International Summit on Science Technology and Humanity
ISETH 2024
ISSN: 2615-1588 (online)

Utilization of Audio-Visual Media to Develop Students' Critical Thinking Skills in Science Subject for Fifth Grade

Muthi'a Rachmawati Cholifah[1], Ratnasari Diah Utami[1*]

[1] Faculty o Teacher Training and Education, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia

[*] Corresponding author: rdu150@ums.ac.id.me

Abstract

Purpose: The study aims to be achieved are (1) Measuring the effect of using audio-visual media on the development of critical thinking skills of elementary school students in science learning and (2) Evaluating the effectiveness of audio-visual media in facilitating in-depth understanding of human circulatory system material.
Methodology: The study used quantitative methods with a Quasi-Experimental Design design.
Results: The results of average value of students' initial critical thinking skills (pretest value) in the experimental class was 60.60 and the control class was 55.40. Then the average value of students' final critical thinking skills (posttest value) in the experimental class was 85.53 and the control class was 77.06. Based on the hypothesis proposed, it shows that there is a significant increase in the critical thinking skills of students who use audiovisual media, with the average posttest value higher than the control group. From the averages that have been explained, it can be concluded that there is an influence in the use of audio-visual media on the development of critical thinking skills of elementary school students in science learning.
Applications/Originality/Value: This research presents a novel approach by examining the use of audio-visual media to develop critical thinking skills in fifth-grade science students. Unlike previous studies that generally focus on improving learning outcomes, this study specifically explores its impact on critical thinking, particularly for complex topics like the human circulatory system, within a primary school setting.

Introduction

The current Industrial Revolution 4.0 requires educational standards to keep up with the times (Fauziah & Fitria, 2022). The 21st century is known as the era of globali-zation, which automatically demands quality human resources produced by institu-tions that are professionally managed and able to produce superior graduates (Wija-ya et al., 2016). Modern learning aims to hone 21st-century skills, which include various important competencies such as critical thinking, creativity, communication, and collaboration (Mardiyah et al., 2021). Critical thinking is a key competency that every student needs to have to face current and future challenges (Nugraha, 2018). Critical thinking not only includes the ability to think analytically and evaluatively, the ability to make rational decisions, and the ability to solve problems in innovative ways. The ability to think critically allows a person to provide clear explanations, develop basic skills, make conclusions, provide clarification, and take action (An-drisyah, 2018). Paul and Elder (2007: 8) mention that "The ability to think is the only capacity that can be used to learn. One of the thinking skills that is very im-portant to develop is critical thinking skills."

Elementary school is a time of forming a child's personality and perspective, they need to develop critical thinking skills at this time. According to Piaget's theo-ry, elementary school pupils are in the concrete operational phase of cognitive de-velopment, during which they start to comprehend abstract ideas and basic reasoning (Abdurakhman & Rusli, 2020). Critical thinking skills of elementary school students in Indonesia are still low due to conventional teaching methods and a lack of inter-esting learning media. The 2018 PISA results ranked Indonesia 72 out of 78 coun-tries, showing Indonesian students are weak in problem-solving and reasoning (Soedarnadi & Sulisworo, 2022). The dominance of lecture and memorization meth-ods does not provide enough space to develop students' critical thinking skills. Cur-rent conventional learning, which focuses on teacher explanation and one-way in-formation delivery, without the support of modern media, makes students feel bored and lackluster (Intaniasari et al., 2022). The accuracy of teachers in choosing learn-ing media will support the success of the learning process (Lubis & Mavianti, 2022).
In general, media includes everything, such as people, materials, or events, that provide opportunities for students to learn new things, and develop attitudes, abilities, and knowledge. Another component that aids in the teaching and learning process is learning media (Soedarnadi & Sulisworo, 2022). Learning media are vari-ous tools that can be used by teachers

as a means to assist the teaching process (Aini & Abdul, 2022). Students use learning media to facilitate understanding of infor-mation and support effective learning (Nuritha & Tsurayya, 2021). Teachers must innovate creatively to provide learning media designed through collaboration, inde-pendently, or by purchasing (Rahman, 2018). One of the learning media that in-volves information technology is audio-visual-based media. The utilization of audio-visual media is one of the innovations that can help create more effective and inter-esting learning.

Audio-visual media is the distribution of information by utilizing vision and hearing (Nurhidayat et al., 2021). Audiovisual media includes various forms such as videos, films, animations, and other multimedia that combine elements of images and sound to convey information. The use of this media in education has been prov-en effective in increasing student interest in learning and strengthening concept un-derstanding (Ardiansyah & Nugraha, 2022). Audiovisual media is very interesting because it displays videos with images and sounds that stimulate the senses of sight and hearing (Nomleni & Manu, 2018). Audio-visual media offers more advantages because it can overcome space and time constraints and display objects realistically and flexibly (Huda & Pertiwi, 2018). Audio-visual media can complement students' experiences in reading, discussion, and practice activities, and can display objects that are difficult to see directly. This media allows repetition of the process, increas-es motivation, instills positive attitudes, and can trigger group thinking and discus-sion (Fadillah, 2020). Especially in the field of Natural Sciences (IPA), this media offers a more contextual learning experience that helps students visualize abstract concepts. The average student evaluation score of 77.1, with a good practicality cat-egory based on practicality tests in large classes, indicates that the use of problem-based audiovisual learning materials with Google Classroom can enhance students' critical thinking abilities (Soedarnadi & Sulisworo, 2022). This research is guided by previous research with the title "A Blended Learn-ing Environment for Individualized English Listening and Speaking Integrating Crit-ical Thinking" with the research subjects being students at a large university in Tai-wan (Yang et al., 2013). "The Effectiveness of AudioVisual Media in Improving Student Learning Outcomes in Integrated Social Studies Class VII MTS. Al Yusu-fiah" with the research subject being seventh-grade students at MTs Al Yusufiyah (Nurparida & Srirahayu, 2021). This study uses quantitative research to evaluate the improvement of critical thinking skills through pre-tests and post-tests. This study measured the effect of audiovisual media on the development of critical thinking skills of elementary school students and evaluated the effectiveness of this type of media.

This research offers novelty in the context of utilizing audio-visual media to build critical thinking skills of fifth grade students in science subjects at for fifth grade students at Sragen 4 Elementary School. Most previous studies have focused on the effectiveness of audio-visual media in general in improving learning out-comes. However, this study is more specific, assessing the extent to which this me-dia can help build critical thinking skills, especially on complex material such as the human circulatory system. This material was chosen due to its abstract nature and is often a challenge in classroom learning. This research also targets the learning envi-ronment in elementary schools, which is still rarely the focus of similar research. In addition, this research also contributes to integrating modern learning media.

The problem formulations proposed in this study are as follows: (1) How does the use of audio-visual media affect the critical thinking skills of 5th-grade elementary school students in science learning? (2) Can audio-visual media help students understand human circulatory system material better than conventional methods? based on these questions, the study aims are (1) to measure the effect of using audio-visual media on the development of critical thinking skills of elemen-tary school students in science learning and (2) to evaluate the effectiveness of au-dio-visual media in facilitating in-depth understanding of human circulatory system material. By answering the formulation of these problems, this research is expected to make a real contribution to the world of education, especially in the development of innovative learning methods at the elementary school level. This research also aims to provide practical guidance for teachers in selecting and using relevant learn-ing media to improve students' critical thinking skills, which are essential for facing global challenges in the future.

Metodology

This research uses a quantitative method with a Quasi-Experimental Design design. This design was chosen because it allows researchers to compare the effect of audio-visual media on students' critical thinking skills using two groups, namely the experimental group will be given learning using audio-visual media. In contrast, the control group will be taught using conventional methods. Both groups were given a pretest to measure initial ability, and then after the experimental group received treatment, both groups were given a posttest. The pretest and posttest results from both groups are compared to determine the effect of the treatment on student learning outcomes. This method is more valid because it involves a comparison between groups that get treatment and those that do not. The experimental research method is a quantitative approach that is carried out through experiments to see how particular treatments affect other treatments under carefully monitored circumstances (Sugiyono, 2017).

The selection of the location and research subjects was carried out by purposive sampling by considering the readiness of technological facilities that support the use of audio-visual media, as well as the characteristics of students according to the research needs. The experimental and control groups each consisted of 25 students, so the total research subjects were 50 students. The research instrument used was a critical thinking ability test in the form of description questions developed based on critical thinking indicators. The instrument grids included human circulatory system material

in the curriculum. The test was given in two stages, namely a pretest before learning began to measure students' initial abilities, and a posttest after treatment was given to assess the improvement of critical thinking skills.The hypothesis in the study; H1: there is an effect of audio-visual learning media on students' critical thinking skills in fifth grade science subjects at Sragen 4 Elementary School and H0: there is no effect of audio-visual learning media on students' critical thinking skills in fifth grade science subjects at Sragen 4 Elementary School. The research procedure was carried out in several stages. The first stage is preparation, which includes the development of audio-visual media, preparation of research instruments, and testing of instruments to ensure their validity and reliability. The second stage was the implementation of research in the classroom. At this stage, the experimental group was given learning using audio-visual media. In contrast, the control group was taught with conventional methods on the same material. The learning was designed to provide opportunities for students to develop critical thinking skills through discussion and content-based problem-solving delivered in the media. The final stage is data analysis, which is carried out by comparing pretest and posttest results between experimental and control groups using statistical tests, such as the t-test, to determine the significance of differences in learning outcomes (Sugiyono, 2017).

Table 1. Research Design: The Utilization of Audio-Visual Media to Enhance Students' Critical Thinking Skills.

Class	Treatment	Post Test
Experiment	X1	O
Control	X2	O

Explanation:
X: Treatment
O1: Pre-test score (before treatment is given)
O2: Post-test score (after treatment is given)

Tabel 2. Blueprint for Research Instruments on the Utilization of Audio-Visual Media to Enhance Students' Critical Thinking Skills.

No.	Observed aspects	Very good (4)	Good (3)	Enough (2)	Less (1)
1	**Ability to Explain the Function of the Heart in the Circulatory System**.	Students can explain the function of the heart thoroughly and accurately.	Students explain the function of the heart with some missing details.	Students provide unclear explanations.	Students have difficulty explaining the function of the heart.
2	Ability to Analyze Blood Flow in the Body (Oxygenation).	Students analyze blood flow clearly and accurately.	Students analyze most of the blood flow correctly.	Students analyze with some errors.	Students have difficulty analyzing blood flow.
3	Ability to Use Information to Solve Problems.	Students can solve problems using all relevant information.	Students use some information to solve problems.	Students use information in a limited manner.	Students have difficulty using information to solve problems.

Table 3. Guidelines for Assessing Critical Thinking Skills in Pre-tests and Post-tests (Suriawati & Mundilarto, 2019).

Critical Category.	**Critical Indicators**.	**Critical Sub-Indicators**.	**Number of Questions**.
Providing a Simple Explanation.	**Argumentation**	Finding similarities and differences.	3
Basic skills.	Comparing the credibility of each source.	Able to provide reasons.	3
Conclusion Diagram.	Making deductions and comparing inductions.	Drawing conclusions inductively Drawing conclusions deductively	3
Further classification	Defining terms	Identifying the validity of the content of a definition.	3
Organizing tactics and strategies.	Defining actions.	Formulating alternative solutions.	3

The interpretation scale criteria table is used as a reference to see the percentage and feasibility level of the media trial. If the product yields a percentage result of < 25%, it is declared unfit for use. Whereas if the obtained percentage is ≥ 75%, it is declared very fit for use.

Result and Discuccion

Results of Validity and Reliability Tests of the Test Instruments

After conducting the validation test, the test instrument was then tested on students who were not research subjects. After the pilot test, the data was validated and reliability was assessed using SPSS 25 software. This step is essential to determine the extent to which the test instrument accurately measures the targeted aspects and how consistently the test instrument can be utilized. The following table presents the results of the validation and reliability tests for the pretest and posttest instruments.

Tabel 4. Results of Validity Testing for Pretest and Posttest Questions

No.	Question numer	Result	Explanation
1	Question Number 1	0,42972	VALID
2	Question Number 2	0,458794	VALID
3	Question Number 3	0,46826	VALID
4	Question Number 4	0,550112	VALID
5	Question Number 5	0,463991	VALID
6	Question Number 6	0,416558	VALID
7	Question Number 7	0,543635	VALID
8	Question Number 8	0,585801	VALID
9	Question Number 9	0,512233	VALID
10	Question Number 10	0,499222	VALID
11	Question Number 11	0,505987	VALID
12	Question Number 12	0,42768	VALID
13	Question Number 13	0,519395	VALID
14	Question Number 14	0,493082	VALID
15	Question Number 15	0,441606	VALID

Based on the table above, when compared to the table value of (r = 0.396), the calculated r values for questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15 are greater than 0.396. Therefore, it can be concluded that questions 1 through 15 are valid.

Tabel 5. Results of the Reliability Test for Pretest and Posttest Questions

Reliability Statistics

Cronbach's Alpha	N of Items
.768	15

Based on the table above, the calculated r value is 0.768, which is greater than 0.60. As a result, it can be said that the pretest and posttest tools are trustworthy and consistent.

Normality Test

Normality tests are conducted to ascertain whether the data obtained by the researcher adhere to a normal distribution. (Afrianti & Nur Wahyuni, 2021). The data distribution is regarded as normal if the significance value (p) is greater than 0.05, and as non-normal if the p-value is less than 0.05. This is the standard by which normality is evaluated. The computation's outcomes are shown in the table below.

Tests of Normality

	Class	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Critical Thinking	Pretest experiment	.098	25	.200*	.965	25	.512
	Posttest experiment	.168	25	.068	.927	25	.076
	Control Group Pretest (Conventional)	.210	25	.006	.857	25	.002
	Control Group Posttest (Conventional)	.143	25	.200*	.971	25	.682

Tabel 6. Results of the Normality Test

Based on the table above, it can be concluded that Ho is rejected, indicating a significant relationship between critical thinking skills in the control and experimental classes. This also suggests that the critical thinking abilities of students in the control class are correlated with those in the experimental class.

Homogenity Test

Tabel 7. Pretest Homogeneity Test

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Critical Thinking	Based on Mean	1.674	1	48	.202
	Based on Median	.450	1	48	.506
	Based on Median and with adjusted df	.450	1	39.351	.506
	Based on trimmed mean	1.349	1	48	.251

Tabel 8. Posttest Homogeneity Test

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Critical Thinking	Based on Mean	2.792	1	48	.101
	Based on Median	1.788	1	48	.187
	Based on Median and with adjusted df	1.788	1	45.634	.188
	Based on trimmed mean	2.920	1	48	.094

The aforementioned table indicates that there is variability in the variance or diversity of students' critical thinking abilities across the experimental and control groups when evaluated using the pretest and posttest.

Hypothesis Testing Using Paired Sample T-Test

Hypothesis testing is conducted to determine whether there is an effect of audio-visual media on enhancing the critical thinking skills of fifth-grade students at Sragen 4 Elementary School. Before performing the hypothesis test, the researcher formulates the hypotheses. The hypotheses for this study are as follows, Ha: There is an effect of audio-visual learning media on the critical thinking skills of students in the Natural Science subject for fifth grade at Sragen 4 Elementary School. H0: There is no effect of audio-visual learning media on the critical thinking skills of students in the Natural Science subject

for fifth grade at Sragen 4 Elementary School. The analysis used by the researcher to test this hypothesis employs the paired sample t-test. The paired sample t-test is conducted using SPSS version 25.

Tabel 9. Paired Sample Statistics Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretestexperiment	60.6000	25	5.75101	1.15020
	Posttestexperiment	85.5333	25	6.66180	1.33236
Pair 2	Pretestcontrol	55.4000	25	7.59630	1.51926
	Posttestcontrol	77.0667	25	5.09811	1.01962

The output for Pair 1 displays the descriptive statistics for the two samples that are being examined, which are the experimental class's pretest and posttest results. The average score for the pretest is 60.60, while the average score for the posttest is 85.53. The total sample size used for this research is 25 students. The standard deviation for the pretest is 5.751 and for the posttest, it is 6.661. Since the average pretest score of 60.60 is less than the posttest score of 85.53, there is a descriptive difference in the average scores between the pretest and posttest.

In the output for Pair 2, the descriptive statistics for the pretest and posttest scores in another experimental class are shown. The average pretest score is 55.40, while the average posttest score is 77.06. The sample size remains at 25 students. The standard deviation for the pretest is 7.596 and for the posttest, it is 5.098. As the average pretest score of 55.40 is less than the posttest score of 77.06, there is also a descriptive difference in the average scores between the pretest and posttest.

Tabel 10. Paired Sample Correlation Test

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pretestexperiment & posttestexperiment	25	-.108	.606
Pair 2	pretestcontrol & posttestcontrol	25	-.076	.718

The correlation test results, which show the relationship between the two datasets—more especially, the pretest and posttest variables—are displayed in the output above. According to the results for Pair 1, the significance value (Sig.) is 0.60 and the correlation coefficient is -0.108. There is a correlation between the pretest and posttest variables, as indicated by the Sig. value of 0.60, which is higher than 0.05.

Similarly, the output for Pair 2 reveals a correlation coefficient of -0.076, with a significance value (Sig.) of 0.71. Since the Sig. value of 0.71 is also greater than 0.05, it can be concluded that there is a relationship between the pretest and posttest variables.

Tabel 11. Paired Sample T-Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pretesteksperimen - posttesteksperimen	-24.93333	9.26063	1.85213	-28.75593	-21.11073	-13.462	24	.000
Pair 2	Pretestkontrol - posttestkontrol	-21.66667	9.46485	1.89297	-25.57356	-17.75977	-11.446	24	.000

Hypothesis Test

H1: There is an effect of audio-visual learning media on the critical thinking skills of fifth-grade students in the Natural Science subject at Sragen 4 Elementary School.

H0: There is no effect of audio-visual learning media on the critical thinking skills of fifth-grade students in the Natural Science subject at Sragen 4 Elementary School.

The Sig. (2-tailed) value for Pair 1 is 0.00, which is less than 0.05, according to the output. Thus, it can be said that students in the experimental class that used audio-visual media had significantly different average learning outcomes between their pretest and posttest scores. Guidelines for Making Decisions in the Paired Sample T-Test: (1) Ha is rejected and H0 is accepted if the significance value (Sig.) is less than 0.05, and (2) Ha is accepted and H0 is rejected if the Sig. is more than 0.05.

There is a significant effect observed before the implementation of audio-visual media (pretest) and after its implementation (posttest) on students' learning outcomes in the Natural Science subject concerning the topic "Circulatory

System." This indicates that the use of audio-visual media positively influences the enhancement of students' critical thinking skills in the Natural Science subject for fifth-grade students at Sragen 4 Elementary School.

Discussion

In the current digital era, audio-visual-based learning media has emerged as an effective method for presenting abstract concepts in a concrete manner, particularly in science subjects such as Natural Science (IPA). Audio-visual media can elucidate these concepts more clearly and capture students' attention. Through the use of this media, it is anticipated that teachers can more effectively stimulate the cognitive development of children (Nurparida & Srirahayu, 2021). Through audio-visual media, students can see, hear, and experience the real context of a topic, making it easier for them to understand and develop analytical thinking. This process stimulates students' critical thinking skills, which encompass the ability to analyze, evaluate, and solve problems logically. Such media allows for the repetition of processes, enhances motivation, fosters a positive attitude, and can trigger group thinking and discussion (Fadillah, 2020).

Research conducted in fifth-grade classes demonstrates that the use of audio-visual media has a significant impact on enhancing students' critical thinking skills. The results from the pretest and posttest reveal a notable difference in students' abilities before and after the implementation of audio-visual media. Students who learned through this medium exhibited a better understanding of the Natural Science material and were more adept at critical thinking in evaluating and solving problems. Overall, the utilization of audio-visual media in Natural Science instruction positively contributes to the improvement of students' critical thinking skills. By leveraging this media, teachers can create a more interactive, engaging learning environment that stimulates students' critical thinking, ultimately enhancing the quality of classroom learning.

Conclusion

In order to assess the critical thinking abilities of fifth-grade students at Sragen 4 Elementary School, this study used a descriptive test instrument with 15 items centered on the circulatory system. This was done in light of the research findings. The experimental class's average pretest score for critical thinking skills was 60.60, whereas the control group's average score was 55.40. Subsequently, the average final critical thinking skill score (posttest) in the experimental class increased to 85.53, compared to 77.06 in the control class. This indicates that the average score in the experimental class, which utilized audio-visual media (educational videos), was higher than that of the control class, which employed a conventional teaching model (lectures). The averages outlined above demonstrate that the use of audio-visual media in learning can effectively enhance students' critical thinking skills. Thus, the use of audio-visual media is proven effective in improving students' understanding of human circulatory system material compared to conventional methods.

Acknowledgments. All praise and gratitude are directed to Allah SWT for His blessings and grace, which have provided me with the strength and patience to complete this research. I would like to express my heartfelt thanks to everyone who has supported and contributed to the execution of this study. My sincere appreciation goes to my supervising lecturer, who patiently offered guidance, direction, and invaluable feedback throughout the research process.

I also extend my gratitude to the school, teachers, and students of Sragen 4 Elementary School for their opportunity and support during this research. With profound appreciation, I want to thank my parents and sibling for their unwavering support, endless prayers, and love, which have been a strong foundation for every step I take.

Additionally, I wish to express my gratitude to my closest friends who have stood by me through thick and thin. Thank you for your support, laughter, and invaluable patience. Each of you has become an inseparable part of this journey, and may all the goodness you have given be rewarded abundantly.

Lastly, I want to acknowledge myself for persevering this far. Amidst all the challenges, confusion, and exhaustion, I continued to fight and never gave up. Thank you for choosing to move forward, even when the world felt so heavy. Thank you for believing in your abilities, despite frequent doubts. Thank you for allowing yourself the space to grow, learn from every failure, and celebrate each small step that brings you closer to your dreams.

Disclosure of Interests. It is now necessary to declare any competing interests or to specifically state that the authors have no competing interests.

References

Abdurakhman, O., & Rusli, R. K.Teori Belajar dan Pembelajaran. INSANIA : Jurnal Pemikiran Alternatif Kependidikan, 25(1), 103–113. https://doi.org/10.24090/insania.v25i1.3651. (2020).

Afrianti, I., & Nur Wahyuni. Pengembangan Perangkat Pembelajaran Bahasa Inggris Berbasis Lingkungan "Leksikon Dalam Bahasa Mbojo" Untuk Mengembangkan Kreativitas Mahasiswa. JIIP - Jurnal Ilmiah Ilmu Pendidikan, 4(6), 455–461. (2021). https://doi.org/10.54371/jiip.v4i6.286

Aini, K. N., & Abdul, M. EFEKTIFITAS GAME MARBEL MUSLIM KIDS PADA MATA PELAJARAN PAI UNTUK MENINGKATKAN PEMBELAJARAN YANG MENYENANGKAN. 9, 356–363. (2022).

Andrisyah. Peningkatan kemampuan berpikir kritis dalam pembelajaran sains melalui pendekatan inquiry. Tunas Siliwangi: Jurnal Program Studi …, 4(2), 60–70. (2018). http://www.e-journal.stkipsiliwangi.ac.id/index.php/tunas-siliwangi/article/view/1226

Ardiansyah, & Nugraha, M. L. Analisis Pemanfaatan Media Pembelajaran Youtube Dalam Meningkatkan Pemahaman Konsep Matematika Peserta Didik. Semnas Ristek (Seminar Nasional Riset Dan Inovasi Teknologi), 6(1), 912–918. (2022). https://doi.org/10.30998/semnasristek.v6i1.5828

Fadillah, M. Upaya Meningkatkan Kemampuan Membaca Siswa Dengan Pemanfaatan Media Audio-Visual Di Kelas Rendah. Jurnal Penelitian, Pendidikan Dan Pengajaran: JPPP, 1(1), 16. (2020). https://doi.org/10.30596/jppp.v1i1.4453

Fauziah, U., & Fitria, Y. Pengaruh Model Pembelajaran Berbasis Masalah dan Kemampuan Awal terhadap Kemampuan Berpikir Kritis Siswa pada Pembelajaran Tematik Terpadu. Jurnal Basicedu, 6(2), 2836–2845. (2022). https://doi.org/10.31004/basicedu.v6i2.2502

Huda, M. J., & Pertiwi, A. Y. Keefektifan Media Audiovisual Terhadap Motivasi Belajar Siswa di Sekolah Dasar. Jurnal Pendidikan:, 2(4), 332–337. (2018).

Intaniasari, Y., Utami, R. D., Purnomo, E., & Aswadi, A. Menumbuhkan Antusiasme Belajar melalui Media Audio Visual pada Siswa Sekolah Dasar. Buletin Pengembangan Perangkat Pembelajaran, 4(1). (2022). https://doi.org/10.23917/bppp.v4i1.19424

Lubis, T. C., & Mavianti. Penerapan Media Audio Visual dalam Meningkatkan Motivasi Belajar Pendidikan Agama Islam Pada Anak. Jurnal Raudhah, 10(2), 45–53. (2022). http://jurnaltarbiyah.uinsu.ac.id/index.php/raudhah

Mardiyah, R. H., Aldriani, S. N. F., Chitta, F., & Zulfikar, M. R. Pentingnya Keterampilan Belajar di Abad 21 sebagai Tuntutan dalam Pengembangan Sumber Daya Manusia. 71(1), 63–71. (2021).

Nugraha, W. S. Peningkatan Kemampuan Berpikir Kritis Dan Penguasaan Konsep Ipa Siswa Sd Dengan Menggunakan Model Problem Based Learning. EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru, 10(2), 115. (2018). https://doi.org/10.17509/eh.v10i2.11907

Nurhidayat, N., Katoningsih, S., Utami, R. D., Maryana, W., Ishartono, N., Sidiq, Y., Irfadhila, D., & Siswanto, H. Pemanfaatan Media Audio Visual dalam Pembelajaran Daring Materi IPA Siswa SD Kelas Rendah. Buletin KKN Pendidikan, 3(1), 83–90. (2021). https://doi.org/10.23917/bkkndik.v3i1.14832

Nuritha, C., & Tsurayya, A. Pengembangan Video Pembelajaran Berbantuan Geogebra untuk Meningkatkan Kemandirian Belajar Siswa. Jurnal Cendekia : Jurnal Pendidikan Matematika, 5(1), 48–64. (2021). https://doi.org/10.31004/cendekia.v5i1.430

Nurparida, N., & Srirahayu, E. EFEKTIVITAS MEDIA AUDIO VISUAL DALAM MENINGKATKAN HASIL BELAJAR SISWA PADA PEMBELAJARAN IPS TERPADU KELAS VII MTs. AL YUSUFIAH. JISIP (Jurnal Ilmu Sosial Dan Pendidikan), 5(1). (2021). https://doi.org/10.58258/jisip.v5i1.1628

Rahman. Keterampilan Guru Abad 21 dalam Variabel Penguasaan Media Elektronik. Departemen Pendidikan Bahasa Sunda, 1, 1–6. (2018).

Soedarnadi, E. W., & Sulisworo, D. Pengembangan Media Pembelajaran Audiovisual Berbasis Masalah Berbantuan Google Classroom untuk Meningkatkan Kemampuan Berpikir Kritis Siswa. Ideguru: Jurnal Karya Ilmiah Guru, 7(3), 267–273. (2022). https://doi.org/10.51169/ideguru.v7i3.386

Sugiyono. Metode Penelitian Kualitatif Dan Kuantitatif. In Journal of Chemical Information and Modeling (Vol. 53, Issue January). (2017).

Suriawati, S., & Mundilarto, M. SETS approach-based audiovisual media for improving the students' critical thinking skills. Psychology, Evaluation, and Technology in Educational Research, 1(2), 95. (2019). https://doi.org/10.33292/petier.v1i2.15

Wijaya, E. Y., Sudjimat, D. A., & Nyoto, A. Transformasi Pendidikan Abad 21 Sebagai Tuntutan Pengembangan Sumber Daya Manusia di Era Global. Jurnal Pendidikan, 1, 263–278. (2016). http://repository.unikama.ac.id/840/32/263-278

Yang, Y. T. C., Chuang, Y. C., Li, L. Y., & Tseng, S. S. A blended learning environment for individualized English listening and speaking integrating critical thinking. Computers and Education, 63, 285–305. (2013). https://doi.org/10.1016/j.compedu.2012.12.012.