical completion is calculated by dividing the number of students who have achieved learning completion by the total number of students in the class, then multiplying the result by 100%.

$$P = \frac{\text{Number of students who have completed learning}}{\text{Numb er of students in the class}} \times 100$$

The calculation results are compared with the Minimum Completion Criteria (KKM), both for individuals and as a class, and then classified as completed or incomplete according to the criteria listed in the following table:

Tabel 3. Minimum Standards for Learning Completion

Kriteria Ketuntasan		**Total**
Individual	**Clasic Assessment**	

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

≥70%	≥75%	Complete

Sudents' Indonesian language learning outcomes are considered to have improved if their individual learning completion reaches a minimum score of ≥70 and their class completion reaches a minimum score of ≥75%.

2. Data Analysis

Learning mastery is measured based on the 2013 Curriculum standards, where students are considered to have achieved a minimum score of 70 for Indonesian language if they achieve a score that meets the Minimum Mastery Criteria (KKM). This score is considered to be at least 75% of students in the class have achieved the Minimum completion criteria.

Research Procedure

This research falls into the category of classroom action research (CAR), which is research conducted by teachers with the aim of improving or enhancing the quality of the learning process. In this research, teachers play a dual role as researchers and implementers of the action, assisted by colleagues in conducting observations. The CAR model used follows the Kemmis and McTaggart framework, which consists of four cycle stages:

1. planning,
2. action,
3. observation,
4. reflection.

Classroom Action Research Stages:

1. Planning

At this stage, teachers create a Lesson Implementation Plan (RPP) using the Project-Based Learning (PjBL) model and prepare observation sheets for observation purposes during the learning process.

2. Implementation

The implementation stage includes implementing the work plan that has been prepared as an improvement measure in learning.

3. Observation

Observation aims to monitor the implementation of the plan. Peers assess the implementation by completing the provided observation sheet.

4. Reflection

Reflection is conducted to evaluate student learning outcomes after each cycle or meeting. At this stage, researchers assess the achievement of performance indicators in the first cycle, identify any shortcomings and problems that arise, and design improvements for the next cycle.

III. RESULTS AND DISCUSSION

Improving Student Learning Outcomes with the PJBL Model At SDN 064034

Based on observations in this study, from the planning stage, pre-cycle activities, implementation of actions in cycle 1, to the next stage in cycle 2, the learning process took place in stages. The pre-cycle was conducted on Friday, October 22, 2024, cycle 1 on Thursday, November 4, 2024, and cycle 2 on Friday, November 19, 2024. The results showed significant improvement after the completion of cycle 2. Students had a better understanding of the material taught, as evidenced by an increase in average grades from 59 to 83, and a learning completion rate of 88%. Furthermore, students demonstrated very active participation during the lesson, as evidenced by their rapid completion of the floor plan. This indicated that the

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

teacher's efforts were effective, and therefore, improvements were discontinued at that stage. However, there were still three students who had not achieved mastery due to limited reading and writing skills, which made it difficult to answer questions and complete the diagram. This study also showed an increase in teachers' professional competence (Supriyanto, Hartini, Syamsudin, and Sutoyo, 2019).

Based on the explanation above, the implementation of the Project-Based Learning (PjBL) model provides several benefits, including:

1. Students become more actively involved in the learning process.
2. Students demonstrate high enthusiasm and passion when working on the diagram and answering questions to find solutions.
3. The average learning outcome score increases with each cycle.

Table 4. Comparison of Percentage of Student Learning Outcomes per Cycle

Assessment Figures	Percentage Level in Pre-Cycle	Percentage in Cycle I	Percentage in Cycle II
30	12%	0%	0%
40	15%	15%	0%
50	23%	8%	4%
60	12%	19%	8%
70	12%	12%	15%
80	15%	15%	23%
90	7%	19%	31%
100	4%	12%	19%
Percentage of Students Completing Learning	38%	56%	88%
Total	59	71	83

Based on Table 4, data on student learning outcomes from the pre-cycle to cycle II shows a significant increase in student achievement.

In the pre-cycle, the majority of students scored below the completion standard, with the following breakdown: 12% of students scored 30, 15% scored 40, and 23% scored 50. Only 4% of students achieved a score of 100. Overall, the learning completion rate at this stage was only 38%, with a class average score of 59.

Entering cycle I, there was improvement, although some students still achieved low achievement. Scores of 30 were no longer present, while scores of 40 remained at 15%. The percentage of students achieving scores of 90 and 100 also began to increase. The completion rate learning reached 56%, and the average score increased to 71.

In the second cycle, learning outcomes showed significant improvement. No students scored 30 or 40. Most students achieved high scores, with 31% achieving 90 and 19% achieving 100. The learning completion rate improved significantly to 88%, reflecting a class average of 83.

Implementation of the Project-Based Learning (PjBL) Model to Improve Student Learning Outcomes at SDN 064034

The implementation of the Project-Based Learning (PjBL) model at SDN 064034 is an approach that emphasizes providing relevant and meaningful learning experiences through project implementation. This model focuses not only on academic achievement but also on developing 21st-century skills such as collaboration, communication, problem-solving, and creativity. The following describes the implementation of PjBL and its impact on improving

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

student learning outcomes and motivation.

Through a project-based approach, students at SDN 064034 are engaged in learning activities that require them to design, research, and solve real-world problems related to the subject matter. The projects are designed contextually, such as a school environmental cleanliness project, making science teaching aids from recycled materials, and an energy-saving campaign (Wahyuni, 2022).

The stages of implementing PjBL at SDN 064034 are:

1. Determining Essential Questions

The teacher determines a project topic that aligns with the curriculum and is of interest to students, for example, about the environment, local culture, or simple technology.

2. Project Planning

Students, together with the teacher, develop a work plan, determine tools, information sources, and steps to be taken.

3. Project Implementation

Students work individually or in groups to collect data, analyze it, and create a product. The teacher acts as a facilitator.

4**. Presentation of Results**

Students present their projects to the class, or even to a school or parent forum. This builds self-confidence and communication skills.

5. Reflection and Evaluation

The teacher and students together reflect on the process and results of the project. Evaluation is conducted not only on the final product, but also on the process and students' attitudes during the activity.

6. Increasing Student Learning Motivation

The Project-Based Learning (PjBL) model provides students with the opportunity to actively engage in the learning process through real-life projects relevant to their daily lives. This increases learning motivation because students find learning more meaningful and engaging.

7. Developing Critical and Creative Thinking Skills

By completing projects, students are required to think critically in solving problems and develop creativity in processing and presenting project results. These skills indirectly contribute to improving

The quality of their learning outcomes.

1. Improved Academic Learning Outcomes

Data from tests and project assessments show an increase in average student scores after implementing the Project-Based Learning (PjBL) model compared to before. This demonstrates the effectiveness of PjBL in helping students understand the material more deeply.

2. Improved Cooperation and Communication Between Students

PjBL encourages students to work in groups, resulting in intense interaction between group members. Through this process, social skills such as cooperation, communication, and group responsibility are further developed.

3..Challenges and Obstacles in Implementation

Several obstacles encountered included limited time, learning resources, and teacher readiness to manage project-based learning. However, with proper training and preparation, these obstacles can be minimized.

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

The implementation of Project-Based Learning (PjBL) at SDN 064034 has proven effective in improving student achievement in cognitive, affective, and psychomotor aspects. Furthermore, this learning provides a fun and meaningful experience, while also helping students hone 21st-century skills such as critical thinking, creativity, cooperation, and communication.

Teachers at SDN 064034 also reported that the implementation of PjBL requires teachers to act as facilitators, not as the sole source of information. This has a positive impact on creating more active and student-centered learning.

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

Table 5. Comparison of Student Scores Before and After

No	Students Name	Learning Outcomes before the PjBL Method	Learning Outcomes after the PjBL Method	Improving Learning Outcomes
1	X1	65	80	15
2	X2	70	85	15
3	X3	60	78	18
4	X4	68	82	14
5	X5	72	88	16
6	X6	75	85	20
7	X7	80	90	25
8	X8	60	76	19
9	X9	90	90	30
10	X10	65	78	16
11	X11	72	84	28
12	X12	80	95	30
13	X13	63	78	15
14	X14	90	95	24
15	X15	68	68	15
16	X16	95	100	30
17	X17	60	68	14
18	X18	93	95	30
19	X19	85	85	26
20	X20	76	76	19
21	X21	95	95	29
22	X22	60	76	17
23	X23	88	88	28
24	X24	90	95	30
25	X25	79	85	17

IV. CONCLUSION

Based on observations in this study, implementation began with the planning stage, continued with pre-cycle activities, and then corrective actions were implemented in stages in Cycles I and II. The series of activities began on Friday, October 22, 2024 (pre-cycle), continued on Thursday, November 4, 2024 (cycle I), and Friday, November 19, 2024 (cycle II). The results showed a significant improvement in student learning outcomes after completing Cycle II. Students' understanding of the material improved, as evidenced by the average score rising from 59 to 83, and the learning completion rate reaching 88%. Students also demonstrated active participation during the learning process, as evidenced by their speed in completing the floor plan. This reflects that the learning strategies implemented by the teacher were effective, so the improvement process was stopped in Cycle II. However, three students still did not reach the completion standard due to limitations in reading and writing skills, which hindered them from working on the questions and completing the floor plan. This study also indicates an increase in teachers' professional competence.

The implementation of the Project-Based Learning (PjBL) model at SDN 064034 is an approach that emphasizes project-based learning as a means of providing relevant and meaningful learning experiences. This model not only focuses on academic achievement but also encourages the development of 21st-century skills such as collaboration, effective communication, problem-solving skills, and creativity. The implementation of PjBL has been proven to increase student learning motivation and positively impact overall learning outcomes. This can be seen in students' active participation in projects and improved

Volume 04, Issue 02, July-December 2025
e-ISSN:2830-7933
DOI: 10.55299/ijere.v4i2.1416

academic achievement throughout the learning process.

REFERENCES

Ahmad susanto, (2016) Teori Belajar dan Pembelajaran di Sekolah Dasar, (Jakarta : Kencana) Ayu, N. P., & Kurniawan, D. A. (2020). *Penerapan Model Project Based Learning untuk*

Meningkatkan Hasil Belajar Siswa Sekolah Dasar. Jurnal Ilmiah Pendidikan Dasar, 7(2), Fatihul Huda dan Asrul Anan, (2018) "Penggunaan Medel Pembelajaran Writing In The Here

And Now Untuk Meningkatkan Hasil Belajar PAI Siswa Kelas X Di SMA Purwodadi", Jurnal Al-Murabbi, Vol.4, No. 1, Desember

Prasetya, B., & Wahyuni, R. (2024). Penerapan Project Based Learning dalam Meningkatkan Hasil Belajar Siswa SDN di Masa Pandemi**.** *Jurnal Teknologi Pendidikan*, 10(1),

Rahmi Ramadhani, (2020). Belajar dan Pembelajaran: Konsep dan Pengembangan, ed. by Tonni Limbong (Medan: Yayasan Kita Menulis)

Richard Adony Natty, Indri Anugraheni (2017). "Peningkatan Kreativitas dan Hasil Belajar (Bandung: PT Remaja Rosdakaya),

Richardn Adoy Dan Firosalia Kristin, (2019). Peningkatan Kreativitas dan Hasil Belajar Siswa Melalui Model Pembelajaran Project Based Learning Di Sekolah Dasar. Jurnal Basicedu 3,

Sani, Ridwan Abdullah. (2018). *Pembelajaran Berbasis Proyek (Project Based Learning): Teori dan Praktik*. Jakarta: Bumi Aksara.

Sugiyono. (2018). *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif, dan R&D)*.Bandung: Alfabeta

Supriyanto, A dan Sutoyo, A. (2019). Indicators of professional competencies in research of Guidance and Counseling Teachers. Counsellia: Jurnal Bimbingan dan Konseling, 9(1), 53- 64.

Surahman, dan A Wedi, (2019). "Students' Perception of Project-Based Learning Model in Blended Learning Mode Using Sipejar," Conference on Education

Taula, Roana, dan Angreni Siska (2018). Penerapan Model Pembelajaran Project Basic Learning (PjBL) Upaya Meningkatkan Kreativitas Mahasiswa. Jurnal Pendidikan Indonesia, No.1 Wahyuni, S. (2022). *Project Based Learning* sebagai Strategi Inovatif dalam Meningkatkan

Hasil Belajar Siswa Sekolah Dasar. *Prosiding Seminar Nasional Pendidikan*, 4(1), Wahyu Raharjo, (2016). Psikologi Pendidikan (Jakarta:Pt Raharja Grafindo Persada),

Wulandari, E. (2021). Pengaruh Project Based Learning terhadap Keterampilan Berpikir Kritis Siswa SDN. *Jurnal Pendidikan dan Pembelajaran*, 9(3), 33-40