PIONIR Jurnal Pendidikan
P-ISSN 2339-2495
E-ISSN 2549-6611

PIONIR: JURNAL PENDIDIKAN
VOLUME 15 No 1 2026
P-ISSN 2339-2495/E-ISSN 2549-6611

DEVELOPMENT OF TAT TWAM ASI INTERACTIVE FLIPBOOK FOR FIFTH GRADE SCIENCE UNDERSTANDING

Ni Putu Ayu Winaastari *

*Institut Agama Hindu Negeri Mpu Kuturan, Indonesia

ayuwinaastari01@gmail.com

Ni Nyoman Lisna Handayani

Institut Agama Hindu Negeri Mpu Kuturan, Indonesia

lisnahandayani201@gmail.com

I Made Ari Winangun

Institut Agama Hindu Negeri Mpu Kuturan, Indonesia

ari.winangun68@gmail.com

Received 2 March 2026, Accepted 27 April 2026, Published 30 April 2026

Abstract

Students' understanding of Natural and Social Sciences (IPAS) concepts in elementary schools is still relatively low, partly due to the limited use of interactive and contextual learning media in the classroom. In addition, the integration of local wisdom values in science learning remains minimal, even though these values can strengthen students' character and contextual understanding. Therefore, this study aims to develop interactive Flipbook learning materials that integrate the local wisdom value of Tat Twam Asi. The study also evaluates the validity, practicality, and effectiveness of the developed media in improving fifth-grade students' conceptual understanding of IPAS. Using the ADDIE model—which comprises the phases of analysis, design, development, implementation, and evaluation—development research (R&D) is the methodology employed. To examine the effectiveness of the developed media, a pre-experimental design using a one-group pretest–posttest approach was employed. This design was used to measure students' conceptual understanding before and after using the interactive flipbook. The research subjects consisted of media experts, material experts, language experts, fifth-grade teachers, and fifth-grade students from Elementary School Cluster 5 in

Busungbiu District. This research is important because it evaluates the potential of integrating local wisdom values, such as Tat Twam Asi, into digital learning media to improve students' conceptual understanding of science. Tests, observations, and questionnaires were employed as data gathering methods. With an average Aiken's V value above 0.88, the study's findings demonstrated the interactive Flipbook media's extremely high level of validity. Teachers and students responded very well to the practicality exam, with a proportion exceeding 90%. With an N-Gain value of 0.54, which falls into the medium-to-high range, the effectiveness test demonstrated an improvement in students' comprehension of IPAS principles. As a result, Tat Twam Asi's interactive Flipbook medium is deemed legitimate, useful, and efficient for use in primary school scientific instruction.

Keywords: Interactive Flipbook, Tat Twam Asi, Science, Conceptual Understanding, Elementary School

Abstrak

Pemahaman siswa terhadap konsep Ilmu Pengetahuan Alam dan Sosial (IPAS) di sekolah dasar masih relatif rendah, sebagian karena terbatasnya penggunaan media pembelajaran interaktif dan kontekstual di kelas. Selain itu, integrasi nilai-nilai kearifan lokal dalam pembelajaran sains masih minim, padahal nilai-nilai tersebut dapat memperkuat karakter dan pemahaman kontekstual siswa. Oleh karena itu, penelitian ini bertujuan untuk mengembangkan bahan pembelajaran Flipbook interaktif yang mengintegrasikan nilai kearifan lokal Tat Twam Asi. Penelitian ini juga mengevaluasi validitas, kepraktisan, dan efektivitas media yang dikembangkan dalam meningkatkan pemahaman konseptual siswa kelas lima terhadap IPAS. Dengan menggunakan model ADDIE—yang terdiri dari fase analisis, desain, pengembangan, implementasi, dan evaluasi—penelitian pengembangan (R&D) merupakan metodologi yang digunakan. Untuk menguji efektivitas media yang dikembangkan, digunakan desain pra-eksperimental dengan pendekatan pretest–posttest satu kelompok. Desain ini digunakan untuk mengukur pemahaman konseptual siswa sebelum dan sesudah menggunakan flipbook interaktif. Subjek penelitian terdiri dari pakar media, pakar materi, pakar bahasa, guru kelas lima, dan siswa kelas lima dari Klaster Sekolah Dasar 5 di Kecamatan Busungbiu. Penelitian ini penting karena mengevaluasi potensi pengintegrasian nilai-nilai kearifan lokal, seperti Tat Twam Asi, ke dalam media pembelajaran digital untuk meningkatkan pemahaman konseptual siswa tentang sains. Tes, observasi, dan kuesioner digunakan sebagai metode pengumpulan data. Dengan nilai rata-rata Aiken's V di atas 0,88, temuan penelitian menunjukkan tingkat validitas yang sangat tinggi dari media Flipbook interaktif. Guru dan siswa memberikan respons yang sangat baik pada ujian kepraktisan, dengan proporsi melebihi 90%. Dengan nilai N-Gain sebesar 0,54, yang termasuk dalam kisaran sedang hingga tinggi, uji efektivitas menunjukkan peningkatan pemahaman siswa terhadap prinsip-prinsip IPAS. Hasilnya, media Flipbook interaktif Tat Twam Asi dianggap sah, bermanfaat, dan efisien untuk digunakan dalam pengajaran sains di sekolah dasar.

Kata kunci: Buku Flipbook Interaktif, Tat Twam Asi, Sains, Pemahaman Konseptual, Sekolah Dasar

INTRODUCTION

During the Independent Curriculum era, primary school instruction aims to help students develop not only academic competencies but also strong moral and social character (D. Lestari, Kusumawicitra, Apriyani, & Rustini, 2024; Rahman, Sundawa, & Ratmaningsih, 2025). Natural and Social Sciences (IPAS) subjects play an important role because they are designed to foster critical, creative, and scientific thinking skills while also encouraging contextual understanding of natural and social phenomena (Agustina & Efendi, 2025; Surul & Septiliana, 2023). n addition to supporting students' cognitive development, IPAS learning is expected to cultivate students' awareness and responsibility toward society and the environment (Erari & Amsad, 2025). Previous studies have emphasized that science education is essential in preparing students for the scientific and technological developments of the twenty-first century, therefore learning strategies must be adapted to the developmental characteristics of elementary school students (Dilekçi & Karatay, 2023; Purnawati & Yakin, 2025).

However, previous studies have mostly focused on general digital learning media and have not specifically developed interactive flipbook media integrated with local wisdom values such as Tat Twam Asi. In addition, the integration of digital learning media with local cultural values in IPAS learning is still limited, particularly in elementary school contexts. This gap highlights the need to develop innovative learning media that combine digital technology with local wisdom to support both students' conceptual understanding and character development.

Nonetheless, there are still a lot of problems with primary school scientific instruction. Science education is still dominated by conventional media, such as textbooks and student worksheets, according to early observations of fifth-grade pupils at Elementary School Cluster 5, Busungbiu District. Students' willingness to learn and their capacity to connect scientific concepts to ethical standards and real-world scenarios are both impacted by this condition. The learning completeness percentage, which varies between 37.5% and 62.5% and remains below the Learning Objective Achievement Criteria (KKTP), indicates that pupils' understanding of science topics is inadequate, according to learning evaluation data.

Students' preparedness for the Computer-Based National Assessment (ANBK), which prioritizes literacy, numeracy, and character skills, is also impacted by their poor comprehension of these ideas (Haryadi & Masjudin, 2025; Mahatika & Trisoni, 2022). The quality of education will fall short of national standards if this problem is not immediately fixed, especially when it comes to scientific literacy and student reasoning (Espinosa et al., 2023). Developmental psychology research indicates that if adolescents do not get relevant learning stimulation throughout their primary school years, their cognitive development may not achieve its full potential (Albay & Pradana, 2025). Therefore, there is a need for educational innovations that can provide contextual, engaging, and meaningful learning experiences.

One relevant alternative cure is the development of interactive digital learning resources. Students can envision abstract concepts, increase their level of engagement, and study independently with the use of digital media (Azmia, Mansura, & Utama, 2024; Wong & Hughes, 2023). According to the criteria of the Independent Curriculum, science and scientific education must integrate local wisdom values to enhance students' character (Rasidi

&

Istiningsih, 2025; Wuwur, Kuswandi, & Awaliyah, 2023). In the Balinese cultural context, the concept of Tat Twam Asi, which means "I am you and you are me," incorporates teachings on empathy, tolerance, and social respect (Purnamawati, 2022; Suwindia, Wati, Suari, Dewi, & Kurniawan, 2025). This value is relevant to include in science because it helps enhance students' understanding of concepts like the interconnectedness of all living things, ecosystems, and environmental protection.

Incorporating Tat Twam Asi principles into scientific instruction not only improves character but also provides a moral basis for developing deeper intellectual knowledge. The comprehensive objectives of scientific education are in line with Tat Twam Asi teachings, which place a strong emphasis on understanding how humans and the environment are interrelated (Brata, Sartika, & Saputra, 2024; Suranti & Pradmawati, 2025). Nevertheless, it is still uncommon to see systematic integration of these local knowledge values into the educational materials utilized in primary schools, particularly when it comes to interactive digital media.

The creation of interactive Flipbook media featuring Tat Twam Asi is seen as a pertinent and creative solution in light of these issues. Science and natural science content can be presented in interactive Flipbooks using a mix of text, photos, audio, video, and interactive tests, making learning more engaging and simpler for students. It is anticipated that this medium will enhance students' conceptual comprehension and promote empathy, social awareness, and environmental awareness from a young age by incorporating Tat Twam Asi ideals into scientific and natural science instructional materials. Therefore, in an attempt to enhance the academic and characterological comprehension of scientific subjects among fifth grade students at SD Gugus 5, Busungbiu District, this study centers on the creation of interactive Flipbooks featuring Tat Twam Asi.

METHODS

This study employed a research and development (R&D) approach aimed at developing an interactive flipbook integrating the local wisdom value of Tat Twam Asi and evaluating its validity, practicality, and effectiveness in improving elementary school students' understanding of Natural and Social Sciences (IPAS) concepts. The development process followed the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation (Siregar & Rhamayanti, 2025; Spatioti, Kazanidis, & Pange, 2022). To examine the effectiveness of the developed media, this study applied a pre-experimental design using a one-group pretest–posttest approach.

The research was conducted during the even semester of the 2024–2025 academic year in several elementary schools located in Cluster 5 of Busungbiu District, Buleleng Regency, Bali Province. The research sites were selected based on curriculum similarity, comparable school characteristics, and preliminary findings indicating that fifth-grade students had relatively low understanding of science concepts.

The research subjects consisted of media experts, material experts, and language experts who were involved in validating the developed product. In addition, fifth-grade teachers participated in evaluating the practicality of the media, while fifth-grade students from Elementary School Cluster 5 in Busungbiu District were involved in the product trial to measure its effectiveness. The student participants were selected using purposive sampling by considering the suitability of the learning materials, teacher readiness, and the homogeneity

of class characteristics.

The development procedures followed the stages of the ADDIE model. The analysis stage involved examining the curriculum, identifying student characteristics, and analyzing learning problems and needs related to IPAS topics in grade V. In the design stage, the learning content and media structure were planned, including the integration of Tat Twam Asi values into the IPAS materials. The development stage involved producing the interactive flipbook and conducting expert validation to ensure the quality of the media. After revisions based on expert feedback, the media was implemented in the classroom during IPAS learning activities. The final stage, evaluation, aimed to assess the overall effectiveness, practicality, and validity of the developed media.

Both quantitative and qualitative data were collected in this study. Quantitative data were obtained from expert validation results, practicality questionnaires, and students' pretest and posttest scores measuring conceptual understanding of science topics. Qualitative data were collected from suggestions and comments provided by experts and teachers regarding the developed media.

The research instruments included expert validation sheets for media, material, and language aspects, practicality questionnaires for teachers and students, and tests consisting of multiple-choice and short-answer questions to measure students' conceptual understanding. Data collection techniques included surveys, tests, and classroom observations.

The collected data were analyzed using descriptive and inferential techniques. Media validity was analyzed using the Aiken's V coefficient based on expert assessments. The practicality of the media was determined using percentage analysis of teacher and student responses. Meanwhile, the effectiveness of the media was analyzed by comparing pretest and posttest scores, and learning improvement was calculated using the N-Gain score to determine the level of students' conceptual understanding improvement.

RESULTS AND DISCUSSION

Results of Interactive Flipbook Media Development

The interactive flipbook learning media product containing Tat Twam Asi values created using the ADDIE approach is the result of this research. This product was created according to student characteristics and Independent Curriculum Learning Outcomes after an investigation into the needs of fifth-grade science learning in Elementary School Cluster 5 of Busungbiu District. This interactive flipbook includes a cover page, user guide, science concept map, integrated learning materials with Tat Twam Asi values, contextual local cultural visuals, educational films, interactive quizzes, value reflections, and final assessments. With attractive graphics and simple navigation, this media is designed to help students learn independently or under supervision.

Validity Test Results and Discussion

Prior to the Interactive Flipbook media's use in instruction, a validity test was carried out to ascertain its viability (Rahayu, Sadikin, & Hamidah, 2024). Experts in media, materials, and language performed validation using a Likert scale evaluation tool with a range of 1 to 4. Aiken's V coefficient was used to assess the validation data.

Table 1. Media Expert Validation Results

No.	Assessment Aspect	Aiken's V Score
1.	Visual Appearance	0,89
2.	Media Navigation	0,86
3.	Interactivity	0,90
	Average	0,88

According to Table 1, the Interactive Flipbook media falls into the extremely valid group with an average Aiken's V value of 0.88. The visually appealing display and intuitive navigation facilitate pupils' autonomous use of the media. The medium is deemed appropriate for usage in IPAS as high interactivity increases student participation in the learning process.

Table 2. Results of Expert Validation by Material

No.	Assessment Aspect	Aiken's V Score
1.	Material Conformity with Science and Science Core Competence	0,91
2.	Conceptual Accuracy	0,89
3.	Integration of Tat Twam Asi Values	0,93
	Average	0,91

According to Table 2, the extremely valid group is occupied by the average material validity score of 0.91. This shows that the IPAS content is in line with the learning objectives and contextually incorporates Tat Twam Asi ideals. Students benefit from this integration by learning how scientific and natural science ideas relate to their social and environmental lives.

Table 3. Language Expert Validation Results

No.	Assessment Aspect	Aiken's V Score
1.	Language Clarity	0,87
2.	Suitability for Elementary School Students	0,89
3.	Readability	0,88
	Average	0,88

The language used in the Interactive Flipbook media is categorized as extremely valid, according to Table 3's language validation results. Students may grasp the content more easily thanks to the straightforward and approachable language, which promotes the best possible comprehension of scientific and natural science ideas.

The high validity score indicates that the developed interactive flipbook meets the criteria for appropriate instructional media in terms of content accuracy, visual design, and

language clarity. This suggests that the integration of IPAS concepts with the local wisdom value of Tat Twam Asi can produce learning materials that are not only scientifically accurate but also culturally meaningful for elementary school students. The use of clear navigation, attractive visuals, and structured content supports students in accessing learning materials independently. Previous studies have also shown that well-designed digital learning media can improve the quality of instruction when the materials are aligned with students' characteristics and contextual learning needs (Iliska & Gudoniene, 2025; Kamila, Annas, & Oktavia, 2024).

Practicality Test Results and Discussion

To assess the Interactive Flipbook media's use in scientific education, a practicality test was carried out. Following the use of the media, teacher and student response questionnaires were used to collect data.

Table 4. Practicality Test Results by Teachers

No.	Assessment Aspect	Percentage
1.	Ease of Use	92%
2.	Appropriateness to Material	90%
3.	Clarity of Material Presentation	93%
	Average	91,67%

Table 4 classifies the Interactive Flipbook medium as extremely useful. Due to its ease of use and suitability for the characteristics of the students, teachers viewed this medium as beneficial to the learning process.

Table 5. Practicality Test Results by Students

No.	Assessment Aspects	Percentage
1.	Media Appeal	94%
2.	Ease of Understanding	91%
3.	Increased Motivation	95%
	Average	93,33%

Students' reactions to the media were overwhelmingly favorable, according to Table 5's statistics. Students were more engaged and motivated to learn science when they were exposed to interactive and contextual media.

The high practicality scores indicate that the interactive flipbook is easy to use and well accepted by both teachers and students. The multimedia features embedded in the flipbook, such as images, videos, and interactive quizzes, allow students to actively engage with the learning content. This interactivity can enhance students' learning motivation and participation during classroom activities. In addition, the digital format of the flipbook supports teachers in delivering learning materials more efficiently and attractively (A. D.

Lestari, Wicaksono, Fadhillah, Novitasari, & Santi, 2025). These findings support previous research which suggests that interactive multimedia learning resources can create more engaging learning environments and facilitate active learning among elementary school students (Jamaludin, Putra, Sulartopo, & Hartono, 2024; Sayuti et al., 2025).

Effectiveness Test Results and Discussion

To find out how employing interactive flipbooks affected fifth-grade students' comprehension of IPAS subjects, an effectiveness test was carried out.

Table 6. Pretest and Posttest Results for Understanding Science

Concepts	Test Average Score
Pretest	62,40
Posttest	82,75

The improvement in students' posttest scores indicates that the use of interactive flipbook media contributes positively to students' conceptual understanding of IPAS topics. This improvement can be explained by the visual and interactive features of the flipbook, which help students understand abstract scientific concepts through images, videos, and interactive exercises. In addition, the integration of Tat Twam Asi values provides a contextual dimension that encourages students to relate scientific concepts to real-life social and environmental contexts. These findings support previous studies indicating that technology-supported learning environments can facilitate deeper conceptual understanding by combining visual representation, interactivity, and contextual learning experiences. Overall, the incorporation of Tat Twam Asi values, which gives learning greater meaning and context for children, has an impact on this improvement in conceptual comprehension in addition to the media's visual elements and interactive elements.

This result is consistent with earlier studies that demonstrate how interactive digital learning materials may enhance students' conceptual comprehension by presenting information in a visual, contextual, and easily comprehensible manner (Hidayat et al., 2025; Sari, Kasmini, Dianatami, & Mardiana, 2025). Furthermore, the incorporation of Tat Twam Asi principles adds a moral and contextual component to education, enabling students to apply concepts to real-world situations in addition to their cognitive understanding.

Despite the positive findings, this study has several limitations that should be considered. First, the implementation of the interactive flipbook was conducted only in a limited number of elementary schools within Cluster 5 of Busungbiu District, which may restrict the generalizability of the findings to broader educational contexts. Second, the sample involved only fifth-grade students, so the effectiveness of the developed media for other grade levels or subjects has not yet been examined. In addition, the implementation period was relatively short, focusing only on a specific IPAS topic, which may not fully capture the long-term impact of the media on students' conceptual understanding and character development. Therefore, future studies are recommended to involve larger and more diverse samples and to examine the long-term implementation of interactive flipbook media integrated with local wisdom values in different educational settings.

The improvement in students' learning outcomes indicates that the interactive flipbook contributes positively to students' conceptual understanding of IPAS topics. This

improvement may occur because the flipbook presents learning materials through visual representations, interactive activities, and contextual explanations that help students understand abstract scientific concepts more concretely. Interactive digital media can facilitate deeper learning because students are able to explore learning materials actively rather than passively receiving information. Furthermore, the integration of Tat Twam Asi values adds a contextual dimension that encourages students to connect scientific concepts with social and environmental awareness. This supports previous research indicating that contextual and technology-supported learning environments can enhance students' conceptual understanding and engagement in science learning.

Despite the positive findings, this study has several limitations. The implementation of the interactive flipbook was conducted only in elementary schools within Cluster 5 of Busungbiu District, which limits the generalizability of the findings to broader educational contexts. In addition, the sample involved only fifth-grade students, and the implementation period was relatively short. Future research is therefore recommended to involve larger and more diverse samples and to investigate the long-term impact of integrating local wisdom values into digital learning media.

CONCLUSION

This study demonstrates that the development of an interactive flipbook integrating Tat Twam Asi values can support meaningful learning in elementary school IPAS subjects. The integration of digital learning media with local wisdom allows scientific concepts to be presented in a contextual and culturally relevant way, which can enhance students' conceptual understanding as well as their social awareness. From a curricular perspective, the findings indicate that integrating local wisdom values into digital learning resources can support the implementation of the Independent Curriculum, which emphasizes contextual learning and character development. The use of culturally embedded digital media can therefore become an alternative strategy for enriching IPAS learning materials at the elementary school level. For teachers, the developed flipbook provides an example of how interactive digital media can be used to create more engaging and student-centered learning environments. The combination of multimedia elements, contextual examples, and interactive activities can help teachers present complex scientific concepts in ways that are easier for students to understand.

Theoretically, this study contributes to the growing body of research on technology-enhanced learning by demonstrating that integrating digital media with local cultural values can support both cognitive learning outcomes and character education. This approach highlights the potential of combining educational technology with cultural context to create more meaningful learning experiences. Nevertheless, this study was conducted within a limited sample and implementation context. Future research is recommended to involve a larger and more diverse population and to explore the long-term impact of integrating local wisdom values into digital learning media across different subjects and educational levels.

REFERENCES

Agustina, L., & Efendi, R. (2025). Penerapan Model Pembelajaran Problem Solving Berbantuan Digital Mind Mapping untuk Meningkatkan Hasil Belajar dan Keterampilan Berpikir Kritis dalam IPAS: Studi Kasus di Kelas V SD Negeri 004 Tambusai Utara. *Journal of Education Research*, *6*(4), 874–884. https://doi.org/10.37985/jer.v6i4.2844

Albay, I. A. M., & Pradana, D. R. F. (2025). Pengaruh Perkembangan Kognitif Anak Terhadap Pembelajaran Di Sekolah Dasar. *JIRS*, *2*(1), 1–13. https://doi.org/https://doi.org/10.61722/jirs.v2i1.3641

Azmia, M. N., Mansura, H., & Utama, A. H. (2024). Potensi Pemanfaatan Virtual Reality Sebagai Media Pembelajaran Di Era Digital. *Jurnal Dimensi Pendidikan Dan Pembelajaran*, *12*(1), 211–226. https://doi.org/https://doi.org/10.24269/dpp.v12i1.9746

Brata, I. B., Sartika, L. D., & Saputra, I. P. A. (2024). Membangun Karakter Profil Pelajar Pancasila Berbasis Kearifan Lokal dengan Perspektif Kebudayaan Bali. *Jurnal Penelitian Inovatif*, *4*(3), 829–838. https://doi.org/10.54082/jupin.338

Dilekçi, A., & Karatay, H. (2023). The Effects of The 21st Century Skills Curriculum On The Development of Students' Creative Thinking Skills. *Thinking Skills and Creativity*, *47*(101229). https://doi.org/10.1016/j.tsc.2022.101229

Erari, O., & Amsad, L. N. (2025). Analisis Pembelajaran Mendalam yang Terintegrasi Dengan Kearifan Lokal Lingkungan Pesisir Pada Materi IPAS di Kelas V SD Negeri Mambui Kabupaten Waropen. *Sinergi : Jurnal Ilmiah Multidisiplin*, *1*(2), 1943–1954. Retrieved from https://publikasi.ahlalkamal.com/index.php/sinergi/article/view/170/158

Espinosa, A. A., Gomez, A. C., Reyes, A. S., Macahilig, H. B., Cortez, L. A. S., & David, A. P. (2023). International large-scale assessment (ILSA): Implications for pre-service teacher education in the Philippines. *Issues in Educational Research*, *33*(2), 553–569.

Haryadi, H., & Masjudin, M. (2025). Analisis Kesiapan Kognitif dan Teknis Literasi Numerasi Siswa SD di Kabupaten Lombok Barat Berbasis ANBK. *Media Pendidikan Matematika*, *13*(1), 429–442. https://doi.org/10.33394/mpm.v13i1.15672

Hidayat, R., Apriani, I., Putri, L., Muarif, I., Dola, M. P., & Yuanda, M. (2025). Pengembangan Media Pembelajaran PPT Interaktif untuk Meningkatkan Pemahaman Siswa dalam Mata Pelajaran PKn di Sekolah Dasar. *Jurnal Bintang Pendidikan Indonesia*, *3*(2), 365–374. https://doi.org/10.55606/jubpi.v3i2.3846

Iliska, D., & Gudoniene, D. (2025). Sustainable Technology-Enhanced Learning for Learners with Dyslexia. *Sustainability*, *17*(10), 1–24. https://doi.org/10.3390/su17104513

Jamaludin, H., Putra, T. W. A., Sulartopo, S., & Hartono, B. (2024). Perancangan Dan Implementasi Multimedia Interaktif Dengan Metode Exploratory Tutorial Mata Pelajaran Teknologi Informasi Dan Komunikasi. *Jurnal Teknologi Informasi Dan Komunikasi*, *15*(1), 201–214. https://doi.org/10.51903/jtikp.v15i1.887

Kamila, N., Annas, F., & Oktavia, S. (2024). Perancangan Media Pembelajaran Berbasis Multimedia untuk Meningkatkan Kualitas Pembelajaran di Sekolah Dasar. *Journal of Educational Management and Strategy*, *3*(01), 43–49. https://doi.org/10.57255/jemast.v3i01.586

Lestari, A. D., Wicaksono, Y. P., Fadhillah, U., Novitasari, W., & Santi, F. M. C. (2025). Pentingnya Pengembangan Media Berbasis Digital pada Pembelajaran Bahasa Indonesia. *Teacher in Educational Research*, *7*(1), 22–30. https://doi.org/10.33292/ter.v7i1.501

Lestari, D., Kusumawicitra, N., Apriyani, N., & Rustini, T. (2024). Shaping National Character in Early Grade Elementary School Students Through Social Sciences Learning in the Medeka Curriculum Era. *DIROSAT: Journal of Education, Social Sciences & Humanities*, *2*(4), 379–385. https://doi.org/10.58355/dirosat.v2i4.79

Mahatika, A., & Trisoni, R. (2022). The Effectiveness of ANBK Implementation in Raising the Educational Quality of Elementary School. *Idarah (Jurnal Pendidikan Dan Kependidikan)*, *6*(2), 173–184. https://doi.org/10.47766/idarah.v6i2.813

Purnamawati, M. S. P. (2022). Tatwamasi Approach a Popular Wisdom from Balinese Culture in Facing Global Challenges. *Proceedings of the International Symposium on Religious Literature and Heritage (ISLAGE 2021)*, 269–273. https://doi.org/10.2991/assehr.k.220206.034

Purnawati, A., & Yakin, N. (2025). Implementasi Kemampuan Literasi Sains dalam Pembelajaran IPA Terintegrasi di Sekolah Dasar. *Action Research Journal*, *2*(2), 107–120. https://doi.org/10.63987/arj.v2i2.204

Rachma, A., Iriani, T., & Handoyo, S. S. (2023). Penerapan Model ADDIE Dalam Pengembangan Media Pembelajaran Berbasis Video Simulasi Mengajar Keterampilan Memberikan Reinforcement. *Jurnal Pendidikan West Science*, *1*(08), 506–516. https://doi.org/10.58812/jpdws.v1i08.554

Rahayu, E., Sadikin, A., & Hamidah, A. (2024). Pengembangan E-Modul Interaktif Berbentuk Flipbook Pada Materi Sistem Ekskresi Untuk Kelas XI SMA. *Biodik: Jurnal Ilmiah Pendidikan Biologi*, *10*(2), 210–220. https://doi.org/10.22437/biodik.v10i2.35172

Rahman, R. N., Sundawa, D., & Ratmaningsih, N. (2025). Pengembangan Pendidikan Karakter dan Keterampilan Sosial Siswa Melalui Kegiatan Parents Day. *Didaktika: Jurnal Kependidikan*, *14*(1), 565–574.

Rasidi, R., & Istiningsih, G. (2025). Education Based on Local Wisdom: An Alternative Model for The Integration of Cultural Values in The School Curriculum in Indonesia. *BIS Education*, *1*, V1250271–V12502723. https://doi.org/10.31603/bised.175

Sari, S. M., Kasmini, L., Dianatami, V., & Mardiana, M. (2025). Pengembangan Media Pembelajaran Interaktif Sistem Pernapasan Manusia Untuk Meningkatkan Pemahaman Siswa Sekolah Dasar. *MUDABBIR Journal Research and Education Studies*, *5*(2), 2520–2528. https://doi.org/10.56832/mudabbir.v5i2.1591

Sayuti, A. S. L., Berliani, M. K., Lestari, S., Saputra, D. D., Amalia, H., Istiq'faroh, N., & Zahroh, U. A. (2025). Efektivitas Media Pembelajaran Digital LiBeRu dalam Membangun Lingkungan Belajar yang Interaktif dan Menyenangkan. *Tumoutou Social Science Journal*, *2*(1), 27–41. https://doi.org/10.61476/3h35zp97

Siregar, T., & Rhamayanti, Y. (2025). Implementasi Pengembangan Model ADDIE pada Dunia Pendidikan. *Jurnal Hasil Penelitian Dan Pengembangan(JHPP)*, *3*(2), 85–100. https://doi.org/https://doi.org/10.61116/jhpp.v3i2.561

Spatioti, A. G., Kazanidis, I., & Pange, J. (2022). A Comparative Study of the ADDIE Instructional Design Model in Distance Education. *Information*, *13*(9), 1–20. https://doi.org/10.3390/info13090402

Suranti, N. M. Y., & Pradmawati, N. K. Y. (2025). Applying Hindu Religious Principles in Elementary School Learning. *Indonesian Journal of Teacher Education*, *6*(2), 143–157.

Surul, R., & Septiliana, L. (2023). Analysis of the Implementation of IPAS (Natural and Social Sciences) Learning in the Merdeka Curriculum. *EDUCATIO : Journal of Education*, *8*(2), 320–328. Retrieved from https://www.ejournal.staimnglawak.ac.id/index.php/educatio/article/view/1301/424

Suwindia, I. G., Wati, N. N. K., Suari, A. A. P., Dewi, N. P. D. U., & Kurniawan, M. F. (2025). *Model Pembelajaran Suwindia Berbasis Catur Pramana*. Singaraja: Markandeya Pustaka.

Wong, J. T., & Hughes, B. S. (2023). Leveraging Learning Experience Design: Digital Media Approaches to Influence Motivational Traits That Support Student Learning Behaviors in Undergraduate Online Courses. *Journal of Computing in Higher Education*, *35*(3), 595–632. https://doi.org/10.1007/s12528-022-09342-1

Wuwur, E. S. P. O., Kuswandi, D., & Awaliyah, S. (2023). Internalisasi Kearifan Lokal Leva Nuang Sebagai Penguatan Pendidikan Karakter Dalam Pembelajaran IPAS di Sekolah Dasar. *Cetta: Jurnal Ilmu Pendidikan*, *6*(4), 782–791. https://doi.org/10.37329/cetta.v6i4.2583