

## Implementation the Problem Based Learning (PBL) Model Assisted by Pop-Up Book Media to Increase the Activeness of Science Learning in Class V Students of UPTD SD Negeri 85 Parepare

Musfirah\*<sup>1</sup>, Muhammad Amran<sup>2</sup>, Nurhalifa Hakim<sup>3</sup>

Elementary School Teacher Education Study Program, Faculty of Education,  
Makassar State University

**Corresponding Author:** Musfirah [musfirah@unm.ac.id](mailto:musfirah@unm.ac.id)

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### ABSTRACT

This study was motivated by the low learning activeness of fifth-grade students in Science and Social Studies (IPAS). It aimed to improve the learning process and students' learning activeness through the Problem-Based Learning (PBL) model assisted by Pop-up Book media. The study employed Classroom Action Research consisting of planning, implementation, observation, and reflection stages. The subjects were one teacher and 30 students, comprising 14 boys and 16 girls. Data were collected through observation, reflection, and documentation and analyzed qualitatively. The findings revealed that the implementation of PBL assisted by Pop-up Book media improved the learning process and students' learning activeness. Teacher activity increased from 66% to 93.33%, student activity from 69.78% to 93.11%, and learning activeness from 63.54% to 86.45%, reaching the high category.

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## **INTRODUCTION**

Learning activeness is one of the essential factors that determine the success of the learning process because active students are more likely to participate, interact, and construct knowledge meaningfully. In elementary schools, especially in Science and Social Studies (IPAS) learning, students are expected to be actively involved in exploring information, discussing ideas, and solving problems related to their daily lives. However, classroom practices often show that students still tend to be passive, reluctant to ask questions, and less involved in group discussions, resulting in teacher-centered learning. Such conditions hinder students from developing critical thinking skills and meaningful learning experiences.

Based on preliminary observations and discussions with the fifth-grade teacher at UPTD SD Negeri 85 Parepare, students' learning activeness in IPAS was relatively low. Several problems were identified, including students' lack of participation in group discussions, low motivation to express opinions, and difficulties in relating learning materials to real-life situations. In addition, learning activities were still dominated by teacher explanations, while the use of learning media that could attract students' attention and encourage active participation had not been optimized. Consequently, students tended to depend on the teacher and were less involved in the learning process.

One alternative to overcome these problems is the implementation of the Problem-Based Learning (PBL) model. PBL emphasizes learning through authentic problems that encourage students to investigate, discuss, and formulate solutions collaboratively. Through this model, students are expected to develop critical thinking skills, communication abilities, and active participation in learning. To support the implementation of PBL, appropriate learning media are needed to present learning materials more concretely and attractively. Pop-up Book media provide three-dimensional visual representations that can stimulate students' curiosity and facilitate their understanding of abstract concepts. The integration of PBL and Pop-up Book media is expected to create a more meaningful and student-centered learning environment.

Previous studies have shown that Problem-Based Learning contributes positively to improving students' engagement and problem-solving abilities. Likewise, Pop-up Book media have been reported to increase students' interest and motivation in learning. However, studies integrating the PBL model with Pop-up Book media in Science and Social Studies (IPAS) learning at the elementary school level are still limited. Therefore, this study contributes to enriching knowledge by providing empirical evidence regarding the effectiveness of combining the Problem-Based Learning model with Pop-up Book media to improve students' learning activeness. The uniqueness of this study lies in the application of both approaches in fifth-grade IPAS learning on the topic of "My Proud Region" at UPTD SD Negeri 85 Parepare.

Accordingly, this study aimed to improve the learning process and students' learning activeness in Science and Social Studies (IPAS) among fifth-

grade students of UPTD SD Negeri 85 Parepare through the implementation of the Problem-Based Learning (PBL) model assisted by Pop-up Book media.

## LITERATURE REVIEW

### *Learning Model*

Learning models are a crucial component in the teaching and learning process because they serve as a conceptual framework for designing, implementing, and evaluating classroom learning. Learning models provide guidance for teachers in achieving learning objectives effectively and systematically. Mirdad (2020) states that learning models serve as guidelines for teachers in designing the learning process, including preparing learning tools, selecting media, and developing assessment instruments. Similarly, Asyafah (2019) explains that a learning model is a structured framework used to implement learning strategies, methods, and techniques from the beginning to the end of the learning process. Therefore, a learning model can be defined as a systematic plan that guides teachers in carrying out learning activities to achieve predetermined learning objectives.

### *The Problem Based Learning (PBL) Model*

Problem-Based Learning (PBL) is a student-centered learning approach that engages students in solving real-world or authentic problems related to the learning material. Through this model, students actively engage in the learning process by identifying problems, finding solutions, and constructing meaningful knowledge, both individually and through group collaboration.

According to Syamsidah and Suryani (2018), PBL engages students in problem-solving through scientific steps, which not only helps them understand concepts but also develops independent problem-solving skills. Furthermore, PBL enhances students' thinking skills, such as analyzing situations, applying knowledge to new contexts, and making decisions (Hariani MD & Siregar, 2019). PBL also encourages active participation, collaboration, and critical thinking, with the teacher acting as a facilitator in guiding the learning process (Suginem, 2021; Yulianti & Gunawan, 2019).

### *Characteristics of Problem-Based Learning (PBL)*

Problem-Based Learning (PBL) has unique characteristics that distinguish it from other learning models. According to Diastuti (2021), PBL is characterized by several key features: (1) learning begins with a real-life question or problem; (2) integrating knowledge from various disciplines; (3) using authentic inquiry-based methods to find solutions; (4) producing a final product or work; and (5) encouraging collaboration among students in completing assignments. These characteristics indicate that PBL emphasizes active student involvement in meaningful learning activities.

Furthermore, Usman (2021) explains that PBL is student-centered, meaning students actively construct their own knowledge through learning experiences. This model uses authentic problems as the primary focus of learning and encourages students to learn independently by seeking information from various sources. PBL is also conducted in small groups to encourage discussion and collaboration, while the teacher acts as a facilitator, guiding and supporting students throughout the learning process. Similarly, Saputra (2020) and Rahayu

(2021) emphasized that PBL is based on real-life problems, encourages active and creative learning, and positions teachers as facilitators while students are responsible for developing their critical thinking and problem-solving skills.

#### *Steps of Problem Based Learning (PBL)*

Learning activities require systematic steps to ensure that the learning process is well-structured and achieves the expected objectives. In Problem Based Learning (PBL), these steps guide both teachers and students in implementing problem-solving-based instruction effectively. According to Suginem (2021), PBL consists of five main phases, namely: introducing the problem to students, organizing students for investigation, facilitating independent or group inquiry, developing and presenting products or works, and analyzing and evaluating the problem-solving process. Similarly, Sujana and Sopandi (2023) describe the PBL steps as problem identification, student grouping and resource preparation, exploration, problem solving, presentation of results, and evaluation. Furthermore, Saputra (2020) explains that PBL begins with presenting a problem situation to students and ends with the presentation of students' work. The main steps include orienting students to the problem, organizing learning tasks, guiding individual and group activities, developing and presenting results, and evaluating the problem-solving process. In addition, Eismawati et al. (2019) emphasize that PBL involves understanding objectives, receiving problems, conducting investigations, analyzing data, preparing reports, and reflecting on the learning process.

Based on these views, it can be concluded that PBL begins with introducing real-life problems to students, followed by organizing learning activities and guiding investigation processes. Students then analyze the information, develop solutions, and present their results in various forms. The final stage involves evaluation and reflection on both the process and outcomes of problem-solving activities.

#### *Advantages and Disadvantages of Problem Based Learning (PBL)*

Problem Based Learning (PBL) has several advantages in the learning process. This model enables students to understand concepts more deeply because they discover the knowledge by themselves through problem-solving activities (Usman, 2021). PBL also actively engages students in higher-order thinking processes such as analyzing, evaluating, and solving real-life problems, which makes learning more meaningful and relevant. In addition, PBL encourages students to become more independent, responsible, and collaborative, while also improving their motivation and interest in learning since the problems are related to real-life situations (Rerung in Masrinah et al., 2019). However, PBL also has some limitations. The implementation of this model requires sufficient learning time and careful preparation from the teacher, which can be challenging in classroom practice (Rajma et al., 2022). In addition, students who lack interest or confidence may find it difficult to engage in problem-solving activities, especially when the problems are complex or unfamiliar. If students do not clearly understand the purpose of the learning process, they may also experience difficulties in achieving the expected learning outcomes (Diastuti, 2021).

### *Definition of Pop-up Book Learning Media*

Learning media is an important tool used to support the effectiveness of delivering learning materials from teachers to students. Mayasari et al. (2021) state that learning media includes various forms of communication tools designed regularly to convey information, create a conducive learning environment, and support an efficient and effective learning process. In addition, Hasan et al. (2021) explains that learning media acts as a bridge between teachers and students by clarifying the learning content and making the learning process more structured and optimal.

Pop-up Book is a three-dimensional learning media designed in an attractive form where images or objects appear when the pages are opened. According to Izzah and Setiawan (2023), Pop-up Book is an interactive and dynamic media that helps students understand abstract concepts through visual and concrete representations, making learning more meaningful and enjoyable. The three-dimensional illustrations attract students' attention, especially at the elementary level, and reduce monotonous learning experiences. Furthermore, Pop-up Books also play an important role in increasing students' motivation and learning engagement. The emerging visual elements on each page capture students' attention and help them better understand the learning content. Izzah and Setiawan (2023) also state that Pop-up Book is particularly useful for elementary school students because it presents information in a visual, concrete, and interactive way, which makes it easier for students to remember and understand learning materials.

### *Previous Research*

Previous studies have shown that the implementation of Problem Based Learning (PBL) supported by learning media has a positive impact on students' learning outcomes and thinking skills. Syafira (2022) found that the PBL model assisted by audio-visual media had a significant effect on the science learning achievement of fifth-grade elementary students. This was proven by the hypothesis test result with a significance value of  $0.000 < 0.05$ , and the experimental class mean score (85.87) which was higher than the control class (69.06). These findings indicate that PBL supported by appropriate learning media can improve students' conceptual understanding and learning achievement in science. Similarly, Rosyada (2025) demonstrated that the application of the Problem Based Learning (PBL) model assisted by digital Pop-up Book media had a significant effect on students' critical thinking skills in fifth-grade elementary school. The results showed a significance value of 0.000 and an effect contribution of 35.4%, with the experimental class achieving higher results compared to the control class. These findings confirm that PBL combined with interactive media such as Pop-up Book effectively enhances students' thinking skills and learning performance.

### *Research Hypothesis*

Based on the research problem, the action hypothesis in this study is that if the Problem Based Learning (PBL) model assisted by Pop-up Book media is implemented properly and appropriately, then the learning activeness in Science and Social Studies (IPAS) of fifth-grade students at UPTD SDN 85 Parepare can be improved.

## **METHODOLOGY**

This study uses a qualitative approach with descriptive analysis to understand the learning process and interpret classroom phenomena in depth. According to Musfirah et al. (2021), qualitative research focuses on describing and interpreting data in a natural setting without statistical procedures, making it suitable for analyzing learning processes in the classroom. In this study, although data are presented in the form of scores and percentages from observation results, the analysis remains descriptive-reflective to describe changes in teacher activity, student activity, and students' learning activeness during the implementation of the learning model. This research is Classroom Action Research (CAR) using the Kemmis and McTaggart model, which is carried out in cyclical stages consisting of planning, action, observation, and reflection. If the expected learning outcomes are not achieved in Cycle I, the research is continued to Cycle II. The study was conducted to improve students' learning activeness through the implementation of the Problem Based Learning (PBL) model assisted by Pop-up Book media.

The subjects of this research are one teacher and 30 fifth-grade students of UPTD SDN 85 Parepare in the second semester of the 2025/2026 academic year. The research was conducted at UPTD SDN 85 Parepare, Bacukiki District, Parepare City, South Sulawesi, Indonesia. The school was chosen because it supports the implementation of the research and the learning conditions are relevant to the problem being studied. The research procedure begins with a pre-research stage, which includes obtaining permission from the school, conducting interviews with the classroom teacher, and carrying out initial classroom observations to identify students' learning activeness. The main research is then conducted through CAR cycles. In the planning stage, the researcher prepares lesson plans based on the PBL model assisted by Pop-up Book media, learning materials, worksheets, observation sheets, and documentation tools. The action stage is carried out by implementing the PBL learning steps, namely problem orientation, organizing students for learning, guiding individual and group investigations, developing and presenting work, and analyzing and evaluating the problem-solving process. During the implementation, observation is conducted to record teacher and student activities, while reflection is carried out to evaluate the learning process and improve the next cycle.

The data in this study are collected through observation and documentation. Observation is used to record teacher activities, student activities, and students' learning activeness during the learning process, while documentation is used to support research data in the form of photos, videos, attendance lists, and other relevant school records. All instruments, including observation sheets for teacher activity, student activity, and learning activeness, were validated by the supervisor to ensure their clarity, relevance, and alignment with the PBL learning steps before being used in the research. The data are analyzed using qualitative descriptive techniques consisting of data condensation, data display, and conclusion drawing. Data obtained from observation sheets are selected, simplified, and grouped based on indicators, then presented in tables and percentage form to describe the differences between

Cycle I and Cycle II. After that, conclusions are drawn by comparing the findings with predetermined success criteria. The success of the research is determined by two indicators. First, students' learning activeness is considered successful if it reaches at least 75% in the high category, calculated using the formula of total score obtained divided by maximum score multiplied by 100, where the maximum score is 96. Second, the learning process is considered successful if the implementation of the PBL steps reaches the high category (76%–100%) based on observation results.

## RESEARCH RESULT

This research was conducted in two cycles. Each Classroom Action Research (CLR) cycle consisted of four stages: planning, implementation, observation, and reflection. Each cycle consisted of two meetings, each lasting 2 x 35 minutes. Learning activities were conducted in a fifth-grade classroom at the UPTD of SD Negeri 85 Parepare, with a total of 30 students. The focus of the research was the implementation of the Problem-Based Learning (PBL) model, supported by Pop-up Book media, to enhance student learning activities in science. In the initial phase, the researcher identified learning problems through classroom observations and discussions with the fifth-grade teacher, acting as observer. The results of the initial observations indicated that student learning activities were still moderate and needed to be improved through more interactive learning models. Based on these findings, the researcher designed an action research plan aimed at increasing student participation in learning activities. The planning stage was conducted through consultation with the supervising lecturer and collaboration with the fifth-grade teacher. This planning included the development of a Cycle I lesson plan using the Problem-Based Learning (PBL) model, the development of Pop-up Book media related to cultural heritage material, the development of group worksheets (LKK), validated observation sheets for teacher and student activities, and observation sheets for student learning activities. In addition, the researcher prepared learning equipment, documentation tools such as cell phones and tripods, and supporting teaching materials to be used during the learning process.

The implementation stage of Cycle I was carried out in accordance with the previously developed lesson plan. Learning activities took place over two meetings. In the first meeting, students were directed to identify and analyze problems related to cultural heritage through group discussions using the LKK. In the second meeting, students presented the results of their discussions and participated in an evaluation process guided by the teacher. The learning process was implemented according to the stages of the PBL model: problem orientation, student organization, investigation guidance, development and presentation of results, and analysis and evaluation of the problem-solving process.

The observation stage was conducted simultaneously throughout the learning process. Data were collected through observation sheets for teacher activities, student activities, and student learning activity indicators. The results of Cycle I indicated that teacher and student activities were still moderate, and student learning activities had not yet achieved the predetermined success

indicators. Several weaknesses were identified, such as limited student participation in asking questions, a lack of confidence in presenting results, and teacher dominance during the conclusion phase of the lesson. The reflection phase of Cycle I was used to evaluate the overall implementation of the lesson. The results indicated that improvements were needed to increase student participation, particularly in discussions and presentations. Furthermore, teachers needed to provide more equal opportunities for students to respond, ask questions, and summarize the learning outcomes. Based on the reflection results, the study continued into Cycle II with improvements in the learning implementation.

In Cycle II, improvements were implemented based on the findings of Cycle I. The teacher provided greater opportunities for students to ask questions and respond during group presentations, increased guidance during group discussions, and actively involved all students in the evaluation and conclusion process. Learning activities in Cycle II were implemented more optimally than in Cycle I, with increased student engagement at each stage of the PBL model. Observations in Cycle II showed significant improvements in teacher activities, student activities, and student learning activities. Most students were actively involved in discussions, presentations, and problem-solving activities. The data analysis results indicate that the success indicators have been achieved, with student learning activity reaching the high category.

Based on a comparison of Cycle I and Cycle II, it can be concluded that there has been an improvement in the learning process and student learning activities after implementing the Problem-Based Learning (PBL) model supported by Pop-up Book media. This improvement can be seen from the increase in observations of teacher and student activity, as well as the increase in student learning activity scores from the moderate category in Cycle I to the high category in Cycle II, as presented in the following table:

Table 1. Cycle I and II Achievement Index

| Cycle           | Observations |               |                   |
|-----------------|--------------|---------------|-------------------|
|                 | Guru         | Peserta Didik | Kraktifan Belajar |
| <b>I</b>        | 66%          | 69,78%        | 63,54%            |
| <b>II</b>       | 93,33%       | 93,11%        | 86,45%            |
| <b>Kategori</b> | Sedang       | Sedang        | Tinggi            |

Based on the results of both cycles, it can be concluded that the implementation of actions in Cycle II has met the predetermined success indicators. Therefore, the research was declared successful and did not need to be continued to the next cycle.

## DISCUSSION

This study aimed to improve the learning process and students' learning activity in IPAS subject at Grade V UPTD SD Negeri 85 Parepare through the implementation of the Problem Based Learning (PBL) model assisted by Pop-Up



Book media. The research was conducted as Classroom Action Research (CAR) consisting of two cycles, each cycle including the stages of planning, implementation, observation, and reflection. This procedure is in line with Kemmis and McTaggart (in Arikunto et al., 2017), who state that CAR is carried out through a cyclical process to improve classroom practice. The implementation of the learning process in Cycle I showed that both teacher activity and student activity were still in the moderate category, with percentages of 66% and 69.78% respectively. These results indicate that the learning process has not yet run optimally. Several weaknesses were identified, such as limited teacher explanation, less optimal guidance during group investigation, and insufficient opportunities for students to respond or provide feedback during presentations. In addition, students' learning activity was still not fully developed, particularly in terms of asking questions, expressing opinions, and active participation in group discussions.

Based on the reflection results of Cycle I, improvements were made in Cycle II by optimizing the implementation of the PBL stages and strengthening the role of Pop-Up Book media in learning activities. The teacher provided clearer guidance during group work, increased opportunities for students to ask questions and respond, and facilitated more active student involvement in problem-solving activities. As a result, the learning process improved significantly in Cycle II, where teacher activity reached 93.33% and student activity reached 93.11%, both categorized as high. The use of Pop-Up Book media played an important role in supporting the implementation of the PBL model. At the orientation stage, the media functions as a visual stimulus that helps students understand real problems more concretely and increases their curiosity. During group discussion and investigation, the media served as a learning resource that supported students in analyzing information and finding solutions collaboratively. It also helped improve students' participation during discussion and evaluation activities.

The improvement of students' learning activity was evident from the comparison between Cycle I and Cycle II. In Cycle I, students' learning activity was 63.54% (moderate category), while in Cycle II it increased to 86.45% (high category). This indicates that the implementation of PBL assisted by Pop-Up Book media successfully improved students' engagement in learning activities. The increase occurred because PBL encouraged students to actively participate in problem-solving processes, while Pop-Up Book media helped make abstract concepts more concrete and easier to understand. The combination of PBL and Pop-Up Book media created a more student-centered learning environment. Students were actively involved in discussing problems, searching for information, presenting results, and evaluating solutions. This condition supported the development of critical thinking, collaboration, and communication skills. As stated by Triana et al. (2025), Pop-Up Book media has attractive visual characteristics that can increase students' motivation and learning interest. Meanwhile, PBL encourages students to learn through real problems and develop independent thinking skills (Rahmadani, 2019).

Overall, the findings of this study indicate that the implementation of the Problem Based Learning (PBL) model assisted by Pop-Up Book media is effective in improving students' learning activity in IPAS learning. However, this study has limitations, including the fact that it was conducted in only one class, involved a limited number of cycles, and focused on specific learning materials. Therefore, the results cannot be generalized broadly to other contexts. Despite these limitations, the findings provide evidence that the integration of PBL and Pop-Up Book media can create more active, meaningful, and student-centered learning.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the findings of this Classroom Action Research, it can be concluded that the implementation of the Problem-Based Learning (PBL) model, supported by Pop-Up Book media, was effective in improving the learning process and student learning activities in fifth-grade science at the UPTD of SD Negeri 85 Parepare. This improvement in the learning process was demonstrated by an increase in teacher activity from 66% in Cycle I to 93.33% in Cycle II, and student activity from 69.78% to 89.77%, shifting from the moderate to high category. Furthermore, student learning activity also increased significantly from 63.54% in Cycle I to 86.45% in Cycle II, indicating a shift from the moderate to high category. These results demonstrate that the integration of PBL and Pop-Up Book media can create a more active, interactive, and student-centered learning environment.

Furthermore, this study recommends that teachers implement the PBL model more optimally by presenting contextual problems related to students' daily lives, guiding group discussions with clear roles, and encouraging active interaction among students during presentations. The use of visual learning media such as Pop-Up Books is also recommended to support students' understanding of abstract concepts and increase their learning motivation. Students are expected to participate more actively in learning activities, especially in discussions, asking questions, and expressing opinions to improve their learning outcomes. Schools are encouraged to support teachers by providing innovative learning resources and adequate learning media to improve the quality of teaching and learning. For future researchers, this study can serve as a reference for developing similar studies with improved learning models, media variations, number of cycles, or broader learning materials to obtain more comprehensive results.

## **ADVANCED RESEARCH**

This study has several limitations that need to be acknowledged. First, it was conducted in only one class, a fifth-grade class at the UPTD of SD Negeri 85 Parepare, so the findings primarily reflect the context of that particular class and cannot be broadly generalized to other schools or grade levels. Second, this study was conducted in two cycles of Classroom Action Research, meaning improvements in learning outcomes were observed over a relatively limited period. Third, the learning materials focused only on specific science topics, specifically cultural heritage and acculturation, so the results may differ if

applied to other subjects. Furthermore, data collection relied primarily on classroom observations, which are influenced by situational factors during the learning process.

Based on these limitations, further research is recommended to expand the scope by involving more classes or different schools to increase the generalizability of the findings. Future studies could also extend the number of cycles to obtain more stable and comprehensive improvements in learning outcomes. Furthermore, it is recommended that researchers explore the use of the Problem-Based Learning (PBL) model in combination with various types of learning media to compare their effectiveness across subjects. Finally, further research could also integrate more diverse assessment instruments, such as interviews or student reflections, to gain deeper insights into students' learning activities and engagement.

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## REFERENCES

- Abrori, F., Haikal, M., Antika, L. T., & Imana, L. (2024). Pengaruh problem-based learning terhadap keaktifan dan motivasi belajar peserta didik MTs. *Multi Discere Journal*, 3(2), 112-125.
- Arikunto, S. (2017). Dasar-dasar evaluasi pendidikan. Jakarta: Bumi Aksara.
- Asyafah, Abas. 2019. Menimbang Model Pembelajaran (Kajian Teoretis-Kritis Atas Model Pembelajaran Dalam Pendidikan Islam). *Tarbawy: Indonesian Journal Of Islamic Education* 6(1): 19-32. Doi:10.17509/T.V6i1.20569.
- Dalam Kegiatan Pembelajaran Di Kelas. *Jurnal Sosial Humaniora Dan Pendidikan*, 2(2), 114-122.  
<https://doi.org/https://doi.org/10.55606/inovasi.v2i2.764>
- Djamarah, S.B., & Zain, A. (2021). *Strategi Belajar Mengajar*. Jakarta. Rineka Cipta
- Eismawati, Eka, Henny Dewi Koeswanti, & Elvira Hoesein Radia. 2019. Peningkatan Hasil Belajar Matematika Melalui Model Pembelajaran *Problem*

- Based Learning* (PBL) Peserta didik Kelas 4 SD. *Jurnal Penelitian Matematika Dan Pendidikan Matematika*. 3(2): 71-78.
- Gulo, Abdiana. 2022. Penerapan Model Pembelajaran Problem Based Learning Dalam Meningkatkan Motivasi Dan Hasil Belajar IPA. *Educativo: Jurnal Pendidikan* 1(1): 334-41. Doi:10.56248/Educativo.V1i1.58.
- ariani MD, Pipit Putri, & Alfitriani Siregar. 2019. Penggunaan Model Pembelajaran PBL Untuk Mengembangkan Karakter Belajar Melalui Jurnal Ilmiah. *Biblio Couns : Jurnal Kajian Konseling Dan Pendidikan* 2(1): 14-25. Doi:10.30596/Bibliocouns.V2i1.2324.
- Handayani, Anik, & Henny Dwi Koeswanti. 2021. Meta-Analisis Model Pembelajaran Problem Based Learning (PBL) Untuk Meningkatkan Kemampuan Berpikir Kreatif. *Jurnal Basicedu* 5(3).
- Izzah, A. N., & Setiawan, D. (2023). Penggunaan media pop up book sebagai media belajar yang menyenangkan di rumah dalam inovasi pembelajaran SD kelas rendah. *Sinar Dunia: Jurnal Riset Sosial Humaniora dan Ilmu Pendidikan*, 2(3).
- Jannah, Y. U., Nurdiansyah, & Caturiasari, J. (2024). Pengaruh model problem based learning (PBL) terhadap keaktifan belajar pada mata pelajaran Pancasila untuk peserta didik sekolah dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 9(3), 1956-1964.
- Kanza, R. F. N., Lesmono, A. D., & Widodo, H. M. 2020. Analisis Keaktifan Belajar Peserta didik Menggunakan Model Problem Based Learning dengan Pendekatan STEM pada pembelajaran fisika materi elastisitas di kelas XI Mipa 5 Sma Negeri 2 Jember. *Jurnal Pembelajaran Fisika*, 9(2), 71-77.
- Mirdad, Jamal, & M I Pd. 2020. Model-Model Pembelajaran ( Empat Rumpun Model Pembelajaran ). *Indonesia Jurnal Sakina*. 2(1): 14-23.
- Musfirah, Nurul Mukhlisa, & Nur Fitri. 2021. Penerapan Model Take And Give Pada Pembelajaran Tema 2 Tentang Persatuan Dan Kesatuan Untuk Meningkatkan Hasil Belajar Peserta Didik Kelas VI UPT SD Negeri 109 Pinrang. *Angewandte Chemie International Edition*, 6(11), 951-952. XX: 82-95.
- Octavia, Shilphy A. 2020. *Model-Model Pembelajaran*. Deepublish: Yogyakarta.
- Putri, D. K., & Purwanti, K. Y. (2023). Pengaruh model pembelajaran problem-based learning (PBL) berbantuan media pop-up book terhadap kemampuan berpikir kritis peserta didik. *Trihayu: Jurnal Pendidikan Ke-SD-an*, 10(1), 56-65.
- Sudjana, N. (2016). *Penilaian hasil proses belajar mengajar*. Bandung: PT Remaja Rosdakarya.
- Usman. 2021. *Ragam Strategi Pembelajaran*. Parepare: IAIN Parepare Nusantara Press
- Rahayu, Sri, Nisa, & Ekasatya Aldila Afriansyah. 2021. "Miskonsepsi Peserta didik SMP Pada Materi Bangun Datar Segiempat." *Plusminus: Jurnal Pendidikan Matematika* 1(1): 17-32.
- Rosyada, A. A., Rahayu, P., & Hikmatunisa, N. P. (2025). Pengaruh model problem based learning berbantuan media pop up book digital terhadap kemampuan berpikir kritis peserta didik sekolah dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(1), 860-866.