Indonesian Journal of Educational Development (IJED)

Indonesian Journal of Educational Development (IJED)
Volume 5, Issue 4, 2025, pp. 508-518
ISSN 2722-1059 (Online); ISSN 2722-3671 (Print)
DOI: https://doi.org/10.59672/ijed.v5i4.4526

DEVELOPMENT OF DIGITAL MEDIA SILIR (*SIKLUS AIR*) TO INCREASE LEARNING INTEREST OF GRADE IV STUDENTS OF SDN 5 CENDONO

Fenita Khairani*)[1], Fina Fakhriyah[2], Denni Agung Santoso[3]
[1]Universitas Muria Kudus, Kudus, Indonesia; 202133227@std.umk.ac.id
[2]Universitas Muria Kudus, Kudus, Indonesia; fina.fakhriyah@umk.ac.id
[3]Universitas Muria Kudus, Kudus, Indonesia; denni.agung@umk.ac.id
*)Corresponding author: Fenita Khairani; E-mail addresses: 202133227@std.umk.ac.id

ARTICLE INFO

Article history:
Received January 04, 2025
Revised January 16, 2025
Accepted February 5, 2025
Available online February 20, 2025

Keywords: Digital Media, Interes in Learning, Water Cycle

Abstract. This study aims to (1) determine the feasibility of SILIR learning media, and (2) the effectiveness of SILIR learning media on learning interest. This research uses the ADDIE model, with stages of analysis, design, development, implementation, and evaluation. The research subjects were 20 fourth grade students of SDN 5 Cendono, Dawe District, Kudus Regency. Data were collected through observation, interview, validation questionnaire, teacher and student response questionnaire, and learning interest questionnaire. The data were analyzed qualitatively and quantitatively to assess the feasibility of the product. The results showed that the needs analysis of students preferred visual and game-shaped media. SILIR media received a high feasibility score of 99% from media experts and 89% from material experts. Teacher and student responses were also positive, with scores of 90% and 91% respectively. In addition, students' interest in learning increased from 44% in the pre-test to 91% in the post-test, or an increase of 47%. Thus, SILIR media is effective in increasing learning interest.

INTRODUCTION

Education is a deliberate and intentional effort to develop human individuals, which leads to changes in knowledge, skills, and behavior that are reflected in the life of the nation, society, and family (Mansur & Rafiudin, 2020). In an educational environment, the interaction between teachers and students creates a learning environment. Without the help of all components of the education component, including effective learning media, the learning process will not run smoothly. In line with the opinion of Maulida et al (2020) education is a process of mobilizing various components directed by educators to students to achieve educational goals, education is also considered an important component in improving the quality of human resources. If the problem of education is addressed thoroughly, it will produce many human resources who are able to compete in the world of work amid advances in science and technology (Evi Yupani & Widana, 2023).

Students' disinterest in participating in the learning process is one of the challenges faced by educational actors. Based on this, students usually do not pay attention to what they are

learning, dislike and are not happy when learning takes place, do not feel proud or satisfied with the knowledge they acquire, and do not participate in learning activities. This problem should be addressed immediately by developing teaching media that can inspire students' enthusiasm and interest in learning. Creating learning media with automatic reinforcement and feedback, as well as attractiveness that offers guided, group, and individual or autonomous learning experiences is one method to conduct learning activities (Kusumaningtyas & Listianingsih, 2017). Students will do better if they are more interested in learning. The use of media in the classroom is one of the things that can make students more interested in learning. Of course, for the use of media to work well and increase students' interest in learning, it must also be combined with the use of appropriate learning methods, approaches, strategies, techniques, and models (Surentu et al., 2023).

Based on pre-research data collected through observations, interviews, questionnaires and documentation with grade IV students and teachers in IPAS learning, the learning problem at SDN 5 Cendono is that learning media is rarely used by teachers, as they prefer to teach students through lectures. The students now admit that, particularly in the IPAS class, the teaching and learning process is not fun and repetitive if done in the manner described above. This is because lecturers often use textbooks and rarely use learning media, making it difficult for students to understand the information presented and making them bored. The learning process becomes less enjoyable and students' interest in learning diminishes when technology is not used and when learning materials and interactive learning media are not used in a varied way. Interest in learning according to Slameto (2013) is the feeling of pleasure and enthusiasm of students towards a subject or learning activity without any external pressure. The indicators of interest are a). feelings of pleasure, b). interest, c). acceptance, d). student involvement.

This is contrary to the desired state of affairs during the learning period that should have been included in the Merdeka Curriculum, teachers use media to improve continuous learning achievement. To get the best results, students' enthusiasm in learning is also influenced by the use of learning media. The use of media in the learning process has a significant impact on its success and smoothness because it serves as an intermediary and auxiliary tool when the teacher is unable to adequately convey a concept through certain words or sentences due to its complexity or vagueness. Media can be defined as anything that can be used to channel messages from sender to receiver so that it can stimulate students' thoughts, feelings, attention, and interests in such a way that the learning process occurs (Sadiman et al., 2011).

Given the concerns mentioned above, creating creative, engaging and innovative learning for students is the best approach for educators to solve problems or make things better. They can utilize learning materials or learning media, such as digital learning media based on SILIR (Water Cycle) barcode scanning, which is available all the time. The growing sophistication of technology, learning media can also be made digital-based because it can combine media in the form of audio, video, animation, and graphics, so multimedia is one type of learning content that can attract students' interest (Purwati, 2021). In the digital era, educators must also be able to use modern and conventional teaching resources to help students participate in the learning process (Asari et al., 2023). The previous research that developed digital media to increase students' interest in learning was from Ferania et al (2022) KOMPAS media (Elementary Science Comic) has been validated by experts with very good results and when implementation on teachers and students shows a positive response indicating that this media

is effective and can increase student interest in learning. In addition, as for Bintharіningrum Hanatan et al. (2023) Interactive Digital Modules based on Discovery Learning produced very feasible results and during implementation to XI MIPA 2 class students showed better learning interest after the application of the Interactive Digital Module. Based on the above problems, the research "Development of SILIR (Water Cycle) Digital Media to Increase Student Learning Interest in Class IV SDN 5 Cendono" tries to increase student learning interest in IPAS learning. The main focus of this research is how SILIR digital media can increase student learning motivation.

METHOD

Research and development (R&D) techniques were used in this study. The process of creating a particular item through the stages of analysis, design, production, and evaluation in order to make it marketable is known as research and development. The ADDIE model, which has five stages-identification: analysis, design, development, implementation, and evaluation) was the development model used. One of the research strategies used to create specific items and assess their effectiveness is the development research method (Sukendra et al., 2023).

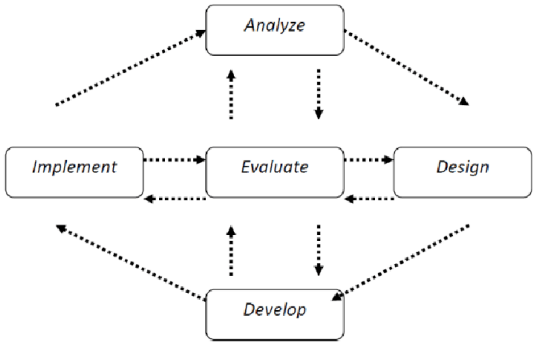

Image 1. Stages of the ADDIE Model (Adesfiana et al., 2022)

This study involved fourth grade students at SDN 5 Cendono as subjects. The research used qualitative and quantitative data. The resulting product was revised based on qualitative data analysis, such as comments, criticisms, and recommendations from media and material experts. Furthermore, the respondents' questionnaire scores and the percentage of media and material validation were used to generate quantitative data. The numerical data was then averaged using a Likert scale and converted into qualitative values. The following mathematical rating scale equation is used to determine the percentage of media feasibility:

$$\text{Percentage} = \frac{\text{Score obtained}}{\text{Maximum score}} \times 100\%$$

The percentages were divided by a Likert scale to categorize the results based on certain criteria.

Table 1. Criteria (Arikunto, 2013)

Interval Persentase	Value
<21%	Very Unfit
21% - 40%	Not Feasible
41% - 60%	Decent Enough
61% - 80%	Feasible
81% - 100%	Very Decent

This test aims to calculate the increase in value between the pre-test and post-test of student interest in learning that occurs before and after using the product, using a student interest questionnaire.

$$\text{N-Gain} = \frac{\text{posttest score -pretest score}}{\text{maximum score- pretest score}}$$

The results of the gain calculation were then interpreted using the N-Gain classification criteria as follows:

Table 2. N-Gain Classification Criteria

Value (g)	Description
$g \geq 0.7$	High
$0.3 \leq g < 0.7$	Medium
$g < 0.3$	Low

The media will fall into the high group if the value (g) is greater than 0.7, the medium category if the value (g) is between 0.3 and less than 0.7, and the low category if the value (g) is less than 0.3, according to these criteria.

Table 3. Category Interpretation of Effectiveness *N-Gain* (Setiawan & Aden, 2020)

Percentage (%)	Interpretation
>76	Effective
56-75	Moderately Effective
40-55	Less Effective
<40	Not Effective

Based on the results of the N-Gain effectiveness interpretation category table, the media is considered effective if the percentage value is greater than 76%, the category is quite effective if the percentage value is between 56% and 75%, the category is less effective if the percentage value is between 40% and 55%, and the category is ineffective if the percentage value is less than 40%.

RESULTS AND DISCUSSION

Analyze

The development of learning media is carried out using the ADDIE method, starting with the needs analysis stage. At this stage, information is collected about the learning conditions at SDN 5 Cendono class IV and the subjects to be taught, namely IPAS (Natural and Social Sciences). Data was collected through interviews and questionnaires. Interviews were conducted with the grade IV teacher and 3 representative students. From the interview with the teacher, it is known that the teacher wants learning media that is interesting, fun, and durable. Based on the results of the interview, the media that suits the needs of teachers is digital-based media. The advantages of digital learning media according to Rosmana et al., (2024) provide flexibility, interactivity, access to various learning resources, support collaboration, easy material management, and development of student technology skills, making learning more effective and interesting. From interviews with students, it was found that without media, the classroom atmosphere becomes boring. This is in line with Solikah (2020) creating a pleasant classroom atmosphere and using interesting media while learning can make students more interested and make it easier for them to understand the subject

matter. The impact of a boring classroom environment according to Maylitha et al (2023) will make students uninterested and unmotivated to learn.

Questionnaires were also given to all fourth grade students to find out their needs in learning. The questionnaire results show that most students agree that learning media can increase their enthusiasm in learning. This is in line with Nurfadhillah et al (2021) the use of media in learning can increase student interest and motivation, reduce learning that only focuses on memorization, help students think regularly and systematically, and foster understanding and develop values in themselves.

Image 2. Analysis Stage

Design

The design stage is the planning stage for making learning media based on the results of the previous analysis. In this stage, there are several steps, namely making research instruments, flowcharts, and storyboards (Khusnah et al., 2020). Flowcharts are made to help design learning media by showing the flow of concepts or programs as a whole. After the flowchart is complete, a storyboard is created to describe the appearance of each menu in the learning media, including text, as well as the use and function of each navigation button.

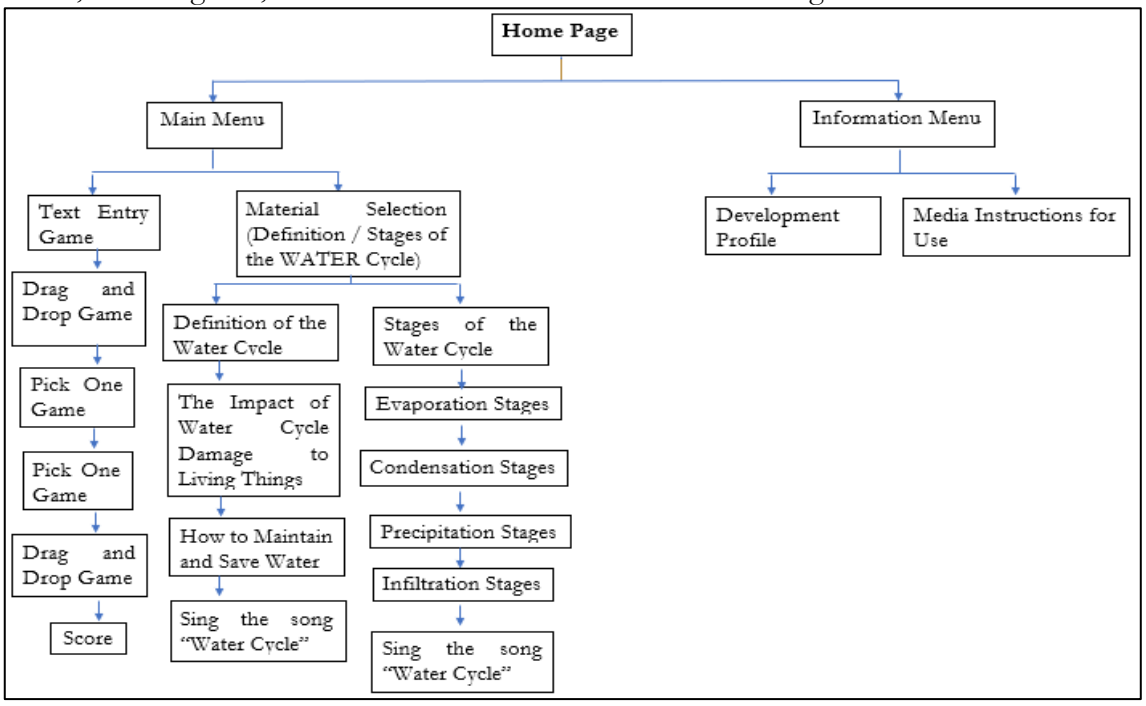

Image 3. Media Flowchart at the Design Stage

Development

The third stage, the development stage, is the process of integrating all components into one media in accordance with the storyboard and flowchart designs that have been made. The fourth stage, the implementation stage, is testing the digital-based SILIR learning media on end users, namely grade IV students of SDN 5 Cendono Kudus. The fifth stage, the evaluation stage, is analyzing data from validation of product feasibility by material and media experts, as well as from students to assess the feasibility of the media. The feasibility of the media is determined based on data obtained from material experts, media experts, and users. The data obtained at the material feasibility testing stage will be processed using Microsoft Excel, then the percentage of material feasibility is calculated and categorized using a Likert scale. The feasibility results of the material experts can be seen in Table 4.

Table 4. Material Expert Feasibility Results

Assessment Aspect	**Score (%)**	
	V1	**V2**
Appropriateness of Material	100%	82%
Language Suitability	87%	82%
Learning Support	100%	80%
Average Validity Score	**89%**	

The average assessment of the two material experts resulted in a feasibility percentage of 89%, which is included in the very feasible category. The data obtained at the media expert feasibility testing stage was processed using Microsoft Excel. Based on the data, researchers calculated the percentage of media feasibility, then converted the percentage into a feasibility category. Despite getting a percentage score with a decent category, SILIR learning media has revisions from material experts, namely citing the source of the pictures and songs taken, and the font size. Images from the media must be accompanied by the original source. The purpose of this input is to avoid plagiarism and show respect for the work of others. In addition, citing the source of photos is part of academic ethics. This is in line with Haris et al (2023) and Purnadewi & Widana (2023), whether done intentionally or unintentionally, an author can be found guilty of plagiarism if they fail to give proper credit to the source. This media offers a summary of the learning content so it is meant to be easy to read and use as a learning aid, but people find it difficult to read because the writing is too small and needs to be expanded. This is in line with Panjaitan et al (2021) that choosing the right font size affects the readability of the media and makes it easier for readers to understand. Song instruments in the media must include the composer's name and instrument name. This is done to help students understand the composer of the song and the tonal instruments used in it. According to Tamama (2020) & Suhardita et al. (2024), it is very important to include the name of the songwriter in educational materials to uphold copyright, prevent copying, and instill morality in giving proper appreciation to songwriters. The eligibility results from media experts can be seen in Table 5.

Table 5. Media Expert Feasibility Results

Assessment Aspect	**Score (%)**	
	V1	**V2**
View	100%	96%
Usage	100%	100%
Average Validity Score	**99%**	

The average assessment of the two material experts resulted in a feasibility percentage of 99%, which is included in the very feasible category. Despite getting a percentage score with a decent category, the SILIR learning media has revisions from the media experts, namely the color of the media that lacks contrast, and the selection of the size of the navigation buttons that are too small. Users will find it difficult to read if the font color is the same as the background, therefore, it should be adjusted to be more in line with the background. It is intended that these changes can improve the readability of the text and reduce the difficulty of readers in understanding the information presented. This supports the statement made by Patridina & Listyaputri (2022) that in order to communicate ideas effectively, it is crucial to differentiate between the background and text colors as this will make the information more readable and accessible to a wider audience. The icon button was enlarged once again, as the icon button was too small and hard to see. It is thought that by making the buttons easier to see, consumers will feel more comfortable when using this media. According to Sukmafitri et al (2021), navigation buttons on learning media should be immediately identifiable and have contrasting colors so that they stand out against the background. Buttons should be comfortable to press and proportional in size, not too big or small. To prevent user confusion, buttons should be positioned consistently on each page or section of learning materials. Buttons should also function well for their designed purpose.

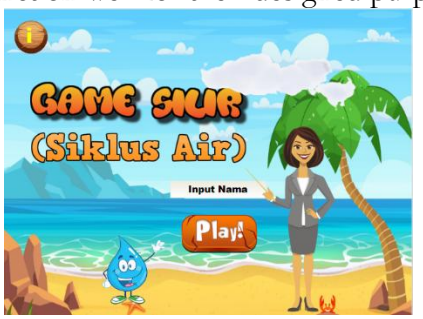

Image 4. SILIR Media Cover

Implementation

After the media is revised according to the suggestions of the validators and passes the validation stage by experts, the next step is the application of digital-based SILIR learning media to determine the teacher and student responses to the media. The results of the response or practicality of the media by the teacher can be seen in Table 6.

Table 6. Results of Media Practicality by Teachers

Aspect	Score	Percentage (%)
Learning Media Display	8	80%
Learning Media Content	22	88%
Role of Learning Media	15	100%
Amount	**45**	
Maximum Number	**50**	
Acquisition Score	**90%**	

Based on Table 6, the results of the practicality assessment from the teacher show that the sum of each aspect of the assessment obtained a score of 45. The average assessment of the teacher's response questionnaire to the digital-based SILIR media resulted in a feasibility percentage of 90%, which is included in the very feasible category. The aspects that are still lacking in the media practicality test by teachers are that the SILIR learning media still requires an internet connection to access it. This is in line with Permana et al (2024) learning

using digital media is an activity that involves students and teachers actively and utilizes the internet or digital technology at every level of the learning process, from planning, implementation, to evaluation. Based on this, the results obtained in the teacher's practicality questionnaire are less than perfect. Furthermore, the media was also applied to all fourth grade students of SDN 5 Cendono, who then filled out a response questionnaire according to their feelings after using the SILIR learning media. The results of the response or practicality of the media by students can be seen in Table 7.

Table 7. Results of Media Practicality by Wide Scale Students

Aspect	Score	Percentage (%)
Presentation Feasibility	274	91%
Language Feasibility	182	91%
Effects and Teaching Materials	183	90%
Feasibility of Overall Appearance	182	91%
Amount	**821**	
Maximum Number	**900**	
Acquisition Score	**91%**	

Based on Table 7, the results of the practicality assessment from students show that the total score for each aspect of the assessment is 821. The average assessment of the student response questionnaire to the digital-based SILIR media resulted in a feasibility percentage of 91%, which is included in the very feasible category. The advantages of digital-based SILIR learning media in the broad-scale student practical test are that students are already skilled when using the media during learning. This is in line with Heswari & Patri (2022) that digital learning materials use features similar to games on Android, so students will have no difficulty using them because they are familiar with technology in games.

Image 5. Stages of Media Implementation

Evaluation

To measure the effectiveness of increasing learning interest, a learning interest questionnaire was given to all fourth grade students of SDN 5 Cendono before the use of media (pre-test) and after the use of media (post-test). The difference between the post-test and pre-test scores of the learning interest questionnaire was calculated to determine a significant increase in student interest in learning after the application of digital-based SILIR learning media. The

results of the pre-test and post-test of the student interest questionnaire can be seen in Table 8.

Table 8. N-Gain Test Results per Learning Interest Indicator

Indicator	Pre-test	Post-test	N-Gain Score
Good Feelings	152	333	0.7
Student Engagement	122	228	0.8
Student Interest	139	229	0.8
Student Attention	121	303	0.9

Based on table 8, the N-Gain test results show that the pre-test and post-test scores on the student learning interest questionnaire show significant changes after the use of digital-based SILIR learning media. In the indicator of feeling happy, the pre-test score was 152 and the post-test was 333, resulting in an N-Gain of 0.7 which is included in the "High" category. Similarly, the student engagement indicator showed a pre-test score of 122 and a post-test score of 228, with an N-Gain of 0.8, which is also in the "High" category. The student interest indicator showed a pre-test score of 139 and post-test of 229, with an N-Gain of 0.8, which is included in the "High" category. In the student attention indicator, the pre-test score is 121 and the post-test is 303, resulting in an N-Gain of 0.9 which is in the "High" category. All of these indicators show an increase in student interest in learning after using digital-based SILIR learning media in class IV SDN 5 Cendono.

Image 6. Evaluation Stages

CONCLUSION

The development of digital-based learning media SILIR was carried out using the ADDIE method which consists of five steps. At the analysis stage, it was found that teachers and students need a pleasant medium to increase enthusiasm for learning. The design stages include the creation of research instruments, flowcharts, and storyboards. At the development stage, media begins to be formed according to the design that has been designed. The implementation stage is carried out by applying digital-based SILIR learning media to class IV students at SDN 5 Cendono. At the evaluation stage, validation tests were carried out by experts with results of 99% for the media test and 89% for the material test, which showed that the media was very feasible. Next, a practicality test was carried out by providing response questionnaires to teachers and students after using the media. The results obtained were 90% for teacher responses and 91% for student responses, which also showed that the media was very viable. The effectiveness of the learning medium SILIR has also been shown to increase students' interest in learning, with N-Gain results in pre-test and post-test study interest questionnaires showing scores of 0.7 for the feeling of pleasure indicator, 0.8 for the student involvement indicator, 0.8 for the student interest indicator, and 0.9 for the student's attention. Based on this description, it can be concluded that the

learning medium SILIR is very suitable for use and effective in increasing students' interest in learning.

BIBLIOGRAPHY

Adesfiana, Z. N., Astuti, I., & Enawaty, E. (2022). Pengembangan chatbot berbasis web menggunakan model addie. *Jurnal Khatulistiwa Informatika, 10*(2), 147–152. https://doi.org/10.31294/jki.v10i2.14050

Arikunto, S. (2013). Prosedur penelitian: Suatu pendekatan praktik. Rineka Cipta.

Asari, A., Purba, S., Fitri, R., Genua, V., Herlina, E. S., Wijayanto, P. A., Ma'sum, H., Ndakularak, I. L., Astridewi, S., Sele, Y., Nurmala, I., Mustakim, Waworuntu, A., Sukwika, T., Darmada, I. M., & Pratasik, S. (2023). *Media pembelajaran digital*. Istana Agency.

Binthariningrum Hanatan, R., Yuniastuti, E., & Adi Prayitno, B. (2023). Developing discovery learning-based interactive digital modules to increase students' learning interest. *Jurnal TELNODIK, 27*(1), 81–98.

Evi Yupani & Widana, I. W. (2023). The impacts of the stem-based inquiry learning models on critical thinking and concept mastery. *Indonesian Research Journal in Education, 7*(1), 171-184. https://doi.org/10.22437/irje.v7i1.24227

Ferania, M., Wardani, K. W., Satya Wacana, K., Keguruan, D. F., Pendidikan, I., Kristen, U., Wacana, S., & Abstract, S. (2022). Pengembangan media KOMPAS (Komik IPA SD) pada materi perubahan wujud benda untuk meningkatkan minat belajar siswa kelas 3 sekolah dasar. *Jurnal Ilmiah Wahana Pendidikan, 8*(22), 489–499. https://doi.org/10.5281/zenodo.7350382

Haris, I., Kusumarini, E., Zagoto, S. F. L., Kusumawati, I., & Arifudin, O. (2023). Pengenalan Teknis penggunaaan software turnitin dan mendeley dekstop untuk meningkatkan kualitas karya ilmiah mahasiswa baru. *Journal of Human And Education (JAHE), 3*(2), 172–178. https://jahe.or.id/index.php/jahe/article/view/187

Heswari, S., & Patri, S. F. D. (2022). Pengembangan media pembelajaran matematika berbasis android untuk mengoptimalkan kemampuan berpikir kreatif siswa. *JIP (Jurnal Inovasi Penelitian), 2*(8), 2715–2722. https://www.neliti.com/publications/469955/pengembangan-media-pembelajaran-matematika-berbasis-android-untuk-mengoptimalkan

Khusnah, N., Sulasteri, S., Suharti, S., & Nur, F. (2020). Pengembangan media pembelajaran jimat menggunakan articulate storyline. *Jurnal Analisa, 6*(2), 197–208. https://doi.org/10.15575/ja.v6i2.9603

Kusumaningtyas, N., & Listianingsih, W. (2017). Pengembangan media cergam untuk meningkatkan minat belajar matematika pada siswa sekolah dasar di daerah tertinggal. *Paradigma: Jurnal Filsafat, Sains, Teknologi, Dan Sosial Budaya, 23*(1), 73–79.

Mansur, H., & Rafiudin, R. (2020). Pengembangan media pembelajaran infografis untuk meningkatkan minat belajar mahasiswa. *Jurnal Komunikasi Pendidikan, 4*(1), 37. https://doi.org/10.32585/jkp.v4i1.443

Maulida, S., Mansur, H., & Fatimah. (2020). Pengembangan media video pembelajaran ipa untuk meningkatkan minat belajar siswa kelas IV sekolah dasar. *Journal of Instructional Technology J-INSTECH, 1*(1), 20–28.

Maylitha, E., Parameswara, M. C., Iskandar, M. F., Nurdiansyah, M. F., Hikmah, S. N., & Prihantini, P. (2023). Peran keterampilan mengelola kelas dalam meningkatkan minat belajar siswa. *Journal on Education, 5*(2), 2184–2194. https://doi.org/10.31004/joe.v5i2.871

Nurfadhillah, S., Ningsih, D. A., Ramadhania, P. R., & Sifa, U. N. (2021). Peranan media pembelajaran dalam meningkatkan minat belajar siswa SD Negeri Kohod III. *PENSA :*

Jurnal Pendidikan dan Ilmu Sosial, 3(2), 243–255. https://ejournal.stitpn.ac.id/index.php/pensa

Panjaitan, R. G. P., Titin, T., & Wahyuni, E. S. (2021). Kelayakan booklet inventarisasi tumbuhan berkhasiat obat sebagai media pembelajaran. *Jurnal Pendidikan Sains Indonesia, 9*(1), 11–21. https://doi.org/10.24815/jpsi.v9i1.17966

Patridina, E. P. B. G. G., & Listyaputri, D. R. (2022). Analisis poster sebagai media pembelajaran sejarah Afrika. *Jurnal Pendidikan, 31*(2), 207. https://doi.org/10.32585/jp.v31i2.2654

Permana, B. S., Hazizah, L. A., & Herlambang, Y. T. (2024). Teknologi pendidikan: Efektivitas penggunaan media pembelajaran berbasis teknologi di era digitalisasi. khatulistiwa: *Jurnal Pendidikan dan Sosial Humaniora, 4*(1), 19–28. https://doi.org/10.55606/khatulistiwa.v4i1.2702

Purnadewi, G. A. A., & Widana, I. W. (2023). Improving student's science numeration capability through the implementation of PBL model based on local wisdom. *Indonesian Journal of Educational Development (IJED), 4*(3), 307-317. https://doi.org/10.59672/ijed.v4i3.3252

Purwati, L. M. (2021). Media pembelajaran digital interaktif berbasis adobe flash pada masa pandemi di sekolah dasar. *Autentik : Jurnal Pengembangan Pendidikan Dasar, 5*(2), 152–158. https://doi.org/10.36379/autentik.v5i2.133

Rosmana, P. S., Iskandar, S., Rahma, A. R., Maria, S., Supriatna, S., & Wahyuningtyas, T. (2024). Efektivitas penggunaan media pembelajaran digital pada hasil belajar siswa kelas 5 SDN 6 Nagrikaler. *Jurnal Sinektik, 6*(1), 10–17. https://doi.org/10.33061/js.v6i1.8205

Sadiman, A. S., Rahardjo, Haryono, A., & Rahardjito. (2011). *Media pendidikan*. Rajawali Pers.

Setiawan, T. H., & Aden. (2020). Efektifitas penerapan blended learning dalam upaya meningkatkan kemampuan akademik mahasiswa melalui jejaring schoology di masa pandemi covid-19. *Jurnal Pembelajaran Matematika Inovatif (JPMI), 3*(5), 493–506. https://doi.org/10.22460/jpmi.v3i5.493-506

Solikah, H. (2020). Pengaruh penggunaan media pembelajaran interaktif quizizz terhadap motivasi dan hasil belajar siswa pada materi teks persuasif kelas VIII di SMPN 5 Sidoarjo Tahun Pelajaran 2019 / 2020. *Bapala: Jurnal Mahasiswa UNESA, 7*(3), 1–8. https://jurnalmahasiswa.unesa.ac.id/index.php/bapala/article/view/34508

Suhardita, K., Widana, I. W., Degeng, I. N. S., Muslihati, M., & Indreswari, H. (2024). Sharing behavior in the context of altruism as a form of strategy for building empathy and solidarity. *Indonesian Journal of Educational Development (IJED)*, *5*(3), 316-324. https://doi.org/10.59672/ijed.v5i3.4145

Sukendra, I. K., Widana, I. W., Juwana, D. P. (2023). Senior high school mathematics e-module based on STEM. *Jurnal Pendidikan Indonesia, 12*(4), 647-657. https://doi.org/10.23887/jpiundiksha.v12i4.61042

Surentu, O. S., Sumilat, J. M., & Tarusu, D. T. (2023). Pengembangan media puzzle untuk meningkatkan minat belajar pkn siswa kelas III Sekolah Dasar. *Jurnal Review Pendidikan dan Pengajaran (JRPP), 6*(4), 959–963.

Tamama, N. (2020). *Implementasi media pembelajaran lagu islami dalam mengembangkan nilai agama dan moral anak usia dini di RA Muslimat NU Islahussalafiyah Getassrabi Gebog Kudus Tahun Pelajaran 2019/2020*. IAIN Kudus.