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Development of Interactive Media Using Articulate Storyline Based on Banten Local to Improve IPAS Learning Outcomes of Elementary School Student

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A B S T R A C T

This study aims to examine the stages of development, effectiveness, and student responses to Banten local wisdom-based interactive picture story media to improve IPAS learning outcomes of fourth grade students of SDN Kebaharan 1. The method used is Research and Development (R&D) with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The research was motivated by student boredom in learning IPAS, lack of integration of local wisdom, and low learning outcomes. The results showed that the interactive media developed effectively improved learning outcomes, with an N-Gain value of 77% in the effective category. Student response to the media with a value of 79% is classified as good. Validation by material experts showed a feasibility percentage of 86.5%, and media expert validation of 79%, both of which were declared feasible. Thus, this interactive media is effective and feasible to use as a learning tool for IPAS in class IV SD, and it is possible to use for school in area with Banten Local Wisdom.

1. Introduction

21st century skills include life and career skills, learning and innovation skills, and skills in information, media, and technology (Tridiana & Rizal, 2020). In the learning process, these skills are known as the 4C concept, namely creativity, critical thinking, communication, and collaboration (Junedi et al., 2020). Teachers have an important role in helping students face the digital era by providing learning experiences that enhance their creativity and innovation.

In response to the challenges of the times, the Merdeka Curriculum is designed to be more adaptive and dynamic. This curriculum focuses on mastering essential material, strengthening character, and improving students' skills according to the demands of the modern era. One of the main aspects of the Merdeka Curriculum is

the integration of information and communication technology (ICT) in learning. This technology is not only a tool, but also a medium to create more interactive, interesting and innovative learning. Through ICT, teachers can develop various innovative learning media, such as interactive videos, simulations, and learning applications to strengthen understanding of difficult and abstract concepts.

The selection of appropriate learning media greatly affects the effectiveness of the teaching and learning process. Learning media can be in the form of movies, videos, pictures, modules, and various other forms that support the delivery of material. Teachers must have the freedom to choose and use learning resources and media that are in accordance with the objectives and teaching materials (Mustofa, 2021). The use of technology in the delivery of learning media is increasingly important, especially in subjects that are considered difficult, such as the wealth of Indonesian culture in the subject of Natural and Social Sciences (IPAS) for grade IV Elementary School (Nulhakim et al., 2023). With the development of science, technology, and art (IPTEKS), the teaching and learning process now utilizes various devices and tools, both conventional such as maps and blackboards, and modern such as computers, laptops, and smartphones connected to the internet.

In the context of implementing the Merdeka Curriculum, schools can integrate regional cultures that have been determined by the local government as part of local wisdom. (Fuad et al., 2020) state that local wisdom-based learning is important to instill a sense of love for national culture, especially in the midst of the swift influence of foreign cultures. One form of local wisdom that can be integrated in learning is batik, which is a cultural heritage from almost every region in Indonesia. Batik has various motifs that reflect the natural wealth, culture, and distinctive characteristics of each region.

In Serang City, there are six typical batik motifs that have been determined through the Decree of the Mayor of Serang City Number 430/Kep.187 Huk/2019 and regulated in the Regulation of the Mayor of Serang City Number 40 of 2019. The six motifs include the sawung pathok, almadad, seribu bedug, paduraksa, satay bandeng, and tower batik motifs. These motifs can be developed in articulate storyline-based learning media to improve student learning outcomes. Batik not only has high aesthetic value, but is also part of the national cultural identity that has been recognized by UNESCO as an Intangible Cultural Heritage (Trixie, 2020).

The implementation of local wisdom-based learning can cover cognitive, affective and psychomotor aspects that develop along with students' learning experience. However, in practice, there are still various obstacles in utilizing existing technology and learning media. Although schools have sufficient facilities, such as projectors and other digital devices, their utilization by teachers is still not optimal. Most teachers only rely on learning resources from textbooks and digital platforms such as YouTube, without developing more innovative and interactive media. As a result, learning tends to be monotonous and less interesting, so that students' active participation is limited.

To improve the effectiveness of learning, innovation is needed in the development of teaching materials that are in accordance with local wisdom. Currently, local wisdom-based learning materials, especially for grade IV on the topic "The Uniqueness of the Habits of the People Around Me," are still limited. Initial studies in several elementary schools in Serang City showed that the availability of teaching materials that support local wisdom-based learning is still minimal. Therefore, it is necessary to develop teaching materials that integrate elements of local wisdom, such as typical Serang batik motifs, into interactive learning media based on articulate storyline.

Articulate storyline is chosen as a learning media because it is able to present material more interestingly through a combination of text, images, sound, video, and animation. The use of articulate storyline based on local wisdom of Serang batik is expected to improve the learning outcomes of grade IV elementary school students. With learning media that is more interactive and contextual, students will more easily understand the material and have a more meaningful learning experience.

Based on the above discussion, it can be concluded that 21st century skills are very important in the world of education, especially in facing the digital era. These skills include aspects of critical thinking, creativity, communication, and collaboration. The Merdeka Curriculum is a solution in improving the quality of learning by emphasizing the use of technology and the integration of local culture in the teaching and learning process.

Local wisdom-based learning, such as the use of batik as teaching material, has great potential in enriching students' learning experience. Apart from being a cultural heritage, batik can also be used as an innovative and interesting learning media. However, there are still challenges in utilizing technology and developing learning media that suits the needs of students.

The use of articulate storyline based on Serang batik motif is one of the innovations that can support local wisdom-based learning. This media allows the presentation of material in a more interactive manner, thus improving student understanding and learning outcomes. Therefore, it is necessary to develop and implement more creative and adaptive learning media to support better.

2. Methodology

Banten local wisdom based articulate storyline learning by applying the ADDIE development model which consists of five main stages: Analysis, Design, Development, Implementation and Evaluation. This model was chosen due to its systematic structure and orientation towards improving the quality of learning. The ADDIE model is an approach that can facilitate learning designers, especially teachers, in creating quality learning designs. The application of ADDIE model in learning product development is done because this model offers a clear structure and is easy to understand. In accordance with the opinion of (Suryani et al, 2018),

one of the advantages of the ADDIE model is its systematic nature. Each stage in the ADDIE model is interrelated and depends on the results of improvements from the previous stage, so it is hoped that a better learning product can be obtained.

The ADDIE model (Analyse, Design, Development, Implementation, Evaluation) is a systematic framework for learning development. The process begins with the analysis stage to identify needs, learner characteristics, and learning context. Next, at the design stage, the learning media concept is designed including content structure, interactive elements, and evaluation instruments in the form of pretests and posttests. Validation was conducted by media experts and material experts to ensure the feasibility and effectiveness of the media design.

The development stage was conducted by utilising Articulate Storyline software to create interactive media. The media was tested gradually through small group (10 students) and large group (26 students) trials to obtain feedback on the effectiveness and applicability of the media in learning.

In the implementation stage, the media was applied directly in the classroom to increase learner participation and optimise learning outcomes, especially in the subject of Natural and Social Sciences (NSP). The final stage, evaluation, is conducted formatively and summatively. Formative evaluation includes revisions based on validator feedback and initial trial results, while summative evaluation is used to measure the impact of the media on learning outcomes through comparative analysis of pretest and posttest scores. This model is iterative, allowing for continuous revision at each stage to ensure the quality and effectiveness of the learning media. The stages of the ADDIE model can be seen in Figure 1 below.

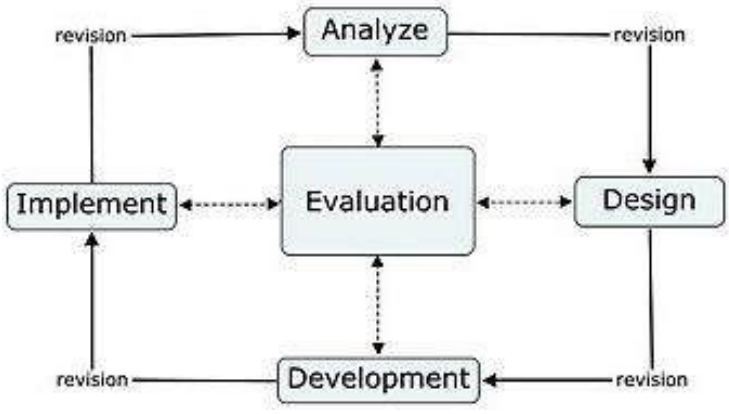
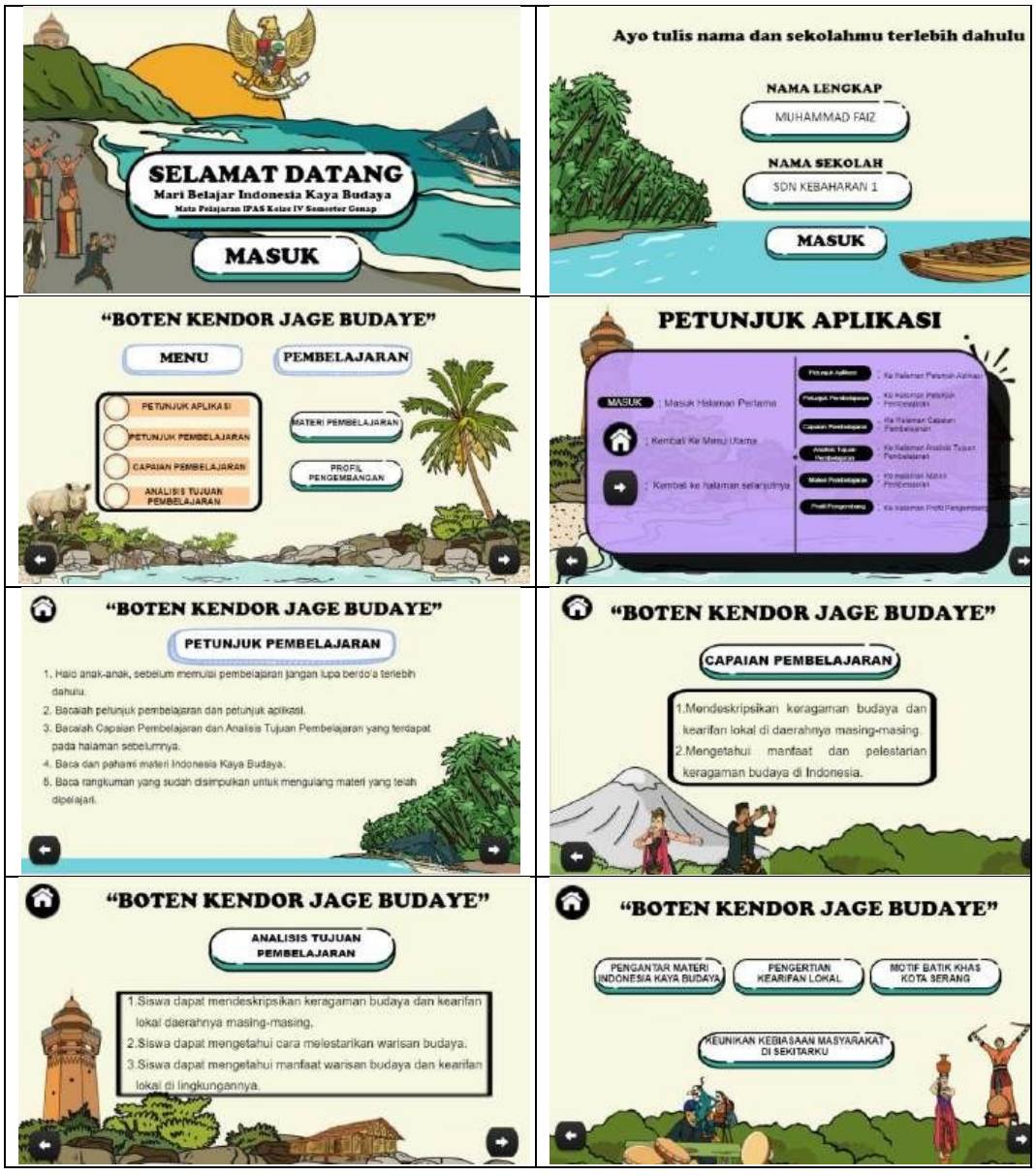


Figure 1. Stage of the ADDIE Model, Branch (2009)

3. Result and Discussion

The following are the results of the development of Articulate Storyline learning media compiled by researchers, starting from the initial design stage to produce a final product that is ready to be implemented to students. The initial design stage includes media development based on the results of the needs analysis that has been

done previously. After the initial design stage was completed, the developed media was validated by experts. Based on the input and assessment from the experts, revisions were made at the second design stage to improve the product in accordance with the suggestions given. After the revision process, the media is again evaluated by experts. If the media is declared feasible, the product is ready to be tested on students. The results of the Articulate Storyline media design based on Banten local wisdom are shown in Figure 2.



INDONESIA KAYA BUDAYA
Indonesia adalah negara yang kaya budaya, salah satunya adalah batik. Batik adalah seni menghias kain dengan pola indah menggunakan lilin dan pewarna. Seni ini sudah lama menjadi bagian penting dan kehidupan masyarakat Indonesia. Pada tahun 2009, UNESCO mengakui batik sebagai Warisan Budaya Dunia. (Amalia Fitri, 2021)
Batik memiliki banyak jenis, seperti batik tulis yang dibuat dengan alat bernama canting, batik cap yang menggunakan stempel, dan batik kombinasi. Setiap daerah di Indonesia memiliki motif batik khas yang menggambarkan nilai-nilai lokal, seperti motif menara dari Kota Serang yang melambangkan keberanian dan ketangguhan. Batik bukan hanya kain, tetapi juga mencerminkan identitas bangsa Indonesia. Dengan mencintai batik, kita menjaga warisan budaya dan menunjukkan kebanggaan terhadap kekayaan negeri kita. Melalui belajar tentang batik, diharapkan kita semakin memahami dan mencintai budaya Indonesia (Amalia Fitri, 2021).
KEARIFAN LOKAL
Kearifan lokal adalah kebiasaan dan nilai baik yang berasal dari tradisi masyarakat di suatu daerah. Ini adalah cara hidup yang diwariskan oleh nen moyang, seperti gotong royong yang mengajarkan kerja sama, atau maka menggunakan alas daun pisang untuk menjaga lingkungan. Kearifan loka penting dijaga karena menunjukkan identitas bangsa kita dan melestarika budaya Indonesia (Mulyani, 2020).
KEUNIKAN KEBIASAAN MASYARAKAT DI SEKITARKU
Keunikan masyarakat di sekitarku adalah hal-hal yang membuat masyarakat di tempat kita tinggal berbeda dari yang lain. Ini bisa terlihat dari bahasa, makanan khas, pakaian tradisional, hingga cara mereka menjaga alam. Misalnya, masyarakat Baduy luar atau dalam berjalan kaki tidak menggunakan sendal atau sepatu, sedangkan masyarakat pesisir laut yaitu mencari ikan atau melaut. Dengan mengenal keunikan ini, kita bisa lebih menghargai perbedaan dan menjaga kekayaan budaya bersama (Putri et al, 2023).
MOTIF BATIK KHAS KOTA SERANG
Batik adalah kain tradisional Indonesia yang dihiasi dengan pola-pola tertentu. Pola ini dibuat menggunakan lilin cair dan pewarna khusus. Batik memiliki makna budaya yang dalam, menggambarkan kekayaan alam dan tradisi dari daerah tertentu. Di Kota Serang, Banten, ada beberapa motif batik yang unik dan khas. Peraturan Walikota Serang Nomor 40 Tahun 2019 Pemanfaatan Motif Batik Khas Daerah, 2019. Dengan belajar tentang batik khas Kota Serang, kita turut menjaga dan memperkenalkan budaya tersebut kepada orang lain. Mari kita bangga dan melestarikan batik agar tetap dikenal oleh generasi berikutnya.
Motif Batik Sawung Pathok
Motif Batik Padhuraksa
Motif Batik Almadad
Motif Batik Sate Bandeng
Motif Batik Seribu Bedug
Motif Batik Menara
MOTIF BATIK ALMADAD
Motif ini terinspirasi dari ornamen masjid dan elemen religi. Motif ini menggambarkan kemegahan masjid dan kekuatan iman masyarakat Kota Serang. Warna hijau dan emas sering digunakan untuk memberikan kesan keindahan dan kesakralan. (Peraturan Walikota Serang Nomor 40 Tahun 2019 Pemanfaatan Motif Batik Khas Daerah, 2019)
MOTIF BATIK SERIBU BEDUG
Motif ini menjadi ciri khas lainnya dari Kota Serang. Pola ini terinspirasi dari alat musik bedug yang sering digunakan dalam tradisi Islami, terutama saat bulan Ramadan. Motif ini melambangkan kebersamaan dan tradisi keagamaan yang kuat. Warna-warna seperti cokelat dan hitam dengan aksen putih mendominasi motif ini. (Peraturan Walikota Serang Nomor 40 Tahun 2019 Pemanfaatan Motif Batik Khas Daerah, 2019)
MOTIF BATIK SAWUNG PATHOK
Motif ini menggambarkan ayam jantan yang menjadi simbol keberanian, semangat, dan kebersamaan. Biasanya, warna yang digunakan pada motif ini adalah warna cerah, seperti merah, kuning, dan cokelat, yang mencerminkan kekuatan dan kecerlaan. (Peraturan Walikota Serang Nomor 40 Tahun 2019 Pemanfaatan Motif Batik Khas Daerah, 2019)
MOTIF BATIK PADHURAKSA
Motif ini menggambarkan bentuk pintu gerbang tradisional yang sering ditemukan di Kota Serang. Motif ini melambangkan keterbukaan, penyambutan, dan kehidahan arsitektur tradisional. Warna-warna seperti cokelat dan kuning keemasan membuat motif ini tampak elegan.(Peraturan Walikota Serang Nomor 40 Tahun 2019 Pemanfaatan Motif Batik Khas Daerah, 2019).
MOTIF BATIK SATE BANDENG
Motif ini mencerminkan makanan khas Kota Serang, yaitu ikan bandeng yang diolah menjadi sate. Motif ini mencerminkan kelezatan kuliner lokal yang terkenal hingga ke luar daerah. Warna-warna cerah, seperti biru muda dan hijau, sering digunakan untuk memperlegas kesegaran ikan sebagai inspirasi utama. (Peraturan Walikota Serang Nomor 40 Tahun 2019 Pemanfaatan Motif Batik Khas Daerah, 2019)
MOTIF BATIK MENARA
Motif ini menampilkan bentuk menara masjid yang menjulang tinggi. Motif ini melambangkan keagungan dan menjadi simbol pusat ibadah masyarakat Kota Serang. Biasanya, warna putih dan hijau mendominasi motif ini, mencerminkan kesucian dan kesejukan. (Peraturan Walikota Serang Nomor 40 Tahun 2019 Pemanfaatan Motif Batik Khas Daerah, 2019)

Figure 2. Articulate Storyline Design Result of Banten Local Wisdom

The final design of the storyline on the Banten local wisdom-based Articulate Storyline media has been finalised after going through a series of revision processes, both based on input from experts and responses from learners. The developed product is designed to support interactive and contextual learning, and can be accessed through the following link https://mfaiz1234.itch.io/keunikan-kebiasaan-masyarakat-di-sekitarku-ipas-kelas-4-sd. The implementation of the media was carried out by involving grade IV primary school students who use mobile phone devices independently to access learning materials. Students' enthusiasm in using this media is reflected in their active participation during the learning process, which also supports the effectiveness of using Articulate Storyline as an innovative and accessible digital-based learning tool. The following is documentation of researchers with students after conducting learning activities using articulate storyline media in figure 3 below.

Figure 3. Join Documentation with Grade 4 Elementary School Students

This research aims to develop interactive learning media based on Articulate Storyline that integrates Banten local wisdom to improve student learning outcomes in Natural and Social Sciences (IPAS) subjects. The main problem behind this research is the low participation of students in learning due to the lack of use of interactive and innovative media. Findings from the needs analysis showed that students' learning motivation was still low, as learning was dominated by the use of textbooks and blackboards without the support of more varied media.

The validation results from the experts show that the articulate storyline media developed has an excellent level of feasibility. in the feasibility of articulate storyline interactive media is obtained from the value of the feasibility level of the material on articulate storyline-based interactive media obtained through the recapitulation of the results of the validation value by two material experts, which shows a percentage value of 86.5%. Based on this percentage, the material on articulate storyline-based interactive media is categorized as “Good” or “Appropriate” for use. Furthermore, the feasibility of this articulate storyline interactive media obtained from the recapitulation of three media validation experts shows 79% so that the value is included in the “Good / Feasible” category. Based on these results, it can be concluded that the media developed has met the eligibility criteria for content, presentation, and language in accordance with predetermined standards.

In addition to expert validation, the effectiveness of articulate storyline media was also tested through student trials. The trial results showed an increase in student learning outcomes as measured by the comparison of pretest and posttest scores. Before using this media, the average pretest score was 67.3, while after using this media, the average posttest score increased to 85.4. This increase shows that articulate storyline media is effective in improving students' understanding of the material taught.

The results of this study are in line with the theory which states that the use of interactive media in learning contributes to increasing students' motivation and understanding of the material. According to (Slamet et al, 2022) the use of multimedia in learning plays a role in improving the quality of the teaching and learning process by clarifying the delivery of messages. In addition, the findings of this study also support the concept of critical pedagogy which emphasizes that the integration of local wisdom in learning can strengthen students' attachment to culture and shape their identity as part of the Indonesian nation.

Overall, this study shows that Banten local wisdom-based articulate storyline media is not only feasible to use in learning, but also effective in improving student learning outcomes. Therefore, the implementation of this media in IPAS learning in primary schools is highly recommended to increase student engagement and maximise student learning outcomes. The small group trial was conducted on 10 grade IV students in one of the public primary schools in Serang city. This aims to determine students' responses to the developed Banten local

wisdom storyline. The following is a description of the results of the trials that have been conducted by researchers can be seen in table 1 below.

Table 1. Percentage of Small Group Trial Recapitulation Result

No.	Assessment Aspect	Percentage Score (%)
1	Desire and desire to succeed	78%
2	The existence of motivation and learning needs	86%
3	The existence of interesting activities in learning	99%
4	The existence of a conducive learning environment	77%
	Overall Average	**85%**
	Category	**Good**

The results of table 1 show the percentage of students' responses in the aspect of the existence of desire and desire for success obtained a percentage of 78%, the aspect of encouragement and learning needs of 86%, the aspect of interesting activities in learning of 99%, and in the aspect of a conducive learning environment of 77%. These four aspects have an overall average of 85% in the Good category. These results show a positive response from students to articulate storyline media products based on Banten local wisdom.

Based on each category of feasibility test assessment from experts and the response questionnaire of students in the resulting small group trial, it can be said that the articulate storyline media of Banten local wisdom can be used as a supporting medium in the IPAS learning process, especially on the material of the Uniqueness of Community Habits Around Me in chapter 6 Indonesia Rich in Culture so that it can improve the learning outcomes of grade IV students. This is supported by research by (Lisa et al, 2024) saying that articulate storyline media can be used as learning media in elementary schools.

The average N-Gain test of interactive media using articulate storyline based on Banten local wisdom to improve the learning outcomes of IPAS elementary school students obtained an average percentage of 77% including the criteria “effective”. This is in line with the table of criteria for determining effectiveness on N-Gain according to (Sukarelawa et al, 2024) where the N-Gain value> 76% is included in the “effective” criteria. Thus it can be said that interactive media products using articulate storyline based on Banten local wisdom to improve IPAS learning outcomes in learning the unique habits of the people in my neighborhood chapter 6 Indonesia is rich in culture in class IV.

4. Conclusion

Based on the results of the research and analysis conducted, the development of interactive media with articulate storylines based on Banten's local wisdom proved effective in improving IPAS learning outcomes in elementary school students. The process of developing this media follows the five stages in the ADDIE model,

namely Analysis, Design, Development, Implementation, and Evaluation. The resulting media was designed using the Canva Pro application and Articulate Storyline software, which has a similar appearance to online-based PowerPoint, thus supporting a more attractive and interactive learning design. Based on the results and discussion of research on interactive media development using articulate storyline based on Banten local wisdom to improve the learning outcomes of IPAS elementary school students, it can be concluded that. Students' response to the use of interactive media articulate storyline get an average value of 79% with the category "Good".

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References

Branch, R. B. (2009). *Instructional Design:* The ADDIE Approach.

Fuad, M., Anwar, E, & Ulul, A.M. (2020). The Use of Pepaccur Local Wisdom for Indonesian Literary Teaching Materials. *JPI (Jurnal Pendidikan Indonesia)* 9(2):213. doi:10.23887/jpiundiksha.v9i2.22779.

Junedi, B., Mahuda, I., & Kusuma, J. W. (2020). Optimalisasi keterampilan pembelajaran abad 21 dalam proses pembelajaran pada Guru MTs Massaratul Mut'allimin Banten. *Transformasi: Jurnal Pengabdian Masyarakat, 16(1),* 63–72. https://doi.org/10.20414/transformasi.v16i1.1963

Kurniawati, L., Mulbasari, A. S., & Nurlaela, N. (2024). Pengembangan Media Pembelajaran Interaktif Berbasis Articulate Storyline Pada Materi Manusia dan Lingkungan kelas V SD. *Jurnal DIDIKA: Wahana Ilmiah Pendidikan Dasar, 10(1),* 125–134. https://doi.org/10.29408/didika.v10i1.26172

Mustofa, A. H. (2021). *Media Pembelajaran.* Jakarta: Yayasan Kita Menulis.

Nulhakim, L., Hendracipta, N. M & Agustini , S, M,. (2023). Perbedaan Kemampuan Berpikir Kritis Siswa Melalui Penerapan Model Inkuiri Terbimbing di Sekolah Dasar. *Jurnal Pendidikan Sekolah Dasar, 3(2),* 215. https://doi.org/10.30870/jpsd.v3i2.2141.

Slamet A., W, Nursalam & Muhajir. (2022) Pengembangan Media Pembelajaran Interaktif Pada Pembelajaran IPS Kelas IV Tema 9 Berbasis Aplikasi Articulate Storyline. *Jurnal Ilmiah Mandala Education (JIME), 8(3)* http://dx.doi.org/10.58258/jime.v8i3.3643

Sukarelawan, M. I., Indratno, T. K., & Ayu, S. M. (2024). N-Gain vs Stacking Analisis Perubahan Abilitas Peserta Didik dalam Desain One Group Pretest-Posttest (1st ed.). Yogyakarta: Suryacahya.

Suryani, N., Setiawan, A., & Putria, A. (2018). *Media Pembelajaran Inovatif dan Pengembangannya.* PT. Remaja Rosdakarya.

Tridiana, R., & Rizal, F. (2020). Keterampilan Guru Abad 21 Di Sekolah Menengah Kejuruan (SMK). *Jurnal Ilmiah Pendidikan Dan Pembelajaran, 4(2),* 221– 231. https://doi.org/https://doi.org/10.23887/jipp.v4i2.25268

Trixie, A. A. (2020), Filosofi Motif Batik Sebagai Identitas Bangsa Indonesia. *Folio, Vol 1 No 1, pp.* 1–9. https://journal.uc.ac.id/index.php/FOLIO/article/view/1380.

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