



# The Effectiveness of Problem-Based Learning Integrated Audio-Visual Media in Enhancing Student Learning Outcomes on the Water Cycle Topic

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## ARTICLE INFO

### Article history:

Received May 12, 2024

Accepted August 18, 2024

Available online August 25, 2024

### Kata Kunci:

Problem Based Learning, Media Audio Visual, Hasil Belajar

### Keywords:

Problem-based Learning, Audio Visual Media, Learning Outcomes



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## ABSTRAK

Pemanfaatan media pembelajaran yang inovatif merupakan salah satu strategi penting untuk meningkatkan hasil belajar siswa. Penelitian ini bertujuan menganalisis pengaruh signifikan media audio-visual berbasis pembelajaran berbasis masalah (*problem-based learning*) terhadap hasil belajar siswa pada materi siklus air. Penelitian ini menggunakan desain eksperimen semu (*quasi-experimental design*) dengan kelompok eksperimen berjumlah 28 siswa dan kelompok kontrol berjumlah 22 siswa dari populasi siswa kelas V sebanyak 300 orang. Pengumpulan data dilakukan menggunakan metode tes untuk mengukur hasil belajar siswa. Data dianalisis menggunakan statistik deskriptif untuk memberikan gambaran umum hasil belajar serta analisis statistik inferensial untuk menguji signifikansi pengaruh media yang digunakan. Hasil penelitian menunjukkan bahwa, terdapat pengaruh signifikan dari penggunaan media audio-visual berbasis pembelajaran berbasis masalah terhadap hasil belajar siswa pada materi siklus air. Temuan ini mengindikasikan bahwa, integrasi media audio-visual dengan pendekatan pembelajaran berbasis masalah mampu meningkatkan pemahaman konsep siswa secara lebih efektif dibandingkan pembelajaran konvensional. Dapat disimpulkan bahwa, media audio-visual berbasis pembelajaran berbasis masalah merupakan alat pembelajaran yang efektif untuk meningkatkan hasil belajar siswa, khususnya pada materi yang membutuhkan pemahaman konsep secara visual dan interaktif. Inovasi media pembelajaran audio-visual berbasis *problem-based learning* berimplikasi pada peningkatan minat belajar siswa karena menyajikan permasalahan yang menarik dan menantang.

## ABSTRACT

The utilization of innovative learning media is a critical strategy to enhance student learning outcomes. This study aims to analyze the significant impact of problem-based learning (PBL) integrated audio-visual media on students' learning outcomes in the water cycle topic. Employing a quasi-experimental design, the research involved an experimental group of 28 students and a control group of 22 students, selected from a total population of 300 fifth-grade students. Data collection was conducted using tests to measure student learning outcomes. The data were analyzed using descriptive statistics to provide an overview of learning results and inferential statistics to test the significance of the media's effect. The findings reveal a significant influence of PBL-based audio-visual media on students' learning outcomes in the water cycle topic. These results indicate that integrating audio-visual media with a problem-based learning approach effectively enhances students' conceptual understanding compared to conventional teaching methods. In conclusion, PBL-based audio-visual media is an effective learning tool for improving student outcomes, particularly in topics requiring visual and interactive conceptual understanding. Innovation in audio-visual learning media based on problem-based learning has implications for increasing students' interest in learning because it presents interesting and challenging problems.

## 1. INTRODUCTION

Education is an important thing in human life, this means that every human being has the right to receive it and is expected to always develop in it (Irwan et al., 2021; Sari et al., 2020). Education in general means a life process in developing each individual to be able to live and continue life (Kusyadi et al., 2023; Siswondo & Agustina, 2021). In line with the statement that education is a process that includes three dimensions, the individual, society or national community of the individual, and all the contents of reality, both material and spiritual, which play a role in determining the nature, fate, form of humans and society (Bahruddin & Nisa, 2022; Putri et al., 2019)

Along with the development of education, learning technology also continues to develop along with the times. In the implementation of daily learning, we often encounter the use of technological

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developments in the world of education (Arridho et al., 2022; Jamun, 2018). As technology develops in the 21<sup>st</sup> century, the learning process must adapt to these changes. Previous research states that conventional learning processes are shifting to knowledge-based learning accompanied by technological skills, other studies also state that developing technological skills is an important investment for students' futures (Mantau & Talango, 2023; Rahim et al., 2019). This change is marked by the use of learning media that implements technology in it.

Media is a very useful tool for students and teachers in the learning and teaching process (Agustira & Rahmi, 2022; Candra et al., 2019). The Association for Educational Communications and Technology (AECT) defines media as a form of channel for the process of transmitting information (Agustira & Rahmi, 2022; Siregar & Marpaung, 2020). Media is a means of conveying messages or learning information that the message source wants to convey to the target or recipient of the message (Ikhbal & Musril, 2020; Tafonao, 2018). The use of learning media will greatly assist in the learning process and the delivery of learning materials in an interesting way in order to improve student understanding. The types of learning media are audio media, visual media, audio visual media (Ningsih, 2022; Fitria, 2014).

Currently, one of the learning media that is often used and related to the use of technology is audio-visual media. Audio-visual media is a medium for conveying information that has the characteristics of sound and images (Setiyawan, 2021; Wati, 2016). Examples of audio visual media include learning videos, animated videos and films (Handayani & Syafi'i, 2022; Nurfadhillah et al., 2021). From various examples of audio-visual media in learning activities, teachers utilize learning videos as one of the tools to convey the material to be discussed. The use of learning videos has an attraction for students, namely in learning videos displaying sound and images that will make students focus (Putri & Fitria, 2020).

Previous research stated that, in using learning videos, a teacher must also be able to apply the right learning model. Other research also stated that selecting the right learning model will be an alternative in efforts to improve the quality of student learning (Muliani & Wibawa, 2019; Jannah, 2019). Previous research states that the right learning model will provide students with the opportunity to be directly involved in the learning process, other research also states that the right learning model can make it easier for students to understand the material (Nur Jannah, 2019; Salam, 2017). One of the learning models that can be applied is problem based learning (PBL). The PBL learning model is learning that focuses on students as learners and on authentic or relevant problems that will be solved by using all the knowledge they have or from other sources (Sinaga et al., 2022; Darwati & Purana, 2021).

Problem-based learning aims, among other things, to help students develop thinking skills and problem-solving skills (Saputra, 2021; Sumartini, 2016). In problem-based learning, the attention of learning is not only on the acquisition of procedural knowledge. The problem-based learning model confronts students with various problems for students to find solutions to (Syarifudin et al., 2021; Surya, 2017). The problem originates from real problems in the student's environment which aims to develop students' ability to think critically and have the skills to solve a problem (Mardhiyah et al., 2021; Surya, 2017). One of the subjects that is suitable for applying problem based learning is natural science (IPA).

Science is a science that studies natural phenomena and everything that exists in nature. Science has several meanings based on the perspective of the scientist concerned, starting from the definition of science itself, the way of thinking of science, the way of investigating science to the object of science study (Purbosari, 2016). In order for science learning to be more meaningful and useful in improving the quality of human resources, it is necessary to create science learning that allows students to apply their knowledge in dealing with problems in everyday life. By using learning media and learning models that are in accordance with science learning, the desired learning outcomes will be achieved. According to data obtained from the PISA survey institution (2018), learning outcomes in Indonesia are ranked 63<sup>rd</sup> out of 70 countries. This shows that the learning outcomes of students are low.

The urgency of this research is the low learning outcomes of students. Therefore, this study aims to analyze the significant influence of audio-visual media based on problem-based learning on student learning outcomes in the water cycle material. Innovation of audio-visual learning media based on problem-based learning is expected to improve student learning outcomes, especially in materials that require visual and interactive understanding of concepts.

## 2. METHOD

The research conducted is descriptive research. Descriptive research is research that aims to describe the condition of the subject or object based on visible facts or what they are (Rosnelli et al., 2022). This research focuses on actual problems that exist in the field when the research is taking place. Descriptive research describes variables related to the problem being studied without considering the relationship between variables. The population of this study were all fifth grade students of SD Gugus III Banjar Anyar

Kediri Tabanan. The sampling technique used in selecting samples in this study was cluster random sampling.

The data collection used in this study is the test method, using in this study the instrument used was a science learning outcome test. In this study the science learning outcome test used was multiple choice or objective, consisting of 30 questions. Before making objective questions, it is necessary to make a question grid first which will later be used as a benchmark in making questions. The following is a table of questionnaire instrument grids. The instrument grids used in this study can be presented in [Table 1](#).

**Table 1.** The Grid of Questionnaire Instrument

Core Competencies	Basic Competencies	Question Indicator	Cognitive Domain	Question Form	No. Question
Understanding factual knowledge by observing, listening, seeing, reading and asking based on curiosity about oneself, God's creatures and their activities and the objects they encounter at home, at school and at play.	3.8. Analyzing the water cycle and its impact on events on earth and the survival of living things.	Given a question, students are able to analyze the factors that cause water on earth to never run out.	C4	PG	1
		Students are presented with questions on how to analyze the benefits of water for humans, animals and plants.	C4	PG	2,3
		Given a problem, students can analyze the influence of water quality on human life.	C4	PG	4,5
		Given a problem, students can correctly conclude the impact of water quality on daily life.	C5	PG	6
		Given questions, students are able to analyze the impacts of human activities on the water cycle.	C4	PG	7,8,9,10,11,12
		Given questions, students are able to analyze the water cycle process on earth.	C4	PG	13,14,15
		Given questions, students are able to summarize the water cycle process.	C5	PG	16,17,18
		Given questions, students are able to analyze things that influence the water cycle process.	C4	PG	19,20
		Given questions, students are able to examine the factors that influence the water cycle in the soil.	C4	PG	21,22
		Given questions, students are able to analyze the impact of inhibiting the water cycle process.	C4	PG	23,24
		Students are presented with questions that are able to relate the influence of water quality on human life.	C4	PG	25,26
		Given questions, students are able to analyze the role of forests in the water cycle.	C4	PG	27
		Given questions, students are able to design activities that can maintain the sustainability of the water cycle process.	C6	PG	28,29,30

An instrument is said to be feasible or valid if the instrument created can measure what should be measured, so a validity test is needed to prove this. The validity test used is the content validity test. The validity of the instrument content is determined using expert judgment or using the Gregory formula. The expert in question is a person who has expertise in his field, with a field that is in accordance with the instrument for research (Prihono et al., 2019). The multiple-choice test instrument is tested for the validity of the instrument items using the point biserial correlation technique. The reliability of the multiple-choice instrument uses the Kuder Richardson 20 formula (KR-20). In addition, a test of the discriminatory power and level of difficulty is carried out on multiple-choice questions. After the instrument is suitable for use for data collection, the data that has been obtained is analyzed descriptively quantitatively. Quantitative data is done by finding the average price (Mean).

### 3. RESULT AND DISCUSSION

#### Result

This study found that there was a significant difference in student learning outcomes in the water cycle material using audio-visual media. Seen from the data on student learning outcomes in the control class and the experimental class. Seen from the data that the range of post-test scores obtained by students in the control group was in the range with the medium category. While the results of the data obtained in the experimental class were in the high category. It can be seen that the range of post-test scores obtained by students in the experimental group was in the range with the high category. The final stage analysis aims to answer the hypothesis that there is a significant influence of the use of audio-visual media based on problem-based learning on the learning outcomes of water cycle material for class V students in cluster III, Kediri District, 2022/2023 Academic Year. Before testing the hypothesis, the data on the learning outcomes of water cycle material for students in the control class and the experimental class obtained were tested for normality and homogeneity.

The learning outcomes of the water cycle material of the control and experimental classes have values less than each, so it can be said that the four data have a normal distribution. After the normality test, the next step is to conduct a homogeneity test which aims to find the level of homogeneity in two parties taken from separate groups from one population of the control group and the experimental group. From the previous calculation, the standard deviation value for the Learning Outcomes of the Water Cycle Material of the experimental class was 2.96 so that the variance value for the experimental class was 8.8. The standard deviation value for the control class was 2.82 so that the variance value for the control class was 8. It can be concluded that the learning outcomes of the water cycle material of grade V elementary school students in the experimental and control groups are homogeneous.

The results of the normality and homogeneity tests that have been carried out indicate that the data from the experimental group and the control group come from a population that is normally distributed and has homogeneous variance. This indicates that the prerequisite test has been met so that hypothesis testing can be carried out using the t-test to see if there is a difference between the data on the learning outcomes of students' water cycle material applied with audio-visual media based on Problem Based Learning with the learning outcomes of students' water cycle material applied with conventional learning. The summary of the results of the t-test analysis can be presented in Table 2.

**Table 2.** The Summary of t-test Results of Learning Outcomes Data on Learning Water Cycle Material

Group	N	$\bar{X}$	$S^2$	$t_{count}$	$t_{table}$
<b>Learning outcomes of the water cycle material for class</b>					
Experiment	28	13.21	8.8	2.064	2.010
Control	22	11.5	8.0		

Based on the calculation results in the table above, it is obtained that  $t_{count} > t_{table}$  which means  $H_0$  is rejected. This indicates that, there is a significant influence of the use of audio-visual media based on Problem Based Learning on the learning outcomes of water cycle material for grade V in Gugus III Banjar Anyar, Kediri District, Tabanan, 2022/2023 Academic Year. Judging from the results of data analysis using the t-test, the  $t_{count}$  value of 2.064 is greater than the  $t_{table}$  value of 2.010, which means that the use of audio-visual media based on Problem Based Learning has a significant effect on the learning outcomes of water cycle material for grade V in Gugus III Banjar Anyar, Kediri District, Tabanan, 2022/2023 Academic Year.

Based on the results of the hypothesis test and discussion, it can be concluded from the results of data analysis with the t-test that the  $t_{count}$  value is 2.064 more than the  $t_{table}$  value of 2.010, which means that the use of audio-visual media based on Problem Based Learning has a significant effect on the learning outcomes of the water cycle material for grade V in Gugus III Banjar Anyar, Kediri Tabanan District,

2022/2023 Academic Year. It can also be seen from the difference in the X bar value between the experimental group and the control group, where the experimental group with a value of 13.21 is more than the control group with a value of 11.5, which shows that the learning outcomes of the experimental group are better than the control group. The experimental group with the application of audio-visual media based on Problem Based Learning provides better learning outcomes than the control group. Thus, this increases the value of student learning outcomes.

## Discussion

Learning media has an important role in the learning process, namely it can help students understand the learning delivered by the teacher (Wulandari et al., 2023; Tafonao, 2018). One of the media that can be used is audio-visual media. This media is very good for stimulating motivation and interest in learning in students (Adam, 2023; Suprianto, 2020). In a similar study, it was stated that the use of animated video media was proven to be effective in improving student learning outcomes in the water cycle material of class V SDN 1 Pataruman, another study also stated that the implementation of audio-visual media had a positive and significant effect on the learning outcomes of water cycle material in class V students of SDN Bambu Apus 01 East Jakarta (Sariningsih et al., 2024; Safitri & Kasriman, 2022).

Previous research states that the use of Audio-visual media can be used as an alternative for educators in delivering material that cannot be experienced directly by students. Other research also states that audio-visual media can improve student learning outcomes (Safitri & Kasriman, 2022; Fujiyanto et al., 2016). Audio-visual learning media displays learning materials in the form of images in the form of photos and videos accompanied by sound. Media can be in the form of video displays or artificial props, so that students can listen to real learning through the display of images and sound.

The water cycle material is a process that cannot be seen directly. In delivering it to students, audio-visual media is needed to show students each stage of the process, so that learning becomes more effective. This is in line with research on the effectiveness of the problem-based learning model assisted by audio-visual media. The results of previous research show that the Problem Based Learning (PBL) model assisted by audio-visual media is more effective for the science learning outcomes of grade V elementary school students (Cicilia et al., 2022; Virgiana & Wasitohadi, 2016).

The PBL model is an approach in the learning process that links concrete problems as a context for students, so that students learn about how to think critically, problem-solving skills, and to obtain essential knowledge and concepts from the subject matter. Other research states that PBL is a model that can help students understand the context of real and concrete problems (Anitasari et al., 2023; Anwar & Jurotun, 2019). The students' own perception or understanding makes the model very suitable for improving students' problem solving skills (Purnama et al., 2021; Woa et al., 2018). In addition, Problem Based Learning (PBL) places more emphasis on student-centered learning, and the teacher only acts as a facilitator.

There are similar findings which state that interactive multimedia based on problem based learning is proven to be valid and practical for use by elementary school students (Ridwan et al., 2023; Rahmadani & Taufina, 2020). In addition, several other studies have also found that the problem-based learning model assisted by audio-visual media has proven effective in increasing the mastery of knowledge competencies and science learning outcomes of elementary school students (Rivaldi et al., 2018; Virgiana & Wasitohadi, 2016). Problem-based learning leads students to think and act more actively. The average learning outcomes of the experimental group were higher than the control group, indicating the effectiveness of using audio-visual media based on problem-based learning. The learning outcomes also showed students' thinking skills that were further implemented through communication, both in writing (optional tests and essays) and orally (presentations).

The audio-visual assisted problem-based learning model has an effect on students' critical thinking skills (Purbarani et al., 2018; Vera & Wardani, 2018). This can be seen from the increase in critical thinking skills before and after learning. This is shown during the teaching and learning process, students are enthusiastic in asking questions. Then responded to by other students with their respective opinions according to their understanding after watching the audio-visual learning media displays.

Audio visual media that displays learning materials more interestingly filled with videos of the water cycle process. Added with written explanations with artistic and oral displays that can attract students' attention. It can be seen in the teaching and learning process that students are so enthusiastic in listening to the display of learning materials, which is accompanied by a sense of awe at being able to see a natural process directly. Similar research suggests that, when learning takes place, it is clear that students are more interested in following learning using audio visual media in discussing the water cycle (Refina et al., 2023; Purbarani et al., 2018).

The learning media that has been developed is able to improve student learning outcomes. Innovation of audio-visual learning media based on problem-based learning has implications for increasing



student learning interest because it presents interesting and challenging problems. Meanwhile, the limitation of this study is that it only analyzes the water cycle material, so that student learning outcomes that increase are only in the water cycle material. Therefore, further research is suggested to be able to create similar learning media with different materials.

#### 4. CONCLUSION

The results of the study showed that innovation of audio-visual learning media based on Problem Based Learning was able to improve student learning outcomes. In addition, this learning also has implications for increasing student interest in learning. This is because they are given problems which are then studied through audio-visual media. This media helps clarify the material presented by the teacher, thus making students more interested in learning.

#### 5. REFERENCES

- Adam, A. (2023). Pengaruh Media Pembelajaran Audio Visual Terhadap Minat Belajar Siswa Sekolah Dasar. *Jurnal Pasifik Pendidikan*, 2(2), 117–123. <https://doi.org/10.51135/jukip.v2i2.40>.
- Agustira, S., & Rahmi, R. (2022). Penggunaan Media Pembelajaran Untuk Meningkatkan Hasil Belajar Siswa Pada Tingkat SD. *MUBTADI: Jurnal Pendidikan Ibtidaiyah*, 4(1), 72–80. <https://doi.org/10.19105/mubtadi.v4i1.6267>.
- Anitasari, S., Hadi, F. R., & Ridwan. (2023). Peningkatan Hasil Belajar Menggunakan Model Pbl Berbantuan Media Konkret Matematika Kelas Iv Sdn 1 Sukorejo. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 8(2), 2218–2235. <https://doi.org/10.23969/jp.v8i2.9642>.
- Anwar, K., & Jurotun, J. (2019). Peningkatan Aktivitas dan Hasil Belajar Siswa SMA Pada Dimensi Tiga Melalui Model Pembelajaran PBL Berbantuan Alat Peraga. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 10(1), 94–104. <https://doi.org/10.15294/kreano.v10i1.19366>.
- Arridho, M., Sari, N., Ilham, R. W., & Amini, W. (2022). Perkembangan Teknologi Dibidang Pendidikan. *Comserva Jurnal Penelitian Dan Pengabdian Masyarakat*, 2(5), 468–475. <https://doi.org/10.36418/comserva.v2i5.345>.
- Bahrudin, B., & Nisa, K. (2022). Pendampingan Belajar Bagi Siswa Di MI Ihyauddiniyah Dengan Menggunakan Model Pembelajaran Discovery Learning. *Jurnal Pengabdian Kepada Masyarakat*, 2(2), 65–70. <https://doi.org/10.55210/khidmah.v2i2.153>.
- Candra, O., Dupri, Gazali, N., Khairullazi, & Oktari, A. (2019). Ipteks bagi Masyarakat: Guru SMP/MTS Mahir Menganalisis Data Menggunakan Program SPSS. *Community Education Engagement Journal*, 1(1), 58–66. <https://doi.org/10.25299/ceej.v3i01.6752>.
- Cicilia, F., Reffiane, F., & Sari Setianingsih, E. (2022). Keefektifan Model Problem Based Learning (Pbl) Berbantu Media Audio Visual Dan Benda Konkret Terhadap Hasil Belajar Siswa Tema 6 Panas Dan Perpindahannya Subtema 3 Pengaruh Kalor Terhadap Kehidupan Untuk Siswa Kelas 5 Sdn 6 Bangsri. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 8(1), 776–784. <https://doi.org/10.36989/didaktik.v8i1.350>.
- Darwati, I. M., & Purana, I. M. (2021). Problem Based Learning (PBL) : Suatu Model Pembelajaran Untuk Mengembangkan Cara Berpikir Kritis Peserta Didik. *Widya ACCARYA: Jurnal Kajian Pendidikan FKIP Universitas Dwijendra*, 12(1), 61–69. <https://doi.org/10.46650/wa.12.1.1056.61-69>.
- Fitria, A. (2014). Penggunaan media audio visual dalam pembelajaran anak usia dini. *Cakrawala Dini: Jurnal Pendidikan Anak Usia Dini*, 5(2). <https://doi.org/10.17509/cd.v5i2.10498>.
- Fujiyanto, A., Jayadinata, A. K., & Kurnia, D. (2016). Penggunaan media audio visual untuk meningkatkan hasil belajar siswa pada materi hubungan antar makhluk hidup. *Jurnal Pena Ilmiah*, 1(1), 841–850. <https://doi.org/10.23819/pi.v1i1.3576>.
- Handayani, S., & Syafi'i. (2022). Pemanfaatan Video Animasi Youtube Untuk Meningkatkan Pengembangan Maharah Istima' Bahasa Arab. *Tatsqifiy: Jurnal Pendidikan Bahasa Arab*, 3(2), 104–115. <https://doi.org/10.30997/tjpb.v3i2.6138>.
- Ikhbal, M., & Musril, H. A. (2020). Perancangan Media Pembelajaran Fisika Berbasis Android. *INFORMATION MANAGEMENT FOR EDUCATORS AND PROFESSIONALS: Journal of Information Management*, 5(1), 15. <https://doi.org/10.51211/imbi.v5i1.1411>.
- Irwan, I., Ichsan, F. N., Gistituati, N., & Marsidin, S. (2021). Analisis Kebijakan Pendidikan Terkait Implementasi Pembelajaran Pada Masa Darurat Covid 19. *Jurnal Manajemen Pendidikan*, 9(2), 89–95. <https://doi.org/10.33751/jmp.v9i2.4238>.
- Jamun, Y. M. (2018). Dampak Teknologi Terhadap Pendidikan. *Jurnal Pendidikan Dan Kebudayaan Missio*, 10(1), 48–52. <https://doi.org/10.36928/jpkm.v10i1.54>.
- Khaira Aulia, U., Nurlina, & Amal, A. (2023). Pengaruh Model Pembelajaran Inkuiry Terbimbing Terhadap

- Hasil Belajar IPA pada Siswa Kelas V SD Inpres Malengkeri Bertingkat 1. *Jurnal Pendidikan Sosial Humaniora*, 2(2), 211–228. <https://doi.org/10.30640/dewantara.v2i2.1046>.
- Kusyadi, R., Anshar, R. F., Sari, R. A. R., Wahdayani, A., Laksono, D. A., Ramadhan, R., ... Syaputra, G. Q. I. (2023). Berbagai Pendidikan Teknolgi Informasi dan Komunikasi Untuk Panti Asuhan Dompot Yatim Dan Dhuafa Pamulang Barat. *Abdi Jurnal Peblikasi*, 1(3), 322–326. Retrieved from <https://jurnal.portalpublikasi.id/index.php/AJP/article/view/84/65>.
- Mantau, B. A. K., & Talango, S. R. (2023). Pengintegrasian keterampilan abad 21 dalam proses pembelajaran (Literature review). *Irfani (e-Journal)*, 19(1), 86–107. <https://doi.org/10.30603/ir.v19i1.3897>.
- Mardhiyah, R. H., Aldriani, S. N. F., Chitta, F., & Zulfikar, M. R. (2021). Pentingnya Keterampilan Belajar di Abad 21 sebagai Tuntutan dalam Pengembangan Sumber Daya Manusia. *Lectura: Jurnal Pendidikan*, 12(1), 29–40. <https://doi.org/10.31849/lectura.v12i1.5813>.
- Muliani, N. K. D., & Wibawa, I. M. C. (2019). Pengaruh Model Pembelajaran Inkuiri Terbimbing Berbantuan Video Terhadap Hasil Belajar IPA. *Jurnal Ilmiah Sekolah Dasar*, 3(1), 107. <https://doi.org/10.23887/jisd.v3i1.17664>.
- Ningsih, S. O. (2022). Peranan Media Audio Visual Dalam Meningkatkan Proses Dan Hasil Belajar Mengajar Pendidikan Agama Islam Di Sekolah Dasar. *GUAU: Jurnal Pendidikan Profesi Guru ...*, 2(6), 281–288. Retrieved from <http://studentjournal.iaincurup.ac.id/index.php/guau/article/view/593/557>.
- Nur Jannah, E. S. (2019). Penerapan Metode Pembelajaran “Active Learning-Small Group Discussion” di Perguruan Tinggi Sebagai Upaya Peningkatan Proses Pembelajaran. *Fondatia*, 3(2), 19–34. <https://doi.org/10.36088/fondatia.v3i2.219>.
- Nurfadhillah, S., Cahyani, A. P., Haya, A. F., Ananda, P. S., Widyastuti, T., & Tangerang, U. M. (2021). Penerapan Media Audio Visual Berbasis Video Pembelajaran Pada Siswa Kelas Iv Di Sdn Cengklong 3. *Jurnal Pendidikan Dan Dakwah*, 3(2), 396–418. <https://doi.org/10.36088/pandawa.v3i2.1272>.
- Prihono, E. W., Ilmu, F., Ambon, I., & Tarmizi. (2019). Validitas Instrumen Kompetensi Profesional pada Penilaian Prestasi Kerja Guru Professional Competency Instrument Validity on The Assessment of Teacher Work Performance. *Jurnal Penelitian Hukum Dan Pendidikan*, 18(2), 897–910. <https://doi.org/10.30863/ekspose.v18i2.529>.
- Purbarani, D. A., Dantes, N., & Adnyana, P. B. (2018). Pengaruh Problem Based Learning Berbantuan media Audio Visual Terhadap Kemampuan Berpikir Kritis Dan Hasil Belajar IPA Di Sekolah Dasar. *PENDASI: Jurnal Pendidikan Dasar Indonesia*, 2(1), 24–34. <https://doi.org/10.23887/jpdi.v2i1.2689>.
- Purbosari, P. M. (2016). Pembelajaran Berbasis Proyek Membuat Ensiklopedia Ilmu Pengetahuan Alam (IPA) untuk Meningkatkan Academic Skill pada Mahasiswa. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 6(3), 231–238. <https://doi.org/10.24246/j.scholaria.2016.v6.i3.p231-238>.
- Purnama, J., Nehru, Pujaningsih, F. B., & Riantoni, C. (2021). Studi Literatur Model Problem Based Learning Terhadap Kemampuan Pemecahan Masalah Siswa. *Edumaspu: Jurnal Pendidikan*, 5(2), 272–277. Retrieved from <https://www.academia.edu/download/97567934/645.pdf>.
- Putri, Q. K., Pratjojo, P., & Wijayanti, A. (2019). Pengembangan Media Buku Pop-Up untuk Meningkatkan Kemampuan Menyimak Tema Menyayangi Tumbuhan dan Hewan di Sekitar. *Jurnal Pedagogi Dan Pembelajaran*, 2(2), 169. <https://doi.org/10.23887/jp2.v2i2.17905>.
- Putri, W. D., & Fitria, N. (2020). Pengaruh video pembelajaran cerita dan lagu terhadap kemampuan berbicara anak. *Jurnal Anak Usia Dini Holistik Integratif (AUDHI)*, 2(2), 102–113. <https://doi.org/10.36722/jaudhi.v2i2.585>.
- Rahardja, U. (2019). Meningkatkan Kualitas Sumber Daya Manusia Dengan Sistem Pengembangan Fundamental Agile Meningkatkan Kualitas Sumber Daya Manusia Dengan Sistem Pengembangan Fundamental Agile. *Abdi Jurnal*, 3(1), 63–67. <https://doi.org/10.34306/abdi.v3i1.760>.
- Rahim, F. R., Suherman, D. S., & Murtiani, M. (2019). Analisis Kompetensi Guru dalam Mempersiapkan Media Pembelajaran Berbasis Teknologi Informasi Era Revolusi Industri 4.0. *Jurnal Eksakta Pendidikan*, 3(2). <https://doi.org/10.24036/jep/vol3-iss2/367>.
- Rahmadani, R., & Taufina, T. (2020). Pengembangan Multimedia Interaktif Berbasis Model Problem Based Learning (PBL) Bagi Siswa Sekolah Dasar. *Jurnal Basicedu*, 4(4), 938–946. <https://doi.org/10.31004/basicedu.v4i4.465>.
- Refina, N., Syafrina, A., & Vitoria, L. (2023). Pengaruh Media Audio Visual Terhadap Hasil Belajar Peserta Didik pada Materi Siklus Air di Kelas V SD Negeri 1 Calang Kabupaten Aceh Jaya. *Elementary Education Research*, 8(1). Retrieved from <https://jim.usk.ac.id/pgsd/article/view/22178>.
- Ridwan, M. F. A., Anjarini, T., & Ngazizah, N. (2023). Multimedia Interaktif Berbasis Problem Based Learning Pada Materi Ciri-Ciri MakhluK Hidup Bagi Siswa Sekolah Dasar. *Edukasiana: Jurnal Inovasi Pendidikan*, 2(1), 56–63. <https://doi.org/10.56916/ejip.v2i1.218>.
- Rivaldi, K. H. O., Putra, D. K. N. S., & Putra, I. K. A. (2018). Pengaruh Model Pembelajaran Problem Based Learning Berbantuan Audio Visual Terhadap Penguasaan Kompetensi Pengetahuan IPA. *Jurnal*

- Ilmiah Sekolah Dasar*, 2(2). <https://doi.org/10.23887/jisd.v2i2.15494>.
- Rosnelli, Mudjisusaty, Y., Darwin, Yuzni, S. Z., & Rahman, A. (2022). Implementation Of Prototype Curriculum In School. *Journal of Positive School ...*, 6(6), 4108–4126. Retrieved from <https://journalppw.com/index.php/jpsp/article/view/8117>.
- Safitri, R. L., & Kasrman, K. (2022). Pengaruh Media Audio Visual terhadap Hasil Belajar Materi Siklus Air pada Siswa Sekolah Dasar. *Jurnal Basicedu*, 6(5), 8746–8753. <https://doi.org/10.31004/basicedu.v6i5.3939>.
- Salam, R. (2017). Model pembelajaran inkuiri sosial dalam pembelajaran IPS. *HARMONY: Jurnal Pembelajaran IPS Dan PkN*, 2(1), 7–12. <https://doi.org/10.15294/harmony.v2i1.19965>.
- Saputra, H. (2021). Pembelajaran berbasis masalah (problem based learning). *Jurnal Pendidikan Inovatif*, 5(3), 1–9. <https://doi.org/10.17605/OSF.IO/GD8EA>.
- Sari, W., Rifki, A. M., Karmila, M., Dwiayama, F., & Aziz, M. B. (2020). Analisis kebijakan pendidikan terkait implementasi pembelajaran jarak jauh pada masa darurat covid 19. *Jurnal Mappesona*, 3(2). <https://doi.org/10.30863/mappesona.v3i2.830>.
- Sariningsih, I. R., Nugraha, A., & Setiadi, P. M. (2024). Pengaruh Penggunaan Video Animasi Terhadap Hasil Belajar Siswa Pada Materi Siklus Air Kelas V SDN 1 Pataruman. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 9(4), 227–241. <https://doi.org/10.23969/jp.v9i4.17898>.
- Setiyawan, H. (2021). Pemanfaatan Media Audio Visual dan Media Gambar Pada Siswa Kelas V. *Jurnal Prakarsa Paedagogia*, 3(2). <https://doi.org/10.24176/jpp.v3i2.5874>.
- Sinaga, M. E., Destiniar, D., & Fuadiah, N. F. (2022). Pengaruh Model Pembelajaran PBL (Problem Based Learning) Terhadap Kemampuan Pemecahan Masalah Siswa Pada Materi Statistika. *Jurnal Pendidikan Dan Konseling (JPDK)*, 4(5). <https://doi.org/10.31004/jpdk.v4i5.7501>.
- Siregar, Z., & Marpaung, T. B. (2020). Pemanfaatan Teknologi Informasi dan Komunikasi (TIK) Dalam Pembelajaran di Sekolah. *BEST Journal (Biology Education, Sains and Technology)*, 3(1), 61–69. <https://doi.org/10.30743/best.v3i1.2437>.
- Siswondo, R., & Agustina, L. (2021). Penerapan strategi pembelajaran ekspositori untuk mencapai tujuan pembelajaran Matematika. *Himpunan: Jurnal Ilmiah Mahasiswa Pendidikan Matematika*, 1(1), 33–40. Retrieved from <https://jim.unindra.ac.id/index.php/himpunan/article/view/3155>.
- Sumartini, T. sari. (2016). Peningkatan Kemampuan Pemecahan Masalah Matematis Siswa melalui Pembelajaran Berbasis Masalah. *Mosharafa: Jurnal Pendidikan Matematika*, 5(2), 148–158. <https://doi.org/10.31980/mosharafa.v5i2.391>.
- Suprianto, E. (2020). Implementasi Media Audio Visual untuk Meningkatkan Kemampuan Menulis Teks Eksplanasi. *Trapsila: Jurnal Pendidikan Dasar*, 1(02), 22. <https://doi.org/10.30742/tpd.v1i02.810>.
- Surya, Y. F. (2017). Penerapan model pembelajaran problem based learning untuk meningkatkan hasil belajar matematika siswa kelas IV SDN 016 Langgini Kabupaten Kampar. *Jurnal Cendekia*, 1(1), 38–53. <https://doi.org/10.31004/cendekia.v1i1.7>.
- Syarifudin, A., Dhewy, R. C., & Agustina, E. N. S. (2021). Pengaruh Model Brain Based Learning Terhadap Hasil Belajar Siswa. *JEDMA Jurnal Edukasi Matematika*, 1(2), 1–7. <https://doi.org/10.51836/jedma.v1i2.155>.
- Tafonao, T. (2018). Peranan Media Pembelajaran Dalam Meningkatkan Minat Belajar Mahasiswa. *Jurnal Komunikasi Pendidikan*, 2(2), 103–114. <https://doi.org/10.32585/jkp.v2i2.113>.
- Unik Hanifah Salsabila, Maulida Nurus Sofia, Hilda Putri Seviarica, M. N. H. (2020). Urgensi Penggunaan Media Audiovisual Dalam Meningkatkan Motivasi Pembelajaran Daring Di Sekolah Dasar. *INSANIA: Jurnal Pendidikan Alternatif Kependidikan*, 2(2), 284–304. <https://doi.org/10.24090/insania.v25i2.4221>.
- Vera, K., & Wardani, K. W. (2018). Peningkatan Keterampilan Berfikir Kritis melalui Model Problem Based Learning Berbantuan Audio Visual pada Siswa Kelas IV SD. *Jurnal Jartika*, 1(2), 33–45. Retrieved from <https://journal.rekarta.co.id/index.php/jartika/article/view/252>.
- Virgiana, A., & Wasitohadi, W. (2016). Efektivitas Model Problem Based Learning Berbantuan Media Audio Visual Ditinjau Dari Hasil Belajar Ipa Siswa Kelas 5 Sdn 1 Gadu Sambong - Blora Semester 2 Tahun 2014/2015. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 6(2), 100. <https://doi.org/10.24246/j.scholaria.2016.v6.i2.p100-118>.
- Wati, E. R. (2016). *Ragam Media Pembelajaran*. Yogyakarta: Kata Pena.
- Woa, K. M., Utaya, S., & Susilo, S. (2018). Pengaruh Model Pembelajaran Problem Based Learning terhadap Kemampuan Memecahkan Masalah Geografi pada Siswa SMA. *Jurnal Pendidikan*, 3(3), 406–411. <https://doi.org/10.17977/jptpp.v3i3.10709>.
- Wulandari, A. P., Salsabila, A. A., Cahyani, K., Nurazizah, T. S., & Ulfiah, Z. (2023). Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar. *Journal on Education*, 5(2), 3928–3936. <https://doi.org/10.31004/joe.v5i2.1074>.