# The Use of Tarl and Problem-Based Learning to Improve Learning Outcomes and Critical Thinking in Science for 5th Grade

**Putri Rahmawati[1], Kiki Kartika Widiyanti[2], Rais Hidayat[3], Fajar Perdana[4]**

Department of Teacher Professional Education Program, Faculty of Teacher Training and Education, Universitas Pakuan

Email:  putrirahmawati1004@gmail.com[1], kikikartika55@gmail.com[2], rais72rais@gmail.com[3], fajarperdana009@gmail.com[4]

**Abstract**

This classroom action research aims to enhance students' learning outcomes and critical thinking skills in Natural and Social Sciences by implementing the Teaching at the Right Level approach combined with the problem-based learning model. The background of this study is the low achievement in learning outcomes and suboptimal critical thinking abilities of fifth-grade elementary students in understanding respiratory system concepts. The research was conducted in two cycles using both qualitative and quantitative descriptive methods. Data were collected through observations, assessments of learning outcomes, and critical thinking evaluation sheets. The results indicate that the implementation of differentiated learning strategies and problem-solving significantly enhances students' learning outcomes and critical thinking abilities. The combination of these two approaches has proven effective in creating an active, collaborative learning environment tailored to individual student needs. Therefore, this strategy can serve as a viable alternative for teaching IPAS as well as other subjects in elementary schools.

**Keywords**: TaRL; Problem-Based Learning; Learning Outcomes.

## INTRODUCTION

Basic education is an important foundation in shaping learners' cognitive abilities, attitudes, and skills. The subject of Natural and Social Sciences (IPAS) plays a strategic role in introducing learners to scientific concepts while training critical thinking skills from an early age. However, IPAS learning in many schools is still conducted conventionally and does not empower learners to actively think and solve problems. This is reflected in the low academic scores of learners and the weak critical thinking skills, especially in the material on the respiratory system. Learning outcomes are a measure of students' success in understanding, processing, and applying the information or skills they have learned. Learning outcomes are

a gain for students in terms of attitudes, knowledge, and skills based on learning experiences. Therefore, innovation in teaching is necessary to improve the quality of learning outcomes (Novita & Sundari, 2020). According to Djaali (dalam Afifatusholihah, 2022), in general, learning outcomes are influenced by two main factors, namely internal factors (from within the student) and external factors (from outside the student). Internal factors include health conditions, intelligence levels, interests, motivation, and the learning strategies or methods. Meanwhile, external factors include the family environment, school environment, community, and the conditions of the surrounding environment.

In the context of IPAS learning, learning outcomes are assessed not only from the cognitive aspect but also from students' ability to use their knowledge practically, for example, in maintaining the health of the respiratory system. According to (Somayana, 2020), advancements in students' learning outcomes can also be achieved through an effective learning process by applying engaging and enjoyable methods and models. During the learning process, students will be actively involved and show high interest if the methods used by the teacher can ignite their enthusiasm for learning. Relevant and contextual methods can encourage students to be more actively and reflectively engaged in learning, thereby significantly enhancing their understanding of the material. The assessment of learning outcomes in IPAS education also includes students' abilities in critical thinking, problem-solving, and demonstrating scientific attitudes. Critical thinking is a process of thinking to organize knowledge obtained in a structured manner by critiquing, selecting, solving problems, making decisions, evaluating facts or assumptions, and or logic with rational and justifiable reasons (Winoto & Prasetyo, 2020). The ability to think critically has certain characteristics. According to Ennis (dalam Fakhriyah, 2014) these are: (1) Seeking clear statements from each statement; (2) Seeking reasons; (3) Trying to understand information well; (4) Using sources that have credibility and citing them; (5) Considering the situation and conditions as a whole; (6) Striving to remain relevant to the main idea; (7) Remembering original and fundamental interests; (8) Seeking alternatives; (9) Being open-minded and thinking openly; (10) Taking a stance when there is sufficient evidence to take action; (11) Seek as many explanations as possible if feasible; (12) Be systematic and orderly regarding the parts of the overall issue; and (13) Be sensitive to the level of knowledge and expertise of others. Critical thinking is a process of thinking to organize knowledge obtained in a structured manner by critiquing, selecting, solving problems, making decisions, evaluating facts or assumptions, and/or logic with rational and justifiable reasons  (Winoto & Prasetyo,

2020). The ability to think critically has certain characteristics. According to Ennis (in Fakhriyah, 2014), these are: (1) Seeking clear statements from each statement; (2) Seeking reasons; (3) Trying to understand information well; (4) Using sources that have credibility and citing them; (5) Considering the situation and conditions as a whole; (6) Striving to remain relevant to the main idea; (7) Remembering original and fundamental interests; (8) Seeking alternatives; (9) Being open-minded and thinking openly; (10) Taking a stance when there is sufficient evidence to take action; (11) Seek as many explanations as possible if feasible; (12) Be systematic and orderly regarding the parts of the overall issue; and (13) Be sensitive to the level of knowledge and expertise of others. This emphasizes that teachers need to use approaches and learning models that support this.

This condition indicates the need to implement more innovative and adaptive learning approaches. One relevant approach is Teaching at the Right Level (TaRL), which is a differentiated learning model that aligns the learning process with the actual skill levels of the students. Teaching at the Right Level (TaRL) is a learning approach that focuses on the actual abilities of students, rather than their formal class levels. The main goal of this approach is to improve students' competencies and knowledge, especially in the areas of literacy and numeracy (Fitriani, 2022). In implementing the Teaching at the Right Level (TaRL) learning strategy, four main steps must be taken, namely: assessment to identify students' abilities, grouping based on the results of that assessment, applying basic skills pedagogy that meets the needs of the group, and continuous support and monitoring to ensure the effectiveness of the learning process (Ningrum et al., 2023).TaRL allows teachers to provide more targeted interventions through diagnostic assessments and homogeneous learning groups based on student understanding. "The TaRL approach, or teaching according to ability levels, provides a teaching framework that is tailored to the individual potential of each student. This method is designed with consideration of learning achievements, skill levels, and the needs of each student. Student placement in learning groups is not only based on grade level but also the strengths and unique abilities of each student (Apriliani et al., 2024). This approach is capable of creating a conducive learning environment, encouraging active participation from students, and has been proven effective in improving learning outcomes. This is reinforced by research findings (As'ad et al., 2024) that show the successful implementation of TaRL in the Problem-Based Learning model reaching up to 83%.

The application of the TaRL approach also opens opportunities for teachers to create innovations in teaching strategies. Through this approach, teachers can design more creative

and interactive learning methods, which not only support the improvement of students' literacy and numeracy skills but also sharpen 21st-century skills such as critical thinking, collaboration, and communication (Siwanto & Pisriwati, 2025). In addition to this approach, one of the learning models that can be used by teachers is the Problem-Based Learning (PBL) model, which is an approach that makes students active participants in solving real problems or complex situations. In its implementation, learners are faced with authentic problems that reflect real-world challenges. They work together to identify and analyze these issues, gather relevant information, build conceptual understanding, and design innovative solutions. Problem-Based Learning (PBL) is grounded in the principles of constructivism, where the learning process is actively constructed by learners through collaboration, exploration, and reflection(Lasminawati et al., 2023). The Problem Based Learning (PBL) model has seven main characteristics, namely: learning begins with the presentation of a problem, the issues raised stem from everyday real-life situations, the solutions require the utilization of various types of student intelligence, it challenges students to think critically in searching for solutions, it encourages independent learning, involves various sources of knowledge, and is conducted collaboratively among learners. The steps or syntax in the PBL model include: (1) introduction of a case or problem, (2) organizing students into groups, (3) gathering relevant information and knowledge sources, (4) developing solutions and presenting group discussion results, and (5) analyzing and evaluating the results of the problem-solving undertaken (Hotimah, 2020). The PBL model also fosters students' critical thinking skills in independently and scientifically resolving IPAS issues (Rahmadana et al., 2023)  This is supported by research conducted by Listyaningsih et al., (2023) stating that the utilization of the Problem-Based Learning model in class 5B of SDN Bendan Ngisor, Gajahmungkur District, Semarang City, was successful with an average score increase of 82. A total of 22 students, or 88%, have achieved the minimum completeness criteria (KKM).

Therefore, the enhancement of teachers' capacity in implementing active learning models is an absolute requirement to realize effective IPAS learning. Several studies also show that the combination of differentiation methods, such as TARL with a PBL approach, can be a synergistic strategy to improve learning outcomes as well as the critical thinking skills of students simultaneously (Roro et al., 2024).

Based on this background, this research was conducted to test the effectiveness of the combination of the TaRL approach and the PBL model in improving learning outcomes and critical thinking of 5th-grade students on the respiratory system material in the IPAS subject.

It is hoped that the results of this study can contribute to improving the quality of learning in elementary schools and serve as a reference for developing other innovative learning strategies.

**METHOD RESEARCH**

The method used in this research is Classroom Action Research. Classroom action research is a study conducted by teachers on their students aimed at developing teachers' professionalism by using certain actions. These actions serve the function of improving, enhancing, and developing the learning process and services to improve students' abilities. Classroom action research aims to improve teachers' professional performance, and in addition, it serves as an effort to enhance teachers' skills in delivering learning and services in schools (Utomo et al., 2024).

This research was conducted in two cycles, each consisting of four stages: planning, action implementation, observation, and reflection. The data collected includes students' learning outcomes obtained through tests and observational data regarding the activities of teachers and students during the learning process. The research location is at Ceger 1 Elementary School in Bogor.

The research subjects are the 5B grade students, totaling 20 individuals. The researcher used several techniques to collect data, namely: Observation, which is conducted to observe the students' conditions during the learning process in the classroom, the students' learning achievements after the activities, as well as the activities of the teaching teacher. Tests, in the form of pre-tests and post-tests used to measure the students' abilities before and after learning. Documentation to support the data obtained. The data analysis technique used in this research is the percentage technique. All data collected through observation and tests are analyzed using this technique.

**RESULT AND DISCUSSION**

*Result*

Before carrying out actions in the research, the researcher first goes through the planning stage. At this stage, the researcher designs various activities to be implemented, including: preparing teaching modules, preparing Student Activity Sheets, designing observation sheets to monitor teachers' activities, preparing observation sheets for student

activities, and preparing assessment instruments to measure students' understanding of the material presented.

In the implementation stage, the teacher conducts an initial observation to assess the students' understanding of the IPAS subject matter by administering a pre-test. The purpose of this pre-test is to obtain an initial picture of the learning situation before the classroom action is taken, as well as to serve as a benchmark for comparison with the results after the actions are implemented. The results of the pre-test activities are shown in the table below:

Table 1. Pre-Test Results of Students in Initial Observation

| Interval Value | Category Assessment | Number of Students | Total Score | Percentage |
|---|---|---|---|---|
| 75-100 | Complete | 8 | 663 | 40% |
| 0-74 | Not Complete | 12 | 758 | 60% |
| Number | | 20 | 1421 | |
| Average | | | 71,1 | |

Based on the results of the pre-test it shows that the average class score reached 71.1. This score has not yet met the Minimum Completion Criteria (KKM) standard.

Based on the results of the pre-test, the average class score is 71.1, which is still below the Minimum Completeness Criteria (KKM) of 75. Therefore, each student is expected to achieve a minimum score of 75, or classically, the average class must reach at least $\geq 75\%$. The results of the pre-cycle test show that only 8 students (40%) achieved a complete score, while 12 students (60%) did not meet the completeness criteria. This condition is understandable because the students have not studied maximally. Therefore, improving understanding of the IPAS material becomes very important.

In response to the low pre-test results, in cycle I, the teacher took action by applying the Teaching at the Right Level (TaRL) approach and the Problem-Based Learning (PBL) method. This approach was chosen to develop the critical thinking skills of students, create a pleasant and engaging learning atmosphere, and encourage active student participation in the learning process, so that it is expected to improve their learning outcomes.

**Cycle I**

In Cycle I, the teacher begins with the planning stage. In this stage, the teacher prepares the teaching module, prepares the Student Worksheet, creates an observation sheet to monitor the activities of both the teacher and students, and compiles evaluation instruments to assess the students' mastery of the material.

In the implementation stage, the teacher conducts learning based on the teaching module that has been designed beforehand. After the learning activities take place, the teacher proceeds to the observation and evaluation stage. Observations are carried out to see the implementation of actions, both from the teacher's and the students' sides, using the observation sheet that has been prepared. At the end of the learning process, the teacher evaluates the students' learning outcomes by administering a test that is appropriate to the material that has been taught.

The results of the observation of teacher activities show that most of the lesson plans have been implemented. Out of 27 observed aspects, 20 aspects were successfully executed with a completion percentage of 93.5%. Meanwhile, the students' thinking skills in a classical setting have only reached 54.5%.

Table 2. Learning Outcomes of Students Cycle I

| No | Data | Cycle I |
|---|---|---|
| 1. | Number of students | 20 |
| 2. | Highest score | 90 |
| 3. | Lowest value | 60 |
| 4. | Number of students who have completed | 13 |
| 5. | The number of students who did not complete their studies | 7 |
| 6. | The percentage of students who have completed | 65% |
| 7. | The percentage of students who did not complete their studies | 35% |

In the reflection stage, based on the observations and evaluations conducted during cycle I, it was found that several components of the activities, both by the teacher and the students, have not been maximally implemented. This affects the achievement of learning outcomes and the critical thinking skills of the students, which have not met the completeness criteria, both individually and as a whole class. Some aspects that have not been optimally carried out by the teacher include: the use of learning approaches that are not maximized,

the need to review the materials presented, and teachers' skills in responding to and addressing students' questions or opinions still need to be improved.

Meanwhile, from the students' side, the activities that have not been optimally carried out include: lack of students' attention when the teacher explains the lesson, minimal active participation of students in expressing opinions and answering questions posed by the teacher, students' ability to design alternative solutions to learning problems posed by the teacher is still relatively low.

**Cycle II**

Based on the reflection results from cycle I, the teacher made several improvements in the planning stage for cycle II. The teacher revised the learning action plan by considering the shortcomings that occurred previously. Although the designed steps still follow the same pattern as cycle I, there are adjustments and refinements in several parts of the activities to make the implementation more effective. In this stage, the teacher carries out the learning process according to the steps outlined in the updated teaching module. Approaches and learning models are designed to further encourage active participation of students and optimize the time and media used. The teacher observes the learning process, including the activities of both the teacher and the students. This observation uses the same observation sheet as in the previous cycle. At the end of the lesson, the teacher gives a test to evaluate students' understanding of the material that has been taught.

Based on the observation results, all the learning activities designed were almost entirely successfully executed by the teachers. Out of a total of 27 observed indicators, 25 indicators were implemented well, resulting in an implementation percentage of 98.1%. Meanwhile, the level of students' critical thinking skills has increased classically to 79.5%. Analysis of students' learning outcomes in cycle II shows a significant improvement compared to cycle I. Detailed data on student scores is presented in the table below.

Table 3. Learning Outcomes of Students Cycle II

| No | Data | Cycle II |
|----|------|----------|
| 1. | Number of students | 20 |
| 2. | Highest score | 100 |
| 3. | Lowest score | 60 |
| 4. | Number of students who have completed | 18 |

| | | |
|---|---|---|
| 5. | The number of students who did not complete their studies | 2 |
| 6. | The percentage of students who have completed | 90% |
| 7. | The percentage of students who did not complete their studies | 10% |

Based on the results of the observation and evaluation of the implementation of actions in cycle II, there was an improvement in the quality of teacher activities, students' critical thinking skills, and students' learning outcomes. All aspects of the activities designed for teachers were successfully carried out. This occurred because the students had begun to get used to participating in learning using the Teaching at the Right Level (TaRL) approach and the Problem Based Learning (PBL) method, as well as the use of concrete media in the form of a replica of the human respiratory system made from recycled materials, which was used in the science learning. This media helped stimulate students' critical thinking skills, and students could understand the material more easily, making them more active and enthusiastic in the learning process.
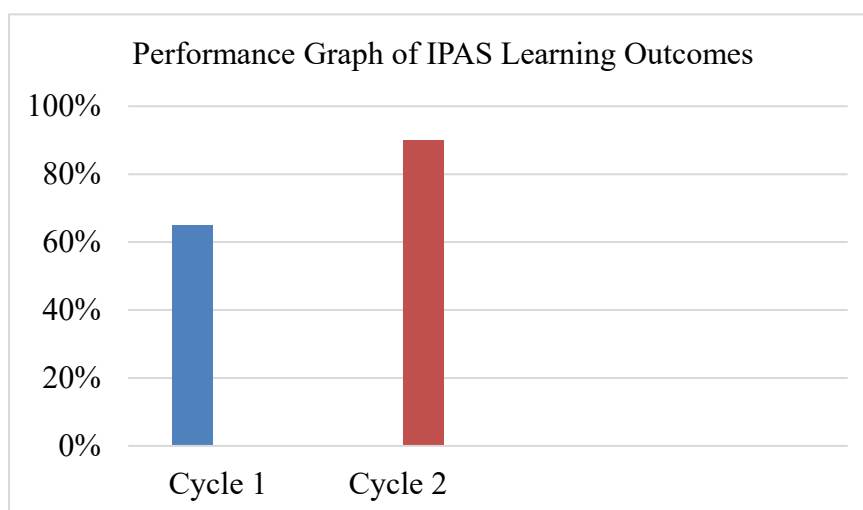
*Discussion*

This classroom action research was conducted in two cycles by applying the TaRL approach and the PBL method in IPAS learning. The results obtained showed an increase in student learning outcomes from the pre-cycle stage to cycle I, and then to cycle II. This illustrates that the approaches and learning methods applied are effective in improving learning outcomes and enhancing students' critical thinking skills, as evidenced by the evaluation results at each stage.

Table 4. Learning Outcomes of Students Cycle I and II

| No. | Data Criteria | Cycle I | Cycle II |
|---|---|---|---|
| 1 | Number of students | 20 | 20 |
| 2 | Highest score | 90 | 100 |
| 3 | Lowest score | 60 | 60 |
| 4 | Number of students who have completed | 13 | 18 |
| 5 | The number of students who did not complete their studies | 7 | 2 |

| 6 | The percentage of students who have completed | 65% | 90% |
|---|---|---|---|
| 7 | The percentage of students who did not complete their studies | 35% | 10% |

Based on the data in Table 4, there was an increase of 25% in the percentage of classically completed learning from cycle I to cycle II. This improvement is inseparable from the efforts to optimize the implementation of learning steps using the Teaching at the Right Level (TaRL) approach and the Problem-Based Learning (PBL) method, which were not maximized in cycle I. The graph of the learning outcomes in the IPAS subject shows a positive increase.



Graph 1. Performance Graph of IPAS Learning Outcomes

In the graph of learning achievement results for the IPAS subject, it can be concluded that there is an improvement in learning outcomes. The graph indicates that there is an increase in the IPAS learning outcomes of students from cycle I to cycle II, achieved through the implementation of the TaRL learning approach and the PBL method in the learning process of the IPAS topic on respiration, as seen in the table below:

Table 5. Results of Teacher Activity Observations Cycle I and Cycle II

| No | Implementation of Learning | Cycle I | Cycle II |
|----|---------------------------|---------|----------|
| 1. | The number of activities that must be carried out | 27 | 27 |
| 2. | Number of activities carried out | 20 | 25 |
| 3. | Percentage of implementation | 93,5% | 98,1% |

During the implementation of learning from cycle I to cycle II, the teacher's ability to manage the teaching and learning process also showed an improvement, with an increase of 4.6%. The shortcomings and obstacles that occurred in cycle I were addressed by the teacher by improving class management, so that the implementation in cycle II ran more optimally.

The activities of students in learning have also increased. In cycle I, the level of student participation was recorded at 54.5%, and it increased to 79.5% in cycle II, indicating an improvement of 25%. Initially, students were still not accustomed to responding to questions and problem-solving presented by the teacher, resulting in their involvement in learning activities being low. However, in cycle II, students started to adapt to the TaRL approach and the PBL method along with the concrete media displayed by the teacher, and they were able to develop critical thinking skills during the learning activities.

The application of the TaRL approach and the PBL model makes students more critical, confident, and active, thereby improving students' learning outcomes. Thus, it can be concluded that after the optimal implementation of the TaRL approach and the PBL model, the learning outcomes and critical thinking skills of students experience significant improvement. Although the level of completeness has not yet reached 100%, a completeness level of 90% already reflects the effectiveness of this approach and method in enhancing learning outcomes in IPAS and critical thinking skills.

**CONCLUSION**

The implementation of the Teaching at the Right Level (TaRL) approach combined with the Problem-Based Learning (PBL) model has proven to have a positive impact on improving learning outcomes and critical thinking skills of 5th-grade students in the respiratory system material of Science. This approach encourages teachers to be more responsive to the learning needs of each individual, while PBL helps students actively solve problems collaboratively and reflectively.

The learning process that took place over two cycles showed significant development, both in cognitive aspects and critical thinking skills. The learning outcomes improved from an average of 65% of students who completed in cycle I to 90% in cycle II. In addition, the involvement and activity of students in the learning process also experienced a noticeable increase, in line with the use of concrete media that facilitated the understanding of concepts.

In general, the TaRL approach and the PBL model can be combined to establish a more inclusive, meaningful learning environment that is capable of addressing the challenges of 21st-century education. With these positive outcomes, the method is worthwhile to suggest as a cutting-edge teaching method for social studies classes as well as other primary school subjects.

**REFERENCES**

Afifatusholihah, A. D. (2022). Pengaruh Metode Mengajar Guru Dan Fasilitas Belajar Terhadap Hasil Belajar Ips. *Dinamika Sosial: Jurnal Pendidikan Ilmu Pengetahuan Sosial*, *1*(1), 13. https://doi.org/10.18860/dsjpips.v1i1.1010

Apriliani, P. I., Prayito, M., Jannah, F. M., Guru, P. P., & Semarang, U. P. (2024). Efektivitas Pendekatan Teaching at The Right Level ( Tarl ) Terhadap Hasil Belajar Matematika Siswa Kelas IV SDN Pedurungan Kidul 01. *Journal Of Social Science Research*, *4*(2), 1676–1685. http://j-innovative.org/index.php/Innovative/article/view/9509

Fakhriyah, F. (2014). Penerapan problem based learning dalam upaya mengembangkan kemampuan berpikir kritis mahasiswa. *Jurnal Pendidikan IPA Indonesia*, *3*(1), 95–101. https://doi.org/10.15294/jpii.v3i1.2906

Fitriani, S. N. (2022). Analisis Peningkatan Kemampuan Literasi Siswa Dengan Metode ADABTA Melalui Pendekatan TARL. *BADA'A: Jurnal Ilmiah Pendidikan Dasar*, *4*(1), 69–78. https://doi.org/10.37216/badaa.v4i1.580

Hotimah, H. (2020). Penerapan Metode Pembelajaran Problem Based Learning Dalam Meningkatkan Kemampuan Bercerita Pada Siswa Sekolah Dasar. *Jurnal Edukasi*, *7*(3), 5. https://doi.org/10.19184/jukasi.v7i3.21599

Lasminawati, E., Kusnita, Y., & Merta, I. W. (2023). Meningkatakan Hasil Belajar dengan Pendekatan Pembelajaran Culturally Responsive Teaching Model Probem Based Learning. *Journal of Science and Education Research*, *2*(2), 44–48. https://doi.org/10.62759/jser.v2i2.49

Listyaningsih, E., Nugraheni, N., & Yuliasih, I. B. (2023). Peningkatan Hasil Belajar Melalui Pendekatan TarlModel PBL Dalam Matematika Kelas V SDN Bendan Ngisor. *Madani: Jurnal Ilmiah Multidisipline*, *1*(6), 620–627. https://doi.org/10.5281/zenodo.8139269

Muhammad cholil as'ad, Sulistyarsi, A., & juli sukirmawati. (2024). EduInovasi : Journal of Basic Educational Studies EduInovasi : Journal of Basic Educational Studies. *Journal of Basic Educational Studies*, *2*(1), 85–97.

Ningrum, M. C., Juwono, B., & Sucahyo, I. (2023). Implementasi Pendekatan TaRL untuk Meningkatkan Motivasi Belajar Peserta Didik pada Pembelajaran Fisika. *PENDIPA Journal of Science Education*, *7*(1), 94–99. https://ejournal.unib.ac.id/index.php/pendipa94

Novita, L., & Sundari, F. S. (2020). Peningkatan Hasil Belajar Siswa Menggunakan Media Game Ular Tangga Digital. *Jurnal Basicedu*, *4*(3), 716–724. https://doi.org/10.31004/basicedu.v4i3.428

Rahmadana, J., Khawani, A., & Roza, M. (2023). Penerapan Model Problem Based Learning untuk Meningkatkan Kemampuan Berpikir Kritis Peserta Didik Sekolah Dasar. *Jurnal Basicedu*, *7*(1), 224–230. https://doi.org/10.31004/basicedu.v7i1.4278

Roro, R., Ayu, R., Putri, D., Winingsih, P. H., Setyorini, S., & Zusroni, A. (2024). *Prosiding Seminar Nasional Pendidikan Profesi Guru Pembelajaran IPA Terintegrasi TaRL-SEL dengan PBL dalam Meningkatkan Hasil Belajar , Berpikir Kritis , & Sosial-*. *3*(1).

Siwanto, D. H., & Pisriwati, S. A. (2025). *Tantangan Implementasikan Pendekatan TaRL untuk Meningkatkan Kemampuan Matematis Siswa*. *4*(1), 45–51. https://doi.org/10.59373/academicus.v4i1.81

Somayana, W. (2020). Peningkatan Hasil Belajar Siswa melalui Metode PAKEM. *Jurnal Pendidikan Indonesia*, *1*(03), 283–294. https://doi.org/10.59141/japendi.v1i03.33

Utomo, P., Asvio, N., & Prayogi, F. (2024). Metode Penelitian Tindakan Kelas (PTK): Panduan Praktis untuk Guru dan Mahasiswa di Institusi Pendidikan. *Pubmedia Jurnal Penelitian Tindakan Kelas Indonesia*, *1*(4), 17. https://doi.org/10.47134/ptk.v1i4.821

Winoto, Y. C., & Prasetyo, T. (2020). Efektivitas Model Problem Based Learning Dan Discovery Learning Terhadap Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Jurnal Basicedu*, *4*(2), 228–238. https://doi.org/10.31004/basicedu.v4i2.348