



Increasing understanding of the concept of IPAS through a problem-based learning model assisted by POKATA media for elementary students

Zulfa Arifia Rahmadani^{*1}, Erik Aditia Ismaya², Diana Ermawati³

Universitas Muria Kudus

e-mail: 202133175@std.umk.ac.id¹, erik.aditia@umk.ac.id², diana.ermawati@umk.ac.id³

^{*}Corresponding author

ABSTRACT

This study aims to improve the conceptual understanding of IPAS (Natural and Social Sciences) among fifth-grade students through the implementation of a problem-based learning model assisted by the POKATA media. POKATA is an acronym for "Smart Card Poster", which serves as a tool to facilitate the learning process of IPAS, specifically on the topic of changes occurring on Earth. The research employed a classroom action research method conducted at SD Negeri 3 Kalipucangkulon, with the subjects consisting of 25 fifth-grade students, comprising 13 male and 12 female students. The study was carried out over two cycles, with each cycle comprising two meetings, and included the stages of planning, implementation, observation, and reflection. Data collection techniques included observation, tests, interviews, and documentation. Data analysis techniques involved both qualitative and quantitative analyses. Indicators of conceptual understanding in IPAS included the ability to restate concepts, provide examples, classify, conclude, compare, and explain. The results showed an improvement in students' conceptual understanding of IPAS through the problem-based learning model assisted by the POKATA media. This improvement was evidenced by the number of students achieving mastery, with 12 students (48%) in the first cycle and 20 students (80%) in the second cycle. The application of the problem-based learning model assisted by the POKATA media effectively enhanced students' conceptual understanding of IPAS, as indicated by the achievement of the predetermined success indicators.

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1. INTRODUCTION

Natural and Social Science subjects are subjects that study living and non-living things in the universe and investigate the interactions that occur in them. According to Doyan et al. (2018) natural science is the study of various phenomena that occur in nature. Furthermore, according to Nurluthfiana et al. (2023) explains that social science is an activity that surrounds us, which is related to interactions between humans, events in the past, and efforts to meet needs. Social studies education is a simplified version of social science and is an interdisciplinary science that comprehensively considers issues from the perspective of various social sciences (Hilmi, 2017) .

Based on some of these expert opinions, it is known that natural and social science is the study of phenomena that occur in the universe and its relationship with the surrounding.

IPAS learning in primary schools plays an important role in building the foundation of students' scientific and social knowledge. IPAS subjects combine natural science and social science. It is needed in daily life to solve identifiable problems and fulfill human needs. The application of IPAS must be done carefully to avoid negative impacts on the environment (Putra & Panglipur, 2019). IPAS learning is important to be taught since elementary school level so that students become aware of the environmental conditions around them.

Based on the results of interviews and observations at SD Negeri 3 Kalipucangkulon, several problems were found in understanding the concept of IPAS. Specifically, 1) the lack of appropriate learning media to support the learning process. While the available media are only globes, human skeletons, and solar systems, so that students become bored when they only hear explanations; 2) Students do not understand the concept of IPAS in the material being taught; 3) Some students do not want to learn so that they disturb their friends. Based on these observations, the researcher obtained information that the decline in students' IPAS achievement was caused by a lack of understanding of the IPAS concept. These results are in accordance with the opinion of Diantoro et al. (2020) that learning that takes place in an uninformative way makes learning that takes place unpleasant. The rarity of teachers using concrete learning media makes it difficult for students to understand learning concepts (Ermawati et al., 2024). The fifth grade teacher also said that she often uses learning models such as group discussions, discovery learning, project-based learning, and differentiated learning, but the results achieved are still not optimal.

Concept understanding is important for students to understand IPAS. This is to help students understand the content of IPAS by starting from the basic concepts, because if only memorized it can make them forget quickly. According to Novanto et al. (2021), concept understanding is the ability to explain a knowledge or concept in their own words, interpret what is explained in the form of letters, numbers, pictures and so on, and draw conclusions from this understanding. Further according to Septiana et al. (2021) understanding of concepts aims to avoid misconceptions. The next opinion according to Ermawati & Amalia (2023) which states that "concept understanding ability has a relationship with problem solving", which means that the better a person understands a concept, the easier it is for him to solve problems related to that concept. If someone does not understand the concept well, it is likely that he will have difficulty in finding the right solution. Furthermore, according to Ermawati & Zuliana (2020) which states that "students have to understand the problems on the story problem, plan the solution, work on the problem according to the plan made, and look back on the work that has been done", which means that problem solving includes steps that students must take in solving a problem. First, students must understand the problem in the story problem. After that, they need to plan the solution or the way to solve it. Next, they work on the problem according to the plan that has been made. Finally, students must check their work again to ensure that the answers given are correct. Therefore, it can be concluded that understanding a concept is very important for its application in IPAS learning. Because by understanding the concept, students can focus on the core of the learning material so that what they learn will stick in their memory in the long term, rather than just focusing on memorizing material that they are likely to forget in the short term. However, what happens in schools is that there are still many students who are more often found memorizing concepts or formulas from teachers (Ermawati et al., 2023).

Based on these problems, corrective action is needed to overcome the problems that occur. Researchers offer a problem-based learning model assisted by POKATA media to overcome these problems by increasing students' understanding of the IPAS concept. The problem-based learning model is a student-centered learning model, where they learn through the process of solving real problems. According to Anwar & Jurotun (2019) , the problem-based learning model utilizes existing problems to improve critical thinking and problem solving to extract information and core concepts from learning materials. In line with research that has been conducted by several previous researchers, it shows that through problem-based learning models can improve students' concept understanding. The first relevant research according to Nugraheni et al. (2023)), teachers use problem-based learning models to improve student learning outcomes by activating the model during learning. In line with this opinion, Juenda et al. (2017) revealed that by using the PBL learning model, the average score of concept understanding of each indicator increased by 61.29% in cycle I and 82.88% in cycle II. This better understanding of concepts is also evident in research by Nainggolan et al.(2023) namely in cycle I the average value was 50, while in cycle II the average value increased to 80. Then research Suhaemi et al. (2020)) obtained the results before the learning action of the average student score of 64.07 and the percentage of student learning completeness reached 28.1%. In cycle I, the students' average score was 67.97 and their learning completeness was 49.6%. In cycle II, the students' average score was 78.75 and their learning completeness was 81.2%. Therefore, it can be concluded that the use of appropriate media in social studies learning will improve the understanding of social studies learning concepts of SDN Rawa Badak Selatan 09 students.

In addition to using learning models, researchers also offer learning media to support students' understanding of the IPAS concept. According to Zulfa et al. (2023)), learning media is believed to improve students' understanding of concepts and contribute to improving student learning outcomes. Furthermore, Hilyana et al. (2024) learning media is an intermediary used by teachers to convey learning content to students. This opinion is in line with the opinion of Ardiyanti et al. (2021)) stated that the application of learning models is more effective if supported by the use of learning media.

The learning media used by researchers is POKATA media. POKATA media stands for "Smart Card Poster" which contains images in poster format accompanied by cards containing information about IPAS material. The selection of POKATA media is based on student learning interests that can arouse student interest, so that learning does not feel like pressure.

Based on this explanation, many grade V students still have difficulty in understanding the concepts of IPAS, especially in the material of changes that occur on Earth. This difficulty is caused by the use of learning methods that do not actively involve students and limited interesting learning media. To overcome these problems, an innovative learning model is needed that can increase student involvement and clarify the concepts of IPAS. One alternative that can be used is a problem-based learning model that is assisted by POKATA (Smart Card Poster) media. In connection with these problems, the purpose of this study is to improve the understanding of the concept of IPAS of grade V elementary school students through the application of problem-based learning model assisted by POKATA media.

2. METHOD

The type of research used is classroom action research. According to Utomo et al. (2024)), classroom action research is a research activity carried out by teachers in the classroom in a planned, systematic, and reflexive manner through repeated actions in a cycle of action. This classroom action research was conducted in two cycles of action. The classroom action research cycle involves planning, action, observation, and reflection. The procedure used in this study uses a model for implementing classroom action research according to Arikunto et al. (2019) as follows.

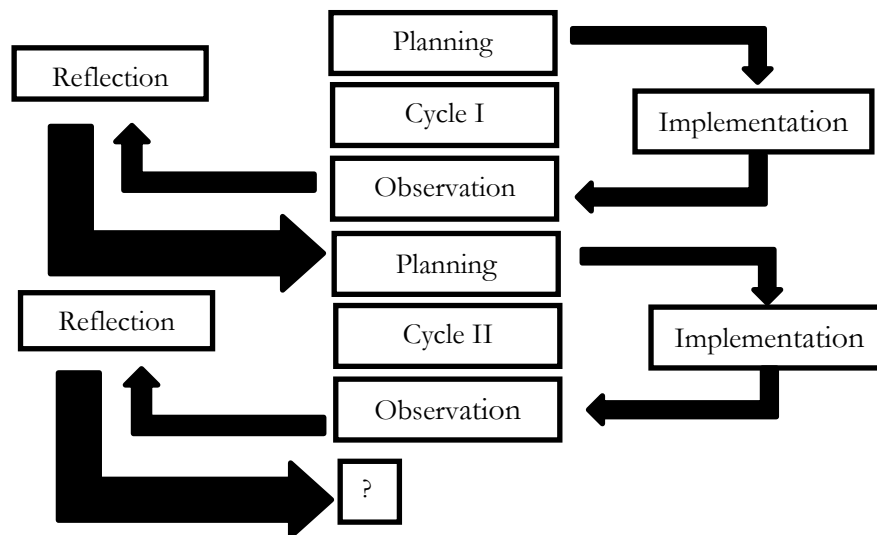


Figure 1 . Classroom Action Research Model According to Arikunto et al. (2019)

The research was conducted at SD Negeri 3 Kalipucangkulon with the research subject consisting of 25 fifth grade students of SD Negeri 3 Kalipucangkulon, consisting of 13 male students and 12 female students in the second semester of the 2024/2025 academic year. SD Negeri 3 Kalipucangkulon is an elementary school located in a rural area, with simple learning infrastructure conditions. Students in this school have varied socio-economic backgrounds and heterogeneous levels of academic ability, so that in the IPAS learning process, there are often difficulties in understanding abstract concepts without the help of media or innovative learning methods. The independent variable in this study is the application of the problem-based learning model assisted by POKATA media. While the dependent variable is the ability to understand the concept of IPAS of fifth grade students of SD Negeri 3 Kalipucangkulon. The data sources used are primary data sources and secondary data sources. Data collection techniques are observation, interviews, tests, and documentation. The research instruments were in the form of a 6-item description evaluation question, observation sheet, and interview sheet. The validity of the instrument was carried out through the expert judgment technique, namely by asking for an assessment from three experts in the field of IPAS education and learning methods. The experts assessed the suitability of the items, the completeness of the indicators on the observation sheet, and the clarity of the questions in the interview sheet based on the aspects of content, construct, and language. The assessment results were used to revise the instrument to meet the eligibility standards and relevance to the research objectives. The data analysis techniques used were qualitative data analysis techniques and quantitative data analysis techniques.

To calculate the completeness value of students' understanding of the IPAS concept, use the following formula.

$$Value = \frac{\text{score obtained}}{\text{maximum score}} \times 100$$

1.

Students can be said to be complete in learning by comparing the results of the scores obtained by students with the IPAS KKTP set at SD Negeri 3 Kalipucangkulon which is 70, which is grouped in the following table.

Table 1 . Criteria for Achievement of Learning Objectives of SD Negeri 3 Kalipucangkulon

Criteria for Completion	Qualification
≥ 70	Completed
≤ 70	Not Completed

If students get a level of completeness ≥ 70 , students are declared complete in learning. Meanwhile, if students get a level of completeness ≤ 70 , students are declared incomplete in learning.

Table2 . IPAS Concept Understanding Ability Criteria (Siregar, 2019)

Value (%)	Criteria
90 - 100	Very High
80 - 89	High
65 - 79	Medium
55 - 64	Low
0-54	Very Low

To calculate the percentage of students' learning completeness classically, researchers used the following formula.

$$K = \frac{T \times 100\%}{N}$$

Description:

K = Learning completeness

T = Number of students who scored ≥ 70

N = Total number of students

Source: (Dayanti et al., 2021)

The learning completeness determined in this study is 70%. Thus, if the classical learning completeness reaches $\geq 70\%$, it can be said that IPAS learning using a *problem-based* learning model assisted by POKATA media has increased.

The average value of students' IPAS concept understanding ability can be calculated using the following formula.

$$X = \frac{\sum X}{\sum N}$$

Description:

X = Average value

$\sum N$ = Number of students

$\sum X$ = Sum of all student scores
Source: (Harefa, 2020)

To calculate the average score of each indicator of understanding the concept of IPAS students can use the following formula.

$$\text{Average score} = \frac{\sum \text{score obtained}}{\sum \text{maximum score}} \times 100$$

Source: Purwanto (2010) in Rosidah et al. (2017)

The expected success indicator in this study is the ability to understand the concept of IPAS students can reach KKTP 70 with classical completeness of $\geq 75\%$.

3. RESULT AND DISCUSSION

The implementation of classroom action research was carried out through three stages, namely pre-cycle, cycle I, and cycle II. The implementation of the research began with pre-cycle activities, namely observation, interviews, and pre-cycle tests. The research was conducted on fifth grade students of SD Negeri 3 Kalipucangkulon with a total of 25 students consisting of 13 male students and 12 female students focusing on the material "My Dear Earth, My Poor Earth" semester II of the 2024/2025 school year. Pre-cycle activities were carried out on September 10, 2024 with the results obtained, namely 56% or 14 students completed KKTP and 44% or 11 students did not complete KKTP. The results of the pre-cycle implementation were used to determine the initial condition of students in participating in IPAS learning. The low acquisition results were due to several factors, including the lack of appropriate media to support learning and some students still had difficulty focusing on participating in the ongoing learning. Based on these results, it is known that the acquisition of student IPAS scores is still low. Therefore, action is needed to overcome these problems. The research continued to the stage of providing action in cycle I by applying the problem-based learning model assisted by POKATA media. The results obtained after the first cycle of action are presented in detail as follows.

Table3 . Evaluation Results of IPAS Concept Understanding Cycle I

Score Range	Predicate	Frequency	Percentage
$90 \leq \text{Student score} \leq 100$	A (Very High)	4	16%
$80 \leq \text{Student score} \leq 89$	B (High)	5	20%
$65 \leq \text{Student score} \leq 79$	C (Medium)	4	16%
Student score < 65	D (Low)	12	48%
Total Value		1540	
Average		62	
KKTP		70	
Number of Students Completed		12	
Number of Incomplete Students		13	

Based on the evaluation results of students' understanding of the IPAS concept in cycle I presented in the table, it is known that 12 students with a percentage of 48% completed KKTP and 13 students with a percentage of 52% did not complete KKTP. The acquisition of cycle I evaluation results decreased compared to the pre-cycle because during the pre-cycle evaluation

test, the material tested had already been studied by students with their class teachers. In addition, during the implementation of cycle I students were still adapting to the learning variations applied by researchers, namely in the form of a problem-based learning model assisted by POKATA media. Through cycle I activities, researchers found problems that occurred during the implementation of IPAS learning cycle I, including some students still having difficulty in answering evaluation questions given by researchers, there were still many students during the learning process who talked to friends who were beside or in front of them so that it disturbed the concentration of other students, and some students were still shy when answering questions from researchers or when going to ask things they did not understand. Due to some of these problems, the results obtained in cycle I were not optimal, so the researchers reflected on learning by fixing the shortcomings that occurred in cycle I and continuing to provide action in cycle II.

The implementation of cycle II action is almost the same as the implementation of cycle I action. However, in cycle II there was a slight difference compared to cycle I, namely with the improvement of the problems found in the previous cycle as a refinement of learning implementation, namely by focusing students on using POKATA media and paying more attention to students and providing motivation and enthusiasm so that they can take part in learning optimally. The results obtained in the implementation of cycle II actions in detail are presented in the following table.

Table4 . Evaluation Results of IPAS Concept Understanding Cycle II

Score Range	Predicate	Frequency	Percentage
$90 \leq \text{Student score} \leq 100$	A (Very High)	10	40%
$80 \leq \text{Student score} \leq 89$	B (High)	7	28%
$65 \leq \text{Student score} \leq 79$	C (Medium)	3	12%
$\text{Student score} < 65$	D (Low)	5	20%
Total Value		1904	
Average		76	
KKTP		70	
Number of Students Completed		20	
Number of Incomplete Students		5	

Based on the results of the evaluation of understanding the concept of IPAS cycle II presented in the table, it is known that as many as 20 students with a percentage of 80% completed KKTP and as many as 5 students with a percentage of 20% did not complete KKTP. These results indicate that there is an increase in the provision of action in cycle II compared to cycle I. The increase can be seen in cycle I, the average score of students was 62 with 14 students complete and 11 students were not complete, then increased in cycle II with an average score of 76 with 20 students complete and 5 students were not complete. In addition, the increase in understanding of the concept of IPAS of fifth grade students of SD Negeri 3 Kalipucangkulon can also be seen in the results of the percentage of classical completeness obtained in cycle II, where the number of students who obtained scores above KKTP showed that it had met the criteria for classical completeness. In line with the opinion of Salsabilla et al. (2023)) that the increase from cycle I to cycle II showed that the efforts to design and implement learning methods in cycle II had a more effective impact on the quality of student participation. The

details of the improvement that occurred in cycle I to cycle II are presented in the following diagram.

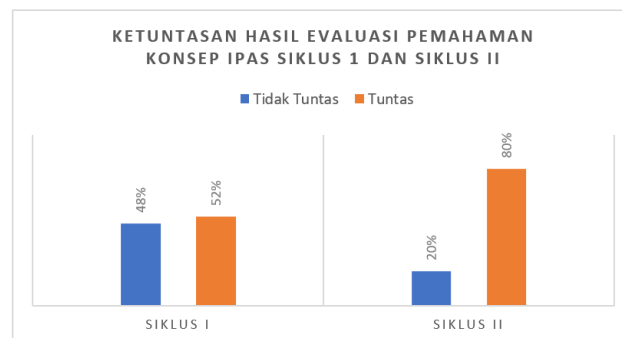


Figure 2 . Percentage of Completion of Evaluation Results of Understanding the Concept of IPAS Cycle I and II

Based on the diagram, it shows that in cycle II there was an increase compared to cycle I after improving the learning that took place. In cycle I, the classical learning completeness obtained was at a percentage of 48% with 12 students who were complete. Then after improvements were made in the provision of cycle II actions, the number of students who experienced completeness increased to 20 students so that in cycle II the percentage of classical completeness increased to 80%. Referring to the results of the acquisition of the evaluation value of understanding the concept of IPAS presented in the diagram, it shows that through the application of the problem-based learning model assisted by POKATA media can improve students' understanding of the concept of IPAS in the IPAS subject material "My Dear Earth, My Poor Earth" in class V of SD Negeri 3 Kalipucangkulon. The improvement in the evaluation results of understanding the concept of IPAS for each indicator is presented in the following table.

Table 5 . Results of Increased Understanding of the IPAS Concept for Each Indicator

Indicator	Cycle I	Cycle II
Restate a concept	69%	76%
Providing examples	69%	59%
Classify	55%	74%
Summarize	71%	86%
Comparing	47%	78%
Explains	73%	81%

The results of the ability to understand the concept of IPAS of SD Negeri 3 Kalipucangkulon students determined based on indicators in cycle I and cycle II are as follows.

Restating a Concept (interpreting)

The percentage of results tested by students on the indicator of restating a concept reached an average score of 69% in cycle I and increased to an average score of 76% in cycle II. This shows that in cycle II many students were able to restate a concept according to their language style and understanding of the material about Earth changes. Based on research Junaid et al. (2021)) stated that the learning process by applying the problem-based learning model showed more effective results as evidenced by the results of higher student test scores than when learning

was still conventional. This is because in learning, students are actively involved in solving a problem through several stages so that students learn about the problem.

Exemplifying

The percentage of student learning outcomes on the indicator of giving examples reached an average of 69% in cycle I and decreased to an average of 59% in cycle II. The decrease in the average score was caused by students who gave answers that were not on topic. The question helped students review daily activities related to waste that can make a difference to the Earth. Based on research Kurniawan et al. (2020)) showed that through the problem-based learning model assisted by learning media encourages students to develop their thinking and actively participate in the learning process, because learning activities focus more on problem solving through experiments, thus creating a pleasant learning atmosphere for students.

Classifying

The percentage of student learning outcomes on the classification indicator reached an average value of 55% in cycle I and increased to an average value of 74% in cycle II. This shows that many students in cycle II were able to classify IPAS concepts based on their respective characteristics. Based on research Habibah et al. (2024)) showed that through the application of a problem-based learning model with DOMIPAS media (Domino IPAS plant material sources of life on Earth, the concept understanding ability of fourth grade students can increase.

Inferring

The percentage of student evaluation results on the conclusion indicator reached an average score of 57% in cycle I and increased to an average score of 86% in cycle II. After each lesson, teachers and students review what has been learned and draw conclusions about the success of their learning. Students can remember what the teacher said and what they learned from group discussion activities and present it when answering questions. Based on research Nida et al. (2023)) showed that through the application of problem-based learning model assisted by domino media, the learning outcomes of students' IPAS subjects can increase.

Comparing

The percentage of student evaluation results on the comparing indicator reached an average score of 47 in cycle I and increased to an average score of 78% in cycle II. Through group activities, students discussed whether the impacts of natural disasters are the same in terms of health and community life. During the discussion, the teacher told us that each natural disaster has a different impact on health and community life. Based on research Rahmadani et al. (2023)), the application of the Problem Based Learning (PBL) model based on monopoly media can improve students' understanding of human digestive system material. One way is through a group discussion process, where students are encouraged to build and develop their own understanding concepts. The concept is then used to analyze various problems found and strengthen cooperation among group members.

Explaining

The percentage of student evaluation results on the explanation indicator reached an average score of 72% in cycle I and increased to an average score of 81% in cycle II. In the question and answer activity between teachers and students about the process of disaster occurrence, students can explain the process of disaster occurrence well. Based on research Amalia et al. (2024)) showed that the application of the PBL model using quatered card media can improve students' IPAS learning outcomes. Through quatered card media, students can interact in

the form of questions and answers among group members, which helps them to more easily solve problems encountered in the learning process.

Based on this explanation, it is concluded that through the application of the *problem-based learning* model assisted by POKATA media, it is proven to be able to improve the understanding of the concept of IPAS in the subject of IPAS material My Dear Earth, My Poor Earth, grade V students of SD Negeri 3 Kalipucangkulon, lesson year 2024/2025. So that through this research can be a consideration in its application in IPAS subjects in elementary schools.

4. CONCLUSION

Based on the results of class action research that was carried out on January 6, 7, 13, and 14, 2025, it can be concluded that the application of the problem-based learning model assisted by POKATA media can improve the understanding of the concept of IPAS of fifth grade students on the material of changes that occur on Earth. The increase was shown through the acquisition of the average value of understanding the concept of IPAS which reached 62 in cycle I and increased to 76 in cycle II. In addition, classical learning completeness also increased, from 48% in cycle I to 80% in cycle II. Thus, the average score of students' concept understanding reached ≥ 70 and classical completeness reached $\geq 75\%$, in accordance with the predetermined success indicators. This research contributes to the development of IPAS learning methods by showing that the integration of problem-based learning models and POKATA media can be an innovative alternative to improve students' concept understanding, especially on abstract material such as changes on Earth. For future research, it is recommended that this method be tested in other subjects or on a larger and more diverse group of students, in order to see the consistency of its effectiveness and expand the generalizability of the research results.

REFERENCES

- Amalia, N., Ratnaningrum, I., & Fitriani, A. N. (2024). Application of Problem Based Learning Model assisted by Quarted Card Media to Improve IPAS Learning Outcomes of Class VC Students of SDN Manyaran 01 Semarang. *Didactics: Scientific Journal of PGSD FKIP Mandiri University*, .10
- Anwar, K., & Jurotun, J. (2019). Increasing the Activity and Learning Outcomes of High School Students in the Third Dimension Through PBL Learning Model Assisted with Props. *Kreano, Journal of Creative-Innovative Mathematics*, 10(1), 94-104. <https://doi.org/10.15294/kreano.v10i1.19366>
- Ardiyanti, H., Ismaya, E. A., & Setiawan, D. (2021). Improving Learning Outcomes of Elementary School Students with the Application of the Stad (Student Team Achievement Division) Model with Puzzle Media. *WASIS: Scientific Journal of Education*, 2 (1), 29-33. <https://doi.org/10.24176/wasis.v2i1.5191>
- Arikunto, S., Suhardjono, & Supardi. (2019). *Classroom Action Research*. Jakarta: PT Bumi Aksara.
- Dayanti, S., Sahade, & Azis, F. (2021). The Effect of Skills Using Variations by Teachers on Student Learning Activity in Class Xi Accounting Expertise Program at *Makassar State University*, 8 (1), 37-45. <http://eprints.unm.ac.id/21018/%0Ahttp://eprints.unm.ac.id/21018/1/ARTIKEL->

ABDUL WAHAB-1692042004-PENDING ACCOUNTING.pdf

- Diantoro, C. T., Ismaya, E. A., & Widiyanto, E. (2020). Improving Student Learning Outcomes Through the Quantum Teaching Model Assisted by Edmodo Application Media for Elementary School Students. *WASIS: Scientific Journal of Education*, 1 (1), 1-6. <https://doi.org/10.24176/wasis.v1i1.4496>
- Doyan, A., Taufik, M., & Anjani, R. (2018). The Effect of Multi Representation Approach on Physics Learning Outcomes in View of Students' Learning Motivation. *Journal of Science Education Research*, 4 (1). <https://doi.org/10.29303/jppipa.v4i1.99>
- Ermawati, D., & Amalia, N. (2023). the Effect of Mat Joyo Application on Students' Understanding of Mathematical Concepts Fifth Grade Elementary School. *JPSd (Journal of Elementary School Education)*, 9(1), 12–22.
- Ermawati, D., Damayanti, I. P., Mahmud, R., & Wistiana, H. J. (2024). Analysis of Factors Affecting Math Learning Difficulties in Class Iv of SD Muhammadiyah Birrul WalidainKudus. *International Journal of Cross Knowledge*, 2(1), 198–2014.
- Ermawati, D., Nur Anisa, R., Saputro, R. W., Ummah, N., & Azura, F. N. (2023). The Effect of Discovery Learning Model on Mathematics Learning Outcomes of 4th Grade Students of SD 1 Dersalam. *KAPASA: Collection of Nation's Children Education Articles*, 2, 82–92.
- Ermawati, D., & Zuliana, E. (2020). Implementation Of Open-Ended Problems On Mathematical Problem-Solving Skill Of Elementary School Students. *JPSD: Journal of Elementary School Education*, 6(2), 145–157.
- Habibah, L., Huda, C., & Ahyari, D. F. (2024). Improving the Concept Understanding of Class IV Students Through the PBL Model Assisted with DOMIPAS Media on Plant Material, Sources of Life on Earth. *National Seminar PPG UNIKAMA*, 4(1), 1–23.
- Harefa, D. (2020). Improving Students' Science Learning Achievement in the Learning Cycle Learning Model with Energy and Its Changes Material. *Trapsila: Journal of Basic Education*, 2 (01), 25. <https://doi.org/10.30742/tpd.v2i01.882>
- Hilmi, M. Z. (2017). Implementation of Ips Education in Ips Learning at School. *Scientific Journal of Mandala Education*, 3 (2), 164. <https://doi.org/10.58258/jime.v3i2.198>
- Hilyana, F. S., Ermawati, D., Riswari, L. A., Najikhah, F., & Hariyadi, A. (2024). Efforts to Improve Digital Literacy Through Making Android-Based Learning Media Brain Teaser. *UN PENMAS: Journal of Community Service for the Country*, 1 (2), 50-56. <https://jurnal.narotama.ac.id/index.php/un-penmasxxxxxxxxxxx%7C50>
- Juenda, L. A., Djumhana, N., & Rengganis, I. (2017). Application of Problem Based Learning Model to Improve Understanding of Science Concepts in Grade IV. *Journal of Elementary School Teacher Education*.
- Junaid, M., Salahudin, S., & Anggraini, R. (2021). The Effect of Problem Based Learning Model on Students' Understanding of Science Concepts at Smpn 17 Tebo. *Physics and Science Education Journal (PSEJ)*, 1 (April), 16. <https://doi.org/10.30631/psej.v1i1.709>
- Kurniawan, I. K., Parmiti, D., & Kusmariyatni, N. (2020). Science Learning with Problem Based Learning Model Assisted by Audio Visual Media Improves Students' Concept

- Understanding. *Edutech Undiksha Journal*, 8 (2), 80. <https://doi.org/10.23887/jeu.v8i2.28959>
- Nainggolan, W. A., Sipahutar, M., Ramadhani, N. A., & Thania, O. E. (2023). Application of Problem Based Learning Model in Improving Students' Concept Understanding on Genetics Materials in MAS 1 Yaspi Labuhan Deli Materials In MAS 1 Yaspi Labuhan Deli). *BIODIK: Scientific Journal of Biology Education*, 09, 79–86.
- Nida, I. Z., Purnamasari, V., & Kusniati, S. (2023). Application of Problem Based Learning Model assisted by Domino Card Media to Improve Learning Outcomes of IPAS Class IV Students. *National Seminar on Teacher Professional Education*, November.
- Novanto, Y. S., Anitra, R., & Wulandari, F. (2021). The Effect of Poe Learning Model on Science Concept Understanding Ability of Elementary School Students. *ORBITA: Journal of Physics Education Studies, Innovations and Applications*, 7 (1), 205. <https://doi.org/10.31764/orbita.v7i1.4665>
- Nugraheni, S. V., Ismaya, E. A., & Rondli, W. S. (2023). Application of Problem Based Learning Model assisted by Problem Card Media to Improve Learning Outcomes of Ppkn Students Class Iii Sdn Bintoro 16 Demak. *Didactics: Scientific Journal of PGSD STKIP Subang*, 9 (2), 3657-3665. <https://doi.org/10.36989/didaktik.v9i2.1218>
- Nurluthfiana, F., Masytoh, E. U., Berliana, S., Ulya, W. J., Hariyadi, A., Rondli, W. S., Ismaya, E. A., & Purbasari, I. (2023). The Importance of Efforts to Increase Interest in Learning Ips by Using Audiovisual Media for Low Grade Students at Sd Negeri Kunir 1 Dempet Demak. *Proceedings of the National Seminar on Education, Language, Literature, Arts, and Culture*, 2 (1), 375-384. <https://doi.org/10.55606/mateandrau.v2i1.307>
- Putra, E. D., & Panglipur, I. R. (2019). Analysis of Practitioner Performance Level through Student Learning Activities. *Journal of Mathematics Education (JUDIKA EDUCATION)*, 2 (1), 25-35. <https://doi.org/10.31539/judika.v2i1.700>
- Rahmadani, A., Ariyanto, A., Shofia Rohmah, N. N., Maftuhah Hidayati, Y., & Dessty, A. (2023). Problem Based Learning Model Based on Monopoly Game Media in Improving Understanding of Elementary School Students. *Scientific Journal of Education Citra Bakti*, 10 (1), 127-141. <https://doi.org/10.38048/jipcb.v10i1.1415>
- Rais, A. A., Hakim, L., & Sulistiawati, S. (2020). Students' Concept Understanding through Guided Inquiry Model assisted by PhET Simulation. *Physics Education Research Journal*, 2 (1), 1. <https://doi.org/10.21580/perj.2020.2.1.5074>
- Rosidah, T., Astuti, A. P., & Wulandari, V. A. (2017). Exploration of Students' Science Generic Skills in Chemistry Subjects at SMA Negeri 9 Semarang. *Journal of Science Education (Jps)*, 5(2), 130–137.
- Salsabilla, M., Aditia Ismaya, E., & Shokib Rondli, W. (2023). Improving Ppkn Learning Outcomes in the Merdeka Curriculum on Building Self-Esteem in Diversity Using Audio-Visual Media for Iv Grade Students of Sdn 2 Sadang. *Didactics: Scientific Journal of PGSD STKIP Subang*, 9 (04), 2053-2067. <https://doi.org/10.36989/didaktik.v9i04.1656>
- Septiana, E., Ermawati, D., & Kironoratri, L. (2021). Improving the Understanding of the Concept of Angle Material and Symbols of Third Grade Elementary Students through PATATIK Media. *Magistra Journal*, 12 (2), 120-133. <https://doi.org/10.31942/mgs>

- Siregar, N. (2019). Improving Students' Science Concept Understanding Ability and Teacher Learning Management by Implementing a Problem-Based Learning Model. *EKSAKTA: Journal of Research and Learning MIPA*,4 (1), 60. <https://doi.org/10.31604/eksakta.v4i1.60-65>
- Suhaemi, A., Asih, E. T., & Handayani, F. (2020). The Role of Learning Media in Improving Understanding the Concept of Learning Ips Sd. *Holistika Journal*,4 (1), 36. <https://doi.org/10.24853/holistika.4.1.36-45>
- Utomo, P., Asvio, N., & Prayogi, F. (2024). Classroom Action Research Methods (PTK): A Practical Guide for Teachers and Students in Educational Institutions. *Pubmedia Indonesian Journal of Classroom Action Research*,1 (4), 19. <https://doi.org/10.47134/ptk.v1i4.821>
- Zulfa, L., Ermawati, D., & Reswari, L. A. (2023). The Effectiveness of Augmented Reality-Based Learning Media on Understanding Mathematics Concepts of Fifth Grade Students. *Paedagoria: Journal of Educational Studies, Research and Development*,14 (4), 509-514. <http://journal.ummat.ac.id/index.php/paedagoria>