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The Efforts to Improve Learning Outcomes Using Learning Models Project Based Learning in Thematic Subjects Theme 9 Subtheme 2 Class IV SD Negeri 2 Sawah Brebes

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ABSTRACT

This research was conducted to improve student learning outcomes in the eye. Thematic lesson Theme 9 Subtheme 2 uses the Project Based Learning model. The research method used in this research is descriptive qualitative. This research uses a classroom action research design consisting of over two cycles. The subjects in this research were class IV students at SD Negeri 2 Sawah Brebes, with a total of 26 students, consists of 12 male students and 14 female students. The research procedure consists of the planning stage, implementation of actions, observation and reflection. Data collection technique using observation techniques, student learning outcomes tests, and interviews. This research shows that the learning outcomes of students in the pre-cycle got an average value of 61.54 then increased to 68.62 in cycle I, and became 89.53 in cycle II. Percentage of completeness experienced increase from 50% (pre cycle), to 69.23% (cycle I) to 96.15% in cycle II. It was concluded that the research results showed the use of the model. Project Based Learning can improve learning activities and outcomes students in thematic subjects theme 9 subtheme 2 class IV SD Negeri 2 Sawah Brebes.

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1. INTRODUCTION

Education is one of the most important things in improving quality human Resources. Education is said to be quality if the students demonstrate a high level of mastery of appropriate learning tasks with educational goals and objectives. Undang-Undang 20 2007 Concerning the National Education System, it is stated that Education is a conscious, planned effort to create an atmosphere of learning and learning process so that students actively develop their potential himself to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed for himself, society, nation and state (Sakban and Sundawa, 2023). Education in the 21st century is marked with the rapid development of science and technology in particular in the field of information technology. According to (Huang and Qiao, 2024), Education facing increasing challenges, one of which is education creating human resources that are fully capable of facing various life challenges. Education is a fundamental important thing for a human's life. Through education humans can gain various information and knowledge that is useful for developing self-ability and survival.

According to (Sumarwi and Supardi, 2023), education also has an influence on life and nation development in order to prepare quality and competent human resources. Education is a conscious effort in a planned learning process so that later students become better human. Basic education as initial education is also very important influence on subsequent education. (Qorib, 2024) explained that Teachers can make things easier for students' learning process, by give students the opportunity to discover their own ideas and teaching students to be aware and consciously use their strategies themselves to learn (Puad and Ashton, 2023). Thus, the learning paradigm is not again in the context of transferring knowledge from teachers to students however. The students themselves build that knowledge, so the role of the teacher in learning as a tutor, facilitator, mentor as well as mediator and student motivator. However, if educators have not carried out their role to the maximum, this will cause problems in the process learning (Nasti and Alwi, 2023).

The problems found include poor learning develop students' abilities as a whole including the affective domain, cognitive, and psychomotor. Learning activities should be centered for students is still dominated by the role of education as a transformer knowledge. Educators have not developed learning strategies and methods which stimulates students to determine, design and complete a project to produce a work or product (Ritz and Sherf, 2023). During implementation learning, educators have not fully played the role of mediator, facilitator, and motivators can be seen from educators' efforts in providing innovative media and interactive for students has not been carried out. According to Bruner (Qorib, 2024), trying to find solutions to problems and knowledge on their own accompanying it will produce truly meaningful knowledge. Trying to find solutions to problems independently will do that provide a concrete experience that will later be experienced provide special meaning for students.

One learning model that can improve the results of learning activities students in the class are Project Based Learning. Learning model Project Based Learning provides opportunities for students to work independently or in groups in constructing products authentic that originates from real problems in everyday life (Rachman and Wibowo,

2025). Participant Students actively manage their learning by doing real work produce real products by Minister of Education and Culture. Next it is explained that Project Based Learning can reduce competition in the classroom and directing students to be more collaborative rather than working individually. In line with several opinions above, (Tianti et al., 2024) that Project Based Learning can improve student learning outcomes, increase activity and student involvement in learning, fostering creativity and work students, more fun, and useful and more meaningful.

According to (Pirdaus, 2024) the Project Based Learning model is a teaching approach that is built on learning activities and real tasks provide challenges to students related to everyday life to solved as a group. application of the Project Based learning model Learning is effective in improving learning outcomes and student creativity elementary school. Based on the presentation of this data, it encourages researchers to carry out teaching practices that emphasize more on the application of models Project Based Learning to improve learning outcomes in the eye thematic lesson theme 9 subtheme 2 for class IV students at SD Negeri 2 Sawah Brebes. The problem formulation in this research is how to improve learning outcomes using learning models Project Based Learning in thematic subjects theme 9 subtheme 2 class IV elementary school Negeri 2 Sawah Brebes? The aim of this research is to determine the increase in learning outcomes using the Project Based Learning learning model in subjects thematic theme 9 subtheme 2 class IV SD Negeri 2 Sawah Brebes.

2. METHOD

This research uses a classroom action research design. According to (Culp and Davis, 2023), classroom action research is research conducted by the class teacher himself by planning, implementing, and reflect on actions collaboratively and participatively with purpose improve their performance as a teacher, so that student learning outcomes can be achieved increase. PTK is carried out in two cycles, each cycle consisting of four stages, namely the action planning stage, action implementation stage, stage observation, and reflection stage. Before taking that action will be used, researchers carry out observations, interviews, and pre-action cycles to determine the initial abilities of students. The research was carried out in class IV of SD Negeri 2 Sawah Brebes. Cycle I was held on May 24 2023 and cycle II will be held on May 26 2023, each implementation located time 5x35 minutes.

The subjects in this research were 26 class IV students at SD Negeri 2 Sawah Brebes, consisting of 12 male students and 14 female students. The reason for choosing the subject was based on the problem that students were less active in learning activities and learning outcomes in theme 9 subtheme 2 were still low, this was shown by the results of the scores obtained under the KKM.

The techniques used for data collection in this research are; observation is a method or way of systematically analyzing and recording behavior by viewing or observing individuals or groups directly (Nguyen and Habók, 2024), interviews are used to determine students' previous activity abilities, a test is a set of stimuli given to someone with the aim of getting answers that are used to determine a numerical score (Culp and

Davis, 2023). This technique is used to measure student learning outcomes in understanding thematic subjects theme 9 subtheme 2.

In determining the achievement of student learning outcomes, indicators of success are used, namely student learning outcomes obtained through written tests where students get a score of >70. Meanwhile, to determine the level of learning success of individual students, it is in accordance with the KKM set by the school, namely 70. After the data is collected, to obtain the final score (NA) based on the KKM that has been set by the school, the final score is obtained using the formula:

$$\text{Final Value} = \text{Total Score Obtained} : \text{Total Score} \times 100.$$

According to (Crawford et al., 2023), the formula for calculating the class average value uses the formula: Class Average = The sum of the scores of all students : Number of students.

According to (Mauliana, et al., 2024), classical learning completeness is the completeness of learning in class. A class is said to be complete in a lesson if the learning outcomes of all students who exceed the KKM in that class reach 75%.

The following is the formula for calculating the percentage of learning completeness:

$$\text{Learning Completeness} = \frac{\text{Total students who exceed the KKM}}{\text{Number of Students}} \times 100\%$$

Apart from the completeness of learning outcomes, in this research observations were made of students' learning activities. Data analysis to find the percentage of learning activities, the formula proposed by (Felix and Felix, 2024) is used as follows:

With the following information:

P = percentage number

f = frequency that appears

N= number of frequencies or number of individuals (number of cases)

Next, the percentage results will be averaged and adjusted to the average percentage criteria. According to (Nguyen and Habók, 2024) the benchmarks used are as follows:

- Category 86% to 100% is classified as very high
- Category 76% to 85, % is classified as high
- Category 60% to 75% is classified as moderate
- Category 0 to 59% is classified as low

Based on the data that has been obtained from data analysis techniques, the next step is to draw conclusions regarding the level of success of the actions that have been taken. From drawing conclusions in data analysis techniques, the results and discussion will then be presented.

3. RESULTS AND DISCUSSION

The classroom action research procedure consists of 2 cycles, each cycle carried out at 2 meetings. The first cycle phase was designed from the results of reflection on previous learning activities, while the second cycle phase was developed from the

results of the first cycle reflection. Carrying out this research began with carrying out pre-cycle activities to collect data on student learning outcomes in thematic learning theme 9 subtheme 2. Apart from collecting learning results, the researcher also conducted a written test for this theme. Then, based on the learning outcomes data and written test results, it is analyzed to find out the causes of low learning scores in class IV at SDN 2 Sawah Brebes. More details the learning outcomes data and written test results can be seen in the following **Table 1**.

Table 1. Learning outcomes data and written test results

Criteria	Pre-cycle	
	Amount	Percentage
Completed	13	50%
Not Completed	13	50%
Amount	26	100%
Highest Score	80	
Lowest Score	10	
Average	61,54	

Source: Vanalita, 2025.

Based on this table, it can be seen that the results are the average value for the eye Thematic lesson theme 9 subtheme 2 is still below the KKM, namely 61.54.

Meanwhile, the number of students who completed was 13 with a complete percentage by 50%. Based on these values, the researcher carried out activities learning on thematic subjects theme 9 subtheme 2 for participants Class IV students at SD N 2 Sawah Brebes using the learning model Project Based Learning (PjBL).

After observing the learning outcomes of students at the pre-cycle stage, next is to carry out cycle 1 which consists of the planning, implementation, observation and reflection. In the implementation of cycle I using a model Project Based Learning (PjBL) learning. The following are the results of the eye study thematic lesson Theme 9 Subtheme 2 in Cycle I which has been implemented. More details the results of the eye study thematic lesson Theme 9 Subtheme 2 in Cycle I can be seen in the following **Table 2**.

Table 2. the results of the eye study thematic lesson Theme 9 Subtheme 2 in Cycle I

Criteria	Cycle 1	
	Amount	Percentage
Completed	18	69,23%
Not Completed	8	30,77%
Amount	26	100%
Highest Score	85	
Lowest Score	40	
Average	68,62	

Source: Vanalita, 2025.

Based on this table, it can be seen that the average score in the thematic subject theme 9 subtheme 2 in cycle I is still below the KKM, namely 68.62. The number of students who completed was 18 students with a completion percentage of 69.23%. In

this case, the learning outcomes for thematic subjects theme 9 subtheme 2 for class IV students at SD Negeri 2 Sawah Brebes have improved, but the average class score obtained still has not reached the KKM. Therefore, the researcher continued the Cycle II research by learning thematic subjects theme 9 subtheme 2 for class IV students at SD Negeri 2 Sawah Brebes using the Project Based Learning (PjBL) model.

In the implementation of cycle II, the Project Based Learning (PjBL) learning model is used with more complete learning tools and using supporting media. The following are the results of learning the thematic subject Theme 9 Subtheme 2 in Cycle II which has been implemented. More details the results of the eye study thematic lesson Theme 9 Subtheme 2 in Cycle II can be seen in the following **Table 3**.

Table 3. Results of the eye study thematic lesson Theme 9 Subtheme 2 in Cycle II

Criteria	Cycle II	
	Amount	Percentage
Completed	25	96,15%
Not Completed	1	3,85%
Amount	26	100%
Highest Score	100	
Lowest Score	65	
Average	89,53	

Source: Vanalita, 2025.

Based on this table, it can be seen that the average score in the thematic subjects theme 9 subtheme 2 in cycle II has reached the KKM, namely 89.53. The number of students who completed was 25 students with a completion percentage of 96.15%. In this way, learning through the use of the Project Based Learning (PjBL) learning model in thematic subjects theme 9 subtheme 2 class IV SD Negeri 2 Sawah Brebes can be successful.

The following is a comparative table of learning outcomes for each cycle in thematic subjects theme 9 subtheme 2 using the Project Based Learning (PjBL) learning model in class IV of SD Negeri 2 Sawah Brebes. More details can be seen in the following **Table 4**.

Table 4. Results of comparative learning outcomes for each cycle in thematic subjects theme 9 subtheme 2 using the Project Based Learning (PjBL)

Criteria	Pre-cycle	Cycle I	Cycle II
Completed	50%	69,23%	96,15%
Not Completed	50%	30,77%	3,85%
Average	61,54	68,62	89,53

Source: Vanalita, 2025.

Based on the table above, it can be seen that there are differences in learning outcomes for each cycle. The results obtained were not optimal in cycle I, there were 69.23% of students who completed and 30.77% of students did not complete. Then after cycle 2 there was an increase in learning outcomes where the completion score reached 96.15%. This shows that by implementing the Project Based Learning (PjBL) learning model, it can improve student learning outcomes in class IV of SD Negeri 2 Sawah Brebes.

To see the increase in the average value of learning outcomes, below is a diagram of the increase in completeness of learning outcomes for thematic subject theme 9 sub-theme 2 using the Project Based Learning (PjBL) learning model in class IV of SD Negeri 2 Sawah Brebes. More details can be seen in the following **Figure 1**.

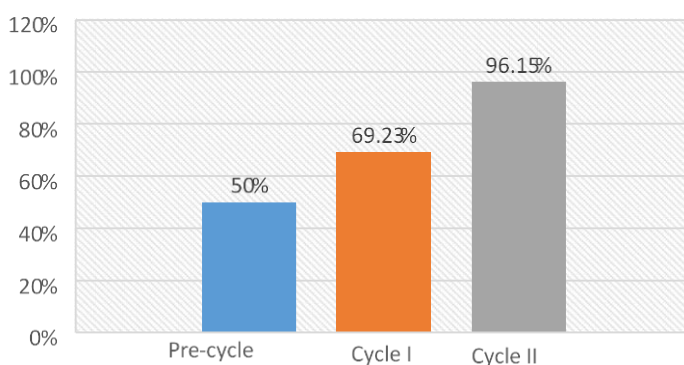


Figure 1. Diagram of The Increase in Completeness of Learning Outcomes

Source: Vanalita, 2025.

In this research, apart from assessing learning outcomes, observations and observation were also carried out to determine students' activities in thematic learning theme 9 subtheme 2 using the Project Based Learning (PjBL) learning model in class IV of SD Negeri 2 Sawah Brebes. The following **Table 5** is a recapitulation of the results of observing student activities.

Table 5. Results of comparative learning outcomes

Student Activities	Pre-cycle	Cycle I	Cycle II
Presentage	58,53%	68,73%	84,83%
Categorized	Low	Medium	High

Source: Vanalita, 2025.

Based on the table above, it can be seen that there is an increase in student learning activities that occurs in each cycle. In the initial observation, the average learning activity of students was 58.53%, in cycle I there was an increase with an average of 68.73%, after being given action in cycle II it increased to 84.83%. The average learning activity of students in the initial observation was categorized as low, while the average learning activity of students in cycle I was categorized as medium, and the average learning activity of students in cycle II was categorized as high. This shows that the application of the Project Based Learning (PjBL) learning model in thematic subjects theme 9 subtheme 2 is able to increase the learning activities of students in class IV of SD Negeri 2 Sawah Brebes.

Based on the results of research conducted in two cycles on student learning outcomes in thematic subjects theme 9 subtheme 2, it can be explained as follows, the average learning outcomes of students in cycle I have not yet reached the KKM. This shows that learning has not shown optimal results because students still do not understand learning techniques using the Project Based Learning (PjBL) learning model. The use of learning models still feels strange because previously educators only used the

lecture method. After reflecting on the results of cycle I, and understanding the shortcomings of the learning carried out, the researcher then carried out better planning in implementing learning in cycle II.

In cycle II, making action plans. In cycle II, the activities carried out were making better learning tools consisting of learning implementation plans (RPP), teaching media, LKPD, teaching materials and assessment instruments. This was further supported by discussions between researchers and teachers about the learning process and how to condition students to remain active and focused on the lessons being taught.

During implementation, educators pay more attention to students' level of understanding in following each stage of learning using the Project Based Learning learning model. The implementation of learning in cycle II is more conducive because educators always monitor students and guide students well (Afzal and Tumpa, 2025). So this has an impact on students' learning outcomes, namely an increase in learning outcomes from the previous cycle. In cycle II, the average student learning outcomes had reached the KKM. There was an increase in the average learning outcomes from cycle I, 68.62, to 89.53 in cycle II. Thus, the application of the Project Based Learning learning model Theme 9: The Richness of My Country and Subtheme 2: Utilization of natural wealth in Indonesia can improve student learning outcomes. So the implementation of class actions in Cycle II was declared successful.

In this research, apart from assessing learning outcomes, observations and observation were also carried out to determine students' activities in thematic learning theme 9 subtheme 2 using the Project Based Learning (PjBL) learning model in class IV of SD Negeri 2 Sawah Brebes. Based on observations of students' learning activities through thematic learning theme 9 subtheme 2 using the Project Based Learning (PjBL) learning model, it can be explained as follows. In observing students' learning activities in theme 9 subtheme 2 using the Project Based Learning (PjBL) learning model covering several aspects observed. The activity aspects observed include students' learning readiness, cooperation in groups, enthusiasm in learning, responsibility in carrying out assignments, ability to ask questions and the courage to express opinions (Zumaroh et al., 2024).

Based on the results of observations, learning activities in the pre-cycle are still relatively low. This is because educators do not provide a pleasant learning atmosphere. Apart from that, students are less involved in the learning process. Meanwhile, in cycle I, students have begun to show an increase in learning activities, this can be seen through the percentage obtained at 68.73 in the medium category. Students in cycle I began to be interested in the Project Based Learning learning model used by educators. The enthusiasm of students in learning can be seen (Himmi et al., 2025). In this first cycle, the results obtained from observations, both from the observation sheets of students' learning activities, showed better results compared to before. The learning activities of cycle I students increased from pre-cycle observations such as activity aspects, namely students' readiness to learn, cooperation in groups, enthusiasm in learning, responsibility in carrying out assignments, ability to ask questions and the courage to express opinions. It can be concluded that the learning activities of cycle I students have increased compared to previous observations (Isbadrianingtyas et al., 2024).

In cycle II, based on the results of observations of students' learning activities, it was discovered that there had been better changes compared to cycle I. The results showed that students' learning activities in cycle II were in the high category. This can be seen in learning activities, students are more prepared to learn, responsible in carrying out assignments and have the courage to express opinions (Mahrus, 2023). Students feel happy during the learning process, and are serious about the learning process. This increase in activity is supported by the role of educators in organizing learning better. Students get the opportunity to be more active and participate in learning. Educators always monitor project implementation so that students receive guidance when they experience difficulties while completing the projects they have created. In cycle II, the results that researchers obtained from observing students' learning activities showed increasingly better results when compared to pre-cycle and cycle I observations (Al-Kamzari and Alias, 2025).

There was an increase in the average percentage of students' learning activities, namely 58.53% in cycle I, increasing to 68.73%, after being given action in cycle II it increased to 84.83%. The average learning activity of students in the initial observation was categorized as low, while the average learning activity of students in cycle I was categorized as medium, and the average learning activity of students in cycle II was categorized as high. This shows that the application of the Project Based Learning (PjBL) learning model in thematic subjects theme 9 subtheme 2 is able to increase the learning activities of students in class IV of SD Negeri 2 Sawah Brebes. There is an increase in learning outcomes and student learning activities from pre-cycle, cycle I and cycle II observations, although it has not yet reached 100% frequency. This is related to the different characteristics of students, so teachers need to understand students better and provide learning according to the characteristics of the participants educate (Obro, 2023). However, the increase in activity and learning outcomes shows that learning is considered optimal. Thus the research has been successful and can be stopped (Lestari, 2023).

4. CONCLUSION

Based on the research that has been carried out, it can be concluded as the average learning outcomes of students in the pre-cycle have not yet reached the KKM, in cycle I there has been an increase but not yet reached the KKM, and in cycle II they have reached the KKM. Student learning activity in the pre-cycle was still relatively low, then in cycle I there was an increase in student learning activity to the medium category and in cycle II student learning activity increased even more so that it reached the high category. The increase in average learning outcomes shows that the use of the Project Based Learning (PjBL) learning model can improve the learning outcomes of class IV students at SD Negeri 2 Sawah Brebes. Efforts to improve learning outcomes using the Project Based Learning (PjBL) learning model in thematic subjects theme 9 subtheme 2 class IV SD Negeri 2 Sawah Brebes can be successful. The use of the Project Based Learning (PjBL) learning model in thematic subjects theme 9 subtheme 2 class IV SD Negeri 2 Sawah Brebes can increase students' learning activities. Students are more

active in learning activities and active in discussion activities so that students can understand the material well which can improve their learning outcomes by using the Project Based Learning (PjBL) learning model. Completion of learning outcomes has not reached 100% because there are students who need to receive more assistance in learning as well as differences in student characteristics related to learning abilities.

5. REFERENCES

- Afzal, F., and Tumpa, R. J. (2025). Project-based group work for enhancing students learning in project management education: an action research. *International Journal of Managing Projects in Business*, 18(1), 189-208.
- Al-Kamzari, F., and Alias, N. (2025). A systematic literature review of project-based learning in secondary school physics: theoretical foundations, design principles, and implementation strategies. *Humanities and Social Sciences Communications*, 12(1), 1-18.
- Crawford, J., Cowling, M., and Allen, K. A. (2023). Leadership is needed for ethical ChatGPT: Character, assessment, and learning using artificial intelligence (AI). *Journal of University Teaching and Learning Practice*, 20(3), 1-19.
- Culp, M. E., and Davis, V. W. (2023). Using students' interests in general music (part 1): Getting to know learners and conducting research. *Journal of General Music Education*, 36(3), 13-18.
- Felix, C. S., and Felix, C. M. (2024). Literature review: basic statistics in educational research. *Cognizance Journal of Multidisciplinary Studies*, 4(3), 206-215.
- Himmi, N., Armanto, D., and Amry, Z. (2025). Implementation of Project Based Learning (PjBL) in Mathematics Education: A Systematic Analysis of International Practices and Theoretical Foundations. *Science Insights Education Frontiers*, 26(2), 4305-4321.
- Huang, X., and Qiao, C. (2024). Enhancing computational thinking skills through artificial intelligence education at a STEAM high school. *Science and Education*, 33(2), 383-403.
- Isbadriangtyas, N., Sa'dijah, C., Dasna, I. W., and Sutadji, E. (2024). Development of challenges-based learning thematic model to improve critical thinking skills for primary school students. *Research and Development in Education (RaDEn)*, 4(1), 533-542.
- Lestari, P. (2023). Improving Learning Outcomes and Motivation Theme VI Sub Theme 2 Using the Problem-Based Learning Learning Model for Grade IV Students at SD Negeri Banjarsari Samigaluh 2021/2022 Academic Year. *IJCER (International Journal of Chemistry Education Research)*, 1(2), 81-84.

- Mahrus, M. (2023). Developing Cognitive Skills in Number Recognition Through Picture Number Card Media in Early Childhood. *GENIUS: Indonesian Journal of Early Childhood Education*, 4(2), 163-176.
- Mauliana, I., Ulfa, N., and Fitria, A. (2024). Improving Student Learning Outcomes with the Problem Based Learning Model: Classroom Action Research at the State Islamic Primary School. *Indonesian Journal of Education and Social Humanities*, 1(2), 1-8.
- Nasti, B., and Alwi, N. A. (2023). Project-Based Learning Model for Fifth Grade Students: Testing Theme 2 Thematic Teaching Materials Validity. *AL-ISHLAH: Jurnal Pendidikan*, 15(3), 3785-3793.
- Nguyen, L. A. T., and Habók, A. (2024). Tools for assessing teacher digital literacy: a review. *Journal of Computers in Education*, 11(1), 305-346.
- Obro, S. (2023). Efficacy of innovative instructional strategies: effect of learning games strategy on students' learning outcome in social studies classroom. *International Journal of Learning and Change*, 15(1), 96-115.
- Pirdaus, P. (2024). Project-Based Learning Model Increases Student Creativity and Learning Outcomes in Pancasila and Citizenship Education Learning. *Journal of Education Research and Evaluation*, 8(1), 173-182.
- Puad, L. M. A. Z., and Ashton, K. (2023). A critical analysis of Indonesia's 2013 national curriculum: Tensions between global and local concerns. *The Curriculum Journal*, 34(3), 521-535.
- Qorib, M. (2024). Analysis of differentiated instruction as a learning solution in student diversity in inclusive and moderate education. *International Journal Reglement and Society (IJRS)*, 5(1), 43-55.
- Rachman, B., and Wibowo, S. E. (2025). The Use of Problem-Based Learning Model to Improve Integrated Thematic Learning Outcomes. *Jurnal Pedagogi dan Pembelajaran*, 8(1), 187-193.
- Ritz, C., and Sherf, N. (2023). Curriculum, instruction, and assessment: A snapshot of world language education in Massachusetts. *Foreign Language Annals*, 56(1), 29-52.
- Sakban, A., and Sundawa, D. (2023). Character education: Direction and priority for national character development in Indonesia. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran, dan Pembelajaran*, 9(3), 794-807.
- Sumarwi, I. H., and Supardi, Z. A. I. (2023). Development of Interactive Multimedia Learning Media on Alternative Energy to Improve the Understanding of 3rd Grade Elementary School Students. *Studies in Philosophy of Science and Education*, 4(1), 35-42.

Tianti, T., Komalasari, K., and Ratmaningsih, N. (2024). Implementation of project-based learning social studies in Independent Curriculum to reduce students' social loafing. *JIPSINDO*, 11(2), 106-117.

Zumaroh, Z., Nikmah, K., and Shoimah, R. N. (2024). Analysis of Teachers' Problems in the Implementation of the Independent Curriculum at MI Darul Ulum Jelakatur. *AJER: Advanced Journal of Education and Religion*, 1(3), 201-210.