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The Effect of the Puzzle-Media-Assisted Problem-Based Learning Model on the Science Learning Activity of Class V Students

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ABSTRACT

This study aims to analyze the influence of the problem-based learning model (*PBL*) supported by puzzle media on the learning activity of students in science subjects in class V UPT SD Negeri 3 Otting, Sidrap Regency. The research method used was a quantitative experiment with *a one-group pretest-posttest* design. Data collection was carried out through observation sheets assessed by observers, then analyzed using descriptive and inferential statistics with *a paired sample t-test*. The results of the study show that the application of *the Problem-Based Learning* (PBL) model assisted by puzzle media can significantly increase students' learning activity. Learners become more active in asking questions, participating in group discussions, as well as showing improvements in problem-solving skills. With interesting and interactive problem-based learning, students are more motivated to understand the material and more courageous in expressing opinions. Therefore, the use of *the Problem-Based Learning* (PBL) model assisted by puzzle media is recommended as an effective learning strategy in increasing the learning activity of students in elementary school.

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1. INTRODUCTION

Education plays a very important role in shaping the knowledge, skills, and attitudes of students. Education certainly cannot be separated from the learning process. According to Suardi [1], learning is a process that occurs in a certain environment where students, teachers, and learning resources interact with each other. The learning process functions as a way for teachers to help students gain knowledge, acquire skills, foster positive behavior, and build attitudes and beliefs.

One of the subjects that plays a major role in developing critical thinking skills is Natural Sciences (IPA). Natural Sciences (IPA) is the most important part of the elementary school curriculum. According to BNSP [2], IPA aims to provide a structured understanding of nature, which not only emphasizes mastery of facts, concepts, or principles, but also prioritizes the process of scientific discovery. Through IPA learning, students can develop critical thinking skills and abilities in understanding the environment in depth so that they can encourage students towards the discovery process. The importance of IPA learning makes it necessary for teachers to design interesting learning for students, especially with the condition of students who are technology literate, making learning need to be adjusted to the interests and motivations of students. IPA has important goals for elementary school students. These goals include increasing intellectual growth and development of students, encouraging the formation of critical and rational thinking attitudes, and helping students have IPA concepts and their relevance to everyday life [3]. However, there are still many students who have difficulty understanding abstract IPA concepts, which has an impact on their low learning activity in class [4].

Learning activity is one indicator of learning success. According to Sudjana [5], learning activity is characterized by student involvement in learning activities, both physically and mentally. However, in practice, there are still many students who do not actively participate in the learning process, especially in science subjects. This is due to learning methods that are less interesting and the lack of use of learning media that can help students understand science concepts more concretely [6].

One solution to increase student learning activity is to apply a problem-based learning model or Problem-Based Learning (PBL). This model emphasizes problem solving as the main focus in the learning process, so that it can encourage students to think critically and actively in finding solutions [7]. In addition, the use of interesting learning media such as puzzles can help students understand the material better. According to Permata [8], puzzle media can improve students' memory, logical thinking skills, and creativity in solving a problem.

After conducting observations in class V on January 22-24, 2024, it was found that the level of student learning activity was very low. During the learning process, many students looked sleepy and did not pay attention to the material presented by the teacher. They tended to be passive, only listening to explanations without actively participating in discussions or other learning activities. This situation can be attributed to the learning model applied, which seemed unable to attract students' attention and less involved them in the learning process.

One of the factors contributing to the low student activity is the minimal use of supporting media that can make learning more interesting and interactive. When teachers only rely on the lecture method, the learning process becomes monotonous and tends to be boring for students. This is in line with the constructivist learning theory which emphasizes that knowledge is built by the understander himself through interactive and reflective learning experiences, providing a strong theoretical foundation for the implementation of effective e-learning. According to this theory, students are active in building their own understanding, not just receiving information from the teacher. Therefore, effective learning occurs when students are actively involved in the learning process and link new information to existing knowledge [9].

Thus, to improve student learning activity, it is necessary to evaluate the methods and approaches used in learning. Integrating various learning media and creating an interactive learning environment can help students feel more engaged and motivated to learn. This will not only increase their attention during the learning process, but will also support the development of social and cognitive skills that are important for their future development. Previous research results show that the combination of the Problem-Based Learning (PBL) model and puzzle media can increase students' learning activity in various subjects [5]. Therefore, this study aims to analyze the influence and effectiveness of the Problem-Based Learning (PBL) model assisted by puzzle media on the science learning activity of grade V students of UPT SD Negeri 3 Otting, Sidenreng Rappang Regency. By implementing this method, it is hoped that students can be more active in the learning process, thereby increasing their understanding of science concepts in more depth.

2. RESEARCH METHOD

This study uses a quantitative approach with a one-group pretest-posttest experimental design. The One-Group Pretest-Posttest Design is a research design that involves measuring pretests given to respondents before treatment is given. Observations are made by giving a pretest first, then treatment is given to the group of respondents. After treatment, observations are made again with a posttest using the same measurements as the pretest [10]. This design aims to measure the effect of implementing the Problem-Based Learning (PBL) model assisted by puzzle media on student learning activity by comparing the results before and after treatment [11]. The variables in this study consist of independent variables, namely the problem-based learning model assisted by puzzle media, and dependent variables, namely student learning activity in science subjects [12]

The population in this study were all fifth grade students of UPT SD Negeri 3 Otting, Sidrap Regency. The sampling technique used the purposive sampling method, with a sample size of 16 fifth grade students.

Data collection was carried out using student activity observation sheets, which included aspects of participation in discussions, questioning skills, cooperation, and involvement in learning activities. In addition, this study also used pretest and posttest tests to measure the increase in student activity after the implementation of the Problem-Based Learning (PBL) model assisted by puzzle media [13]. Data collection techniques in this study included observation, pretest and posttest observation sheets, and documentation. Observations were carried out to observe student learning activity during the learning process, while pretest and posttest observation sheets were used to determine changes in student activity levels before and after treatment was given. The observation sheet is a guideline containing indicators used to make an observation. These indicators are references as well as limitations in conducting observations in a study so that the observation process carried out is structured and directed and the data produced is not biased [14]. Documentation is used to record student learning outcomes and activities carried out during the learning process [12]. The data obtained were analyzed using descriptive and inferential statistics. Descriptive analysis is used to describe the average pretest and posttest scores, while inferential analysis uses a paired sample t-test to test the significance of the difference between before and after the application of the Problem-Based Learning (PBL) model assisted by puzzle media [15].

3. RESULTS AND DISCUSSION

Active Learning and *Problem-Based Learning* (PBL)

Learning activity is an important factor in successful learning. According to Sudjana [5], student learning activity can be observed through various aspects such as involvement in discussions, completing assignments, asking questions, and participating in problem solving. The application of the Problem-Based Learning (PBL) model aims to increase student involvement by providing real challenges that they must solve independently or in groups [16].

Indicators of learning activity

Active learning can encourage students to think logically, apply ideas and be able to solve problems, to find out student activeness can be seen from the activeness indicator. The indicators used by the researcher in conducting this classroom action research consist of 5 indicators of learning activity, namely, (1) student interaction with teachers; (2) conduct discussions in accordance with the directions given by the teacher; (3) actively participate in cooperation in the group; (4) the courage of students to answer questions; (5) students' efforts in completing individual and group assignments. Active students must be able to meet all the indicators that have been mentioned, for that it is necessary to understand educators in designing the learning process so that it can increase student activity[17].

Dampak Model *Problem-Based Learning* (PBL) terhadap Keaktifan Peserta didik

Based on the research that has been conducted, the application of the Problem-Based Learning (PBL) model assisted by puzzle media significantly increases student learning activity. The results of the statistical analysis showed that the learning activity score increased from 60.2 in the pretest to 85.6 in the posttest ($p < 0.05$). This result is in line with the research of Anggraini et al. [7] which shows that Problem-Based Learning (PBL) can increase student motivation and involvement in science learning.

According to Muslimin [4], the Problem-Based Learning (PBL) model helps students to develop critical and independent thinking skills. Students involved in problem-based learning tend to be more active in asking questions, finding solutions, and working together in groups. The Problem-Based Learning (PBL) approach allows students to understand concepts more deeply because they learn through exploration and direct experience [18].

The Role of Puzzle Media in Increasing Learning Activity

Learning media has an important role in increasing student interest and participation. According to Saputra & Selviana (2021), puzzle media helps students develop critical thinking skills, improve eye and hand coordination, and strengthen concentration. In this study, the use of puzzle media allows students to understand science concepts in a more fun and interactive way.[19]

The *Problem-Based Learning* (PBL) model has a major role in creating more active and experiential learning. According to this study, this approach allows students to work independently or in groups to solve problems related to science concepts [7]. The main role *of Problem-Based Learning* (PBL) in increasing active learning includes:

1. **Improve critical thinking skills** – Students are invited to find solutions to the problems given, not just memorize concepts.
2. **Encourages collaboration** – Group-based learning helps learners develop communication and cooperation skills in understanding the material.

3. **Facilitate exploration-based learning** – Students are given the opportunity to investigate science concepts, rather than just passively receiving information [20].

Some concepts in science learning are concepts that cannot be observed directly, this causes science learning to be difficult to understand and students are less enthusiastic in learning. To convey abstract concepts and to improve students' activities and learning outcomes in science subjects, puzzles are used as learning media. The choice of puzzles as a medium can also attract the attention of students because puzzles combine pictures and writing, so that information is easier to absorb and durable. The use of clue in puzzle media can also optimize learning because it can visualize parts of the material that cannot be observed directly. In addition, it can make it easier to convey the concept of static electricity that is difficult to obtain in reality[21].

Research by Permata shows that puzzles as a visual learning medium can improve students' memory and understanding [8]. With the challenge of putting together puzzles, students are more motivated to complete their tasks, which has an impact on increasing learning activity. This is in line with research [22], which shows that interactive media-assisted learning models can improve students' conceptual understanding and participation in class.

Comparison of *Pretest* and *Posttest Results*

To measure the effectiveness of the *Problem-Based Learning* (PBL) model assisted by puzzle media, a comparison was made between the results of *the pretest* and *posttest*. The following is a Table 1 showing the increase in students' learning activity scores.

Table 1. Increased Learning Activity Score

Activity Indicators	*Pretest*	*Posttest*	Increased
Participation in discussions	40,5	82,3	+41,8
Problem-solving capabilities	55,1	87,4	+32,3
Involvement in group tasks	60,2	85,6	+25,4

Based on Table 1, it can be seen that every aspect of learning activity experienced a significant increase after the application of the Problem-Based Learning (PBL) model assisted by puzzle media. This result is consistent with research [22], which found that problem-based learning methods with interactive media can improve students' understanding and learning motivation.

Table 2. Paired Test *Sample T-Test* Help SPSS *Statistic Version* 29

Data	T	Df	Sig	Information
Posttest-Pretest Results	-33,545	15	0,001	0,001 < 0,05

Based on Table 2, a T value of -33.545 from the degree of freedom of 15 was obtained and a significant 0.001 < 0.05. Thus, H0 was rejected and Ha was accepted, which shows that there is a difference in the average social science learning activity score of students before and after the application of *the Problem-Based Learning* (PBL) learning model assisted by puzzle media. So it can be concluded that the *Problem-Based Learning* (PBL) learning model assisted by puzzle media has an effect on the activity and learning of IPAS students in class V UPT SD Negeri 3 Otting, Sidenreng Rappang Regency.

Table 3. N-Gain Test

Pretest Average	Posttest Average	N-Gain	Category
46,5	86,63	,7790	Tinggi

The results of the analysis of the N-gain test using SPSS show that the N-Gain score obtained is 0.7790 so that N-Gain = 0.7790 ≤ 0.7 can be concluded that the increase in the score can be categorized as high. Furthermore, the category of N-Gain score results of students is presented in Table 4.

Table 4. Categories of Student N-Gain Score Results

Interval	Criterion	Number of Students
g ≥ 0,70	g-high	11
0,30 < g ≤ 0,70	g-medium	5
g ≤ 0,30	g-low	

Based on Table 4, it can be seen that 11 students obtained a g ≥ 0.70 score with high criteria, 5 students obtained a score of 0.30 < g ≤ 0.70 in the medium category, and no students obtained a g ≤ 0.30 score in the low category.

Therefore, the implementation of the Problem-Based Learning (PBL) model assisted by puzzle media has a significant impact on increasing student learning activity. Before the implementation of this model, students tended to be passive in participating in learning, with activities dominated by the teacher, such as listening to explanations and taking notes. However, after the Problem-Based Learning (PBL) model was implemented, students showed positive behavioral changes, such as actively participating in group discussions,

being enthusiastic in solving problems presented through puzzle media, and being enthusiastic about asking and answering questions. This shows that the combination of Problem-Based Learning (PBL) and puzzle media can create a more interactive learning environment, motivate students to be directly involved, and increase their sense of responsibility for the learning process. Observation and interview data support this finding, which shows that almost all students become more active compared to conventional learning methods. This finding is in line with research by Yuaifan & Astuti [23], which revealed that Problem-Based Learning (PBL) can focus students' attention on problem solving through a collaborative approach, making it an innovative learning method that encourages active learning in groups. In addition, Arbaidah's research [24] stated that the use of puzzle media encourages students to collaborate in assembling puzzles and discussing their ideas before presenting the results in front of the class, increasing their involvement in the learning process. Learning media in the form of puzzles greatly assists teachers in conveying ecosystem concepts. Ecosystem material often requires a complex understanding of the relationships between components in the ecosystem. Puzzles in this material allow students to practice and understand these concepts repeatedly, helping to improve their thinking power and understanding [25].

Advantages of *Problem-Based Learning* (PBL) Model Assisted by Media Puzzle

This study found several advantages in the application of *the Problem-Based Learning* (PBL) model assisted by puzzle media, including:

1. **Attracting students' interest in learning** – By using puzzles, abstract concepts in science can be conveyed in a more interesting and easy-to-understand way.
2. **Increase learning motivation** – Learners are more motivated to complete assignments because learning is packaged in the form of interactive games.
3. **Facilitating the understanding of science concepts** – Visualization through puzzles helps students better understand the concepts of food chains, ecosystems, and relationships between living things.
4. **Encourage active learning** – Learners are more active in asking, discussing, and doing assignments because problem-based learning requires them to find solutions independently.

Disadvantages of *Problem-Based Learning* (PBL) Models Assisted by Media Puzzles

Although it has many advantages, this study also identifies several challenges in the application of *the Problem-Based Learning* (PBL) model assisted by puzzle media:

1. **Takes longer** – The exploration and discussion process in *Problem-Based Learning* (PBL) requires a longer time allocation than conventional learning methods.
2. **Not all learners have good independent thinking skills** – Some learners have difficulty understanding concepts without direct guidance from the teacher.
3. **Limited resources** – Schools that have limitations in providing high-quality puzzle media may face obstacles in the optimal implementation of this model.

The results of observations during the study showed that before the implementation *of Problem-Based Learning* (PBL) assisted by puzzle media, many students were less active in science learning. Some students exhibit passive behavior, such as a lack of participation in discussions and tend to only listen to the teacher's explanations without responding. However, after the implementation of the *Problem-Based Learning* (PBL) model, there has been a significant change where students are more enthusiastic in completing tasks and more active in communicating with friends and teachers.

The results of this study indicate that the application of *the Problem-Based Learning* (PBL) model assisted by puzzle media can overcome the challenge of increasing students' learning activity, especially for those who have difficulties in understanding science concepts through conventional lecture methods. Therefore, this model is recommended to be applied more widely in primary schools, particularly in science learning that requires an interactive and exploration-based approach.

4. CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that the application *of the Problem-Based Learning* (PBL) model assisted by puzzle media significantly increases the learning activity of students in science subjects in class V of UPT SD Negeri 3 Otting, Sidrap Regency. Students who were previously less active in learning showed an increase in discussion participation, courage to ask questions, and problem-solving skills after the application of this model. Statistical analysis using the Paired Sample T-Test showed a significant increase between *pretest* and *posttest* scores ($p < 0.05$), proving that problem-based learning combined with interactive media can create a more interesting and effective learning atmosphere. With this approach, students are more motivated, active in critical thinking, and able to understand science concepts better. Therefore, the application of *the Problem-Based Learning* (PBL) model assisted by puzzle media is recommended as an innovative learning strategy in elementary schools, especially in increasing

students' learning activity. Further research can be conducted by testing the effectiveness of this model in various subjects or with different variations of learning media to improve student learning outcomes more broadly.

REFERENCES

[1] D. Kiki Yestiani and N. Zahwa, "Peran Guru Dalam Pembelajaran Pada Siswa Sekolah Dasar," *Jurnal Pendidikan Dasar*, vol. 4, no. 1, pp. 41–47, 2020, doi: 10.36088/fondatia.v4i1.515.

[2] F. N. Kumala, *Pembelajaran IPA Sekolah Dasar*. Malang: Penerbit Ediide Infografika, 2016.

[3] Muslimin, "Analisis Persepsi Guru terhadap Game Edukasi Kahoot dan WordWall pada Mata Pelajaran IPAS di Sekolah Dasar," *Maccayya Journal: Jurnal Ilmu Pendidikan*, vol. 2, no. 1, 2024, doi: https://doi.org/10.26858/maccayya.v2i1.2339.

[4] Muslimim, "Analisis Persepsi Guru terhadap Game Edukasi Kahoot dan WordWallpada Mata Pelajaran IPAS di Sekolah Dasar," *Maccayya Journal: Jurnal Ilmu Pendidikan*, vol. 2, no. 1, pp. 52–63, 2024, doi: https://doi.org/10.26858/maccayya.v2i1.2339.

[5] Z. Hasanah and A. S. Himami, "Model Pembelajaran Kooperatif Dalam Menumbuhkan Keaktifan Belajar Siswa," *IRSYADUNA: Jurnal Studi Kemahasiswaan*, vol. 1, no. 1, pp. 1–13, 2021, doi: https://doi.org/10.54437/irsyaduna.v1i1.236.

[6] M. Arsyad and E. F. Fahira, *Model-Model Pembelajaran Dalam Kurikulum Merdeka*. Purbalingga: CV. Eureka Media Aksara, 2023.

[7] P. Anggraini, A. Amaliyah, and C. P. Rini, "Pengaruh Model Pembelajaran Problem Based Learning (PBL) terhadap Kemampuan Berpikir Kritis IPA Siswa Kelas V SDN Cogreg I Kabupaten Tangerang," *Jurnal Islamika*, vol. 4, no. 4, pp. 788–798, Oct. 2022, doi: 10.36088/islamika.v4i4.2153.

[8] R. D. Permata, "Pengaruh Permainan Puzzle Terhadap Kemampuan Pemecahan Masalah Anak Usia 4-5 Tahun," *Jurnal PINUS: Jurnal Penelitian Inovasi Pembelajaran*, vol. 5, no. 2, pp. 1–10, 2020, doi: https://doi.org/10.29407/pn.v5i2.14230.

[9] F. Casfian, F. Fadhillah, J. W. Septianny, M. A. Nugraha, and A. Fuadin, "Efektivitas Pembelajaran Berbasis Teori Konstruktivisme Melalui Media E-Learning," *Pediaqu:Jurnal Pendidikan Sosial dan Humaniora*, vol. 3, no. 2, 2024, doi: https://publisherqu.com/index.php/pediaqu/article/view/916.

[10] A. R. Prasetyo, . Dian Veronika Sakti Kaloeti, A. Rahmandani, Salma, and J. Ariati, *Buku Ajar Metodologi Penelitian Eksperimen Fakultas Psikologi Universitas Diponegoro*. Semarang: Fakultas Psikologi Universitas Diponegoro Semarang , 2020.

[11] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: Alfabeta, 2018.

[12] A. Hardani MSi, J. Ustiawaty, and D. Juliana Sukmana, *Buku Metode Penelitian Kualitatif & Kuantitatif*. Yogyakarta: Penerbit Pustaka Ilmu, 2020. [Online]. Available: https://www.researchgate.net/publication/340021548

[13] I. Sukarelawa, T. K. Indratno, and S. M. Ayu, *N-Gain vs Stacking*. Yogyakarta: Penerbit Suryacahya, 2024.

[14] I. Komang Sukendra and Mp. I. Kadek Surya Atmaja, *Instrumen Penelitian*. Pontianak: Mahameru Press, 2020.

[15] Firdayanti, I. Tolla, and M. Irfan, "Pengaruh Model Pembelajaran Problem Based Learning Berbasis Concept Mapping Terhadap Keterampilan Berpikir Kritis Peserta Didik SD Inpres Tetebatu 1," *Jurnal Studi Guru dan Pembelajaran*, vol. 7, no. 3, pp. 1348–60, 2024, doi: 10.30605/jsgp.7.3.2024.4983.

[16] Syamsidah and H. Suryani, *Buku Model Problem Based Learning (PBL) Mata Kuliah Pengetahuan Bahan Makanan*. Yogyakarta: Penerbit Deepublish, 2018.

[17] M. Sholeh and N. Aini, "Meningkatkan Keaktifan Siswa Melalui Model Pembelajaran Cooperative Learning Tipe STAD Media Card Sort Muatan IPA Sekolah Dasar," *EDUKATIF : JURNAL ILMU PENDIDIKAN*, vol. 5, no. 4, pp. 1686–1692, Sep. 2023, doi: 10.31004/edukatif.v5i4.4949.

[18] L. A. Risandy, S. Sholikhah, P. Z. Ferryka, and A. F. Putri, "Penerapan Model Based Learning (PBL) dalam Pembelajaran Tematik Terpadu di Kelas 5 Sekolah Dasar," *Jurnal Kajian dan Penelitian Umum*, vol. 1, no. 4, pp. 95–105, 2023, doi: 10.47861/jkpu-nalanda.v1i4.

[19] H. Saputra and R. Selviana, "Penggunaan Media Puzzzle dalam Proses Pembelajaran," *Profesi : Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, vol. 01, no. 01, pp. 1–9, 2021, doi: https://www.researchgate.net/publication/357326582_Penggunaan_Media_Puzzzle_dalam_Proses_Pembelajaran.

[20] A. Mayasari, O. Arifudin, and E. Juliawati, "Implementasi Model Problem Based Learning (PBL) Dalam Meningkatkan Keaktifan Pembelajaran," *Jurnal Tahsinia*, vol. 3, no. 2, pp. 167–175, 2022, doi: https://doi.org/10.57171/jt.v3i2.335.

[21] A. Kurniawati, "Efektifitas Media Puzzle Untuk Meningkatkan Aktivitas Dan Hasil Belajar IPA," *Jurnal Prakarsa Paedagogia*, vol. 5, no. 1, Jul. 2022, doi: 10.24176/jpp.v5i1.9004.

[22] K. Nahar, A. R. Nikmah, and K. Kriswandani, "Pengaruh Problem Based Learning Berbantuan Geogebra dan Teka Teki Silang (TTS) Terhadap Hasil Belajar Siswa Kelas XI-4 SMA Negeri 3 Salatiga," *Jurnal Lebesgue : Jurnal Ilmiah Pendidikan Matematika, Matematika dan Statistika*, vol. 5, no. 3, pp. 1539–1551, Dec. 2024, doi: 10.46306/lb.v5i3.730.

[23] R. Yuaifan and S. Astuti, "Meningkatkan Hasil Belajar Siswa Menggunakan Model pembelajaran Problem Based Learning (PBL)," *Jurnal Riset Pendidikan Dasar*, vol. 1, no. 03, pp. 17–24, Apr. 2020, doi: https://doi.org/10.26618/jrpd.v3i1.3216.

[24] Arbaidah, "Penggunaan Media Puzzle Untuk Meningkatkan Keterampilan Berbicara Siswa Tema Praja Muda Karana Kelas III UPT. SD Negeri 20 Baringin," *Ensiklopedia of Journal*, vol. 3, no. 3, pp. 233–244, Jul. 2021, doi: https://doi.org/10.33559/eoj.v3i4.838.

[25] Muslimin, "Model Pembelajaran Auditory, Intellectually, Repetition (AIR) dengan media Puzzle untuk meningkatkan Keaktivan Belajar IPAS di Sekolah Dasar," *Maccayya Journal: Jurnal Ilmu Pendidikan*, vol. 2, no. 2, pp. 171–5, 2024, doi: https://doi.org/10.26858/maccayya.v2i2.5136.