

# Digital Teaching Materials for Elementary School Social Sciences Learning Courses

## Deva Ananta Wijaya1\*, Ni Wayan Rati2, I Nyoman Laba Jayanta3 🝺

1,2,3 Pendidikan Guru Sekolah Dasar, Universitas Pendidikan Ganesha, Singaraja, Indonesia

#### ARTICLE INFO

Article history: Received June 19, 2023 Accepted November 20, 2023 Available online December 25, 2023

#### Kata Kunci:

Bahan Ajar, Digital, Ilmu Pengetahuan Sosial

**Keywords:** Teaching Materials, Digital, Social Sciences



This is an open access article under the <u>CC BY-SA</u> license. Copyright © 2023 by Author. Published by Universitas Pendidikan Ganesha.

## ABSTRAK

Kegiatan pembelajaran dalam perkuliahan cenderung monoton dan menggunakan metode ceramah, sehingga berdampak pada kegiatan pembelajaran yang kurang optimal. Tujuan penelitian ini yaitu untuk mengembangkan bahan ajar digital pada mata kuliah pembelajaran IPS SD. Jenis penelitian ini yaitu pengembangan dengan menggunakan model ADDIE. Subjek penelitian ini yaitu 2 ahli desain pembelajaran, 2 ahli materi pembelajaran, dan 2 ahli media pembelajaran. Subjek uji coba penelitian ini yaitu 2 dosen dan mahasiswa yang meliputi 3 mahasiswa uji perorangan, dan 9 mahasiswa uji kelompok kecil. Metode pengumpulan data penelitian ini yaitu kuesioner. Instrumen pengumpulan data menggunakan rating scale. Teknik yang digunakan untuk menganalisis data yaitu analisis deskriptif kualitatif dan analisis deskriptif kuantitatif. Hasil penelitian yaitu hasil penilaian dari ahli materi pembelajaran didapatkan nilai sebesar 0,96 dengan kualifikasi validitas isi sangat tinggi. Penilaian yang diberikan oleh ahli desain pembelajaran yaitu 0,94 dengan kualifikasi validitas isi sangat tinggi. Hasil penilaian dari ahli media pembelajaran yaitu 0,96 dengan kualifikasi validitas isi sangat tinggi. Hasil uji kepraktisan mendapatkan nilai 98,5% (sangat baik). Hasil penilaian dari uji perorangan mendapatkan nilai 95% (sangat baik). Hasil penilaian dari uji kelompok kecil mendapatkan nilai 96.11% (sangat baik). Disimpulkan bahwa Bahan Aiar Digital Pembelajaran IPS layak digunakan dalam pembelajaran.

ABSTRACT

Learning activities in lectures tend to be monotonous and use the lecture method, so the impact on learning activities could be more optimal. This research aims to develop digital teaching materials for elementary school social studies subjects. This type of research is developed using the ADDIE model. The subjects of this study were two learning design experts, two learning material experts, and two learning media experts. The test subjects for this study were two lecturers and students, which included three individual test students and nine small group test students. This research data collection method is a questionnaire. The data collection instrument uses a rating scale. The techniques used to analyze the data are descriptive qualitative analysis and quantitative descriptive analysis. The study's results, the assessment of learning material experts, obtained a value of 0.96 with very high content validity qualifications. The assessment results from learning media experts were 0.96, with very high content validity qualifications. The practicality test results scored 98.5% (very good). The assessment results of the individual test get a score of 95% (very good). The results of the small group test scored 96.11% (very good). It was concluded that Social Science Learning Digital Teaching Materials were appropriate for use in learning.

### 1. INTRODUCTION

Education is one of the means that can be used to build superior human resources. Education is an effort to improve the quality of a country so that it can provide a superior young generation to realize the nation's development in a more advanced direction (Vennix et al., 2018; Widiyono & Millati, 2021). This education can be provided to the entire community, especially children about to enter elementary school (Dewi & Sujana, 2021; Saputra et al., 2020). Basic education is a type of education intended for elementary

school children, where, in this phase, children have special characteristics that can be studied pedagogically and psychologically. Elementary school is one of the levels of formal education that is under reform which has the aim of forming a child's personality as a complete human being who can develop himself according to the competencies he has (Fitria et al., 2021; Pratiwi et al., 2021). In developing its function, elementary schools refer to the function of national education, improving and developing students' abilities (Desstya et al., 2019; Hosseini & Gursel, 2012). This is why the quality of primary school education must be improved optimally. Quality of education is a comprehensive description and characteristic that shows students' ability to meet the needs of society. The current educational problem is the low quality of education at various levels (Setiawan, 2017; Syafrizal, 2017). This low quality of education certainly has an impact on human resources who have low abilities or skills. During the rapid flow of globalization, the quality of education must go hand in hand with developments in science and technology (Prajana & Astuti, 2020; Widiyono & Millati, 2021).

Apart from that, the current problem is that many teachers still need to be more optimal in teaching in the classroom. Previous research findings also reveal that teachers experience difficulties in determining creative learning (Arifin & Abduh, 2021; Wahyuningsih et al., 2021). Other research also reveals that teachers still need help developing innovative teaching materials to facilitate student learning (Azizul et al., 2020; Permana P & Manurung, 2020). Based on the results of interviews conducted with lecturers who taught elementary social studies education courses, several problems were found in the class. First, learning activities in lectures tend to be monotonous and use the lecture method. Apart from that, limited infrastructure on campus also impacts learning activities that could be more optimal. In learning activities, students tend to feel bored and passive when participating. Secondly, learning support media needs to be improved, such as teaching materials that are not varied, which impacts students who cannot follow the learning well. Third, there are limited places and time in distributing learning methods so that some lessons are given to students quickly. Fourth, there are still digital materials that support the learning process. The teaching materials used in social studies courses are limited, so students need help learning independently.

Based on this, the solution offered is to develop digital teaching materials. Teaching materials are one of the most important learning resources in learning activities. Teaching materials are used in learning activities developed systematically (Khamidah et al., 2019; Putri et al., 2018). The systematic development of teaching materials will certainly impact the ease with which students can fulfill the learning materials, thereby improving the quality of knowledge (Agustin et al., 2020; Sunarti & Rusilowati, 2020). This innovative teaching material is certainly very suitable because the collection of teaching materials, which are arranged digitally and systematically, can make it easier for students to fulfill the learning material.

Moreover, advances in information technology need to be used to support learning activities so that learning objectives can be achieved (Herlina & Hadiyanti, 2021; Putri, 2020). Current technological developments can be utilized and have a dominant positive value, so they are suitable for collaboration with teaching materials to make learning activities easier. Moreover, in this era, learning activities must utilize technological and media developments to improve learning quality (Faisal et al., 2021; Shaikhli, 2022; Sudarsana et al., 2019). These teaching materials are necessary for every education to help convey material.

Previous research also revealed that digital teaching materials are one of the things that teachers need to develop so that they will make learning activities easier (Azizul et al., 2020; Khamidah et al., 2019). Other research findings also reveal that digital teaching materials can stimulate learning and improve student learning outcomes (Agustin et al., 2020; Putri et al., 2018; Sunarti & Rusilowati, 2020). Based on this, digital teaching materials are very important in learning. Using digital teaching materials can make it easier for university lecturers to teach the material to students. The digital materials developed are related to the Edgar Dale concept of experience, which allows students to gain learning experience by listening, observing, and understanding through the media that has been developed. This certainly has an impact on students' increasing understanding. There has yet to be any study regarding digital teaching materials in elementary social studies learning courses. Based on this, this research aims to develop digital teaching materials in elementary social studies learning courses.

#### 2. METHOD

This type of research is developed using the ADDIE model, which includes analysis, design, development, implementation, and evaluation (Hidayat & Nizar, 2021). Product development needs and problems occurring in the field are analyzed at the analysis stage. Digital teaching material products for elementary social studies learning were designed at the design stage, and instruments were prepared. At the development stage, digital teaching material products for elementary social studies learning and expert testing were carried out. The implementation phase was not carried out due to time constraints. The subjects of this research were two learning design experts, two learning materials experts, and two learning

media experts. The test subjects for this research were two lecturers and students, including three individual test students and nine small group test students. The data collection method for this research is a questionnaire. The questionnaire method was used to collect assessments from experts and students regarding the developed digital teaching materials for elementary social studies learning. The data collection instrument uses a rating scale. The instrument grid is presented in Table 1 and Table 2.

#### Table 1. Learning Material Expert Instrument Grid

No	Aspect	Indicator	Total Item
1	Self Instruction	Clarity of learning outcomes	2
		Packaging of learning materials	2
		Learning material is supported by examples and	1
		illustrations	3
		Presents material relevant to the course	1
		Use of simple and communicative language	
2	Self Contained	Availability of complete learning materials.	2
3	Adaptive	Digital teaching materials for social studies learning in	2
		elementary schools adapt to technological developments	
4	User Friendly	Easy to use instructions.	2
	-	Ease of use of Information	2

#### Table 2. Learning Media Expert Instrument Grid

No	Aspect	Indicator	Total Item
1	Appearance	The attractive appearance of teaching materials.	1
		Regularity of teaching material design	2
		Choosing the type and size of letters helps make teaching	3
		materials more interesting.	
		Ease of reading text or writing.	4
		Color selection.	5
		Suitability of material to appearance.	6
		Material completion	7
2	Media	The consistency of presenting material in teaching materials.	8
	Presentation	Presentation of images by the material.	9
		The attractiveness of the image to the material.	10
3	Visual	Suitability of teaching material illustrations with learning materials	11
		Accuracy of illustrations with student characteristics.	12
		Suitability of teaching material background to student	
		characteristics.	13
		Layout suitability.	14
		Integration between type of writing, type of page, and	15
		material in teaching materials	

The validity of the instrument was analyzed using the Gregory formula. The results of calculating the instrument's validity get a 1.00, so it has very high content validity. Media content validity uses the Aiken validity formula. The techniques used to analyze data are qualitative descriptive analysis and quantitative descriptive analysis. Qualitative descriptive analysis is used to process data in the form of input from experts, students, and lecturers. Quantitative descriptive analysis is used to analyze data in the form of scores given by experts, students, and lecturers.

#### 3. RESULT AND DISCUSSION

#### Results

This research uses the ADDIE model to develop digital teaching materials for elementary social studies learning. First, analyze. The analysis results were that several problems were found in the class. First, learning activities in lectures tend to be monotonous and use the lecture method. Apart from that, limited infrastructure on campus also impacts learning activities that could be more optimal. In learning

activities, students tend to feel bored and passive when participating. Secondly, learning support media needs to be improved, such as teaching materials that are not varied, which impacts students who cannot follow the learning well. Third, there are limited places and time in distributing learning methods so that some lessons are given to students quickly. Fourth, there are still digital materials that support the learning process. The teaching materials used in social studies courses are limited, so students need help learning independently. The results of the material analysis are the materials used, social studies teaching materials developed in the form of social studies learning outcomes are used as a reference for developing digital teaching materials.

Second, planning. Digital teaching materials for elementary social studies learning are designed at this stage. The initial stage was to create a draft design of digital social studies learning materials that referred to the results of the previous analysis. In developing a prototype of digital teaching materials, several stages are carried out: determining learning materials, analyzing learning outcomes, and designing videos and digital teaching materials. The design process begins by designing a social studies learning video using the Filmora application and then uploading it via the Google Drive application page. Next, design teaching materials using the Canva application. Designing the layout of the teaching materials, then determining the learning outcomes of the material raised in the teaching materials, and adjusting the learning outcomes to the topics to be discussed. The design results are presented in Figure 1.



Figure 1. Design of Digital Teaching Materials for Social Studies Learning

Third, development. At this stage, develop digital teaching materials for social studies learning. The initial step is to develop a learning video designed based on a storyboard or video design, which is then acted out by the author in the video. Next, develop digital teaching materials. The development of this teaching material uses the Canva application. The Canva application is software that can be used to create various types of written and image/video files. Making digital teaching materials is divided into several pages: the cover page, foreword page, table of contents page, guide page for using teaching materials, learning outcomes page followed by the contents of the material, and evaluation sheet page. The development results are presented in Figure 2.



Figure 2. Results of the Development of Digital Teaching Materials for Social Studies Learning

The digital social studies learning materials were then tested for validity. Based on the assessment results from learning material experts, a score of 0.96 was obtained with very high content validity qualifications. The assessment given by learning design experts was 0.94, with very high content validity qualifications. The assessment results from learning media experts were 0.96, with very high content validity qualifications. The results of the practicality test of teaching materials carried out by two lecturers received a score of 98.5%, resulting in very good qualifications. The assessment results from the individual test received a score of 95%, resulting in very good qualifications. The assessment results from the small group test obtained a score of 96.11%, resulting in very good qualifications. Based on this, it is concluded that Digital Social Sciences Learning Teaching Materials are suitable for use in learning.

#### Discussion

The research results show that Digital Social Sciences Learning Teaching Materials are suitable for learning. Several factors cause this. First, digital social studies learning materials make learning easier for students. The digital teaching materials introduced involve material regarding social issues specifically for students, making it easier for students to learn. Apart from that, the digital teaching materials that have been developed are equipped with explanations of the material in the form of videos and images, which will facilitate students' understanding in improving the material (Sunarti & Rusilowati, 2020; Winatha, Naswan, et al., 2018). Previous research also revealed that using videos in learning will make it easier for students to understand teaching material (Azizul et al., 2020; Permana P & Manurung, 2020). Other findings also reveal that the use of images will impact the clarity of the meaning of the material presented in the media, so it is important to pay attention to this (Agustin et al., 2020; I. H. N. Putri et al., 2018). This is what causes the development of digital social studies learning materials to make learning easier for students. This is also reinforced by the experts' assessment stating that the Digital Social Sciences Learning Teaching Materials received very good and valid qualifications.

Second, digital social studies learning materials increase enthusiasm for learning. Digital teaching materials for elementary social studies learning combine video materials and evaluation sheets, which make learning activities interesting and fun. Interesting learning activities will benefit students because they can motivate them to learn (Musaddat et al., 2021; Winatha, Suharsono, et al., 2018). This learning motivation is necessary for students studying because it will influence understanding and impact learning outcomes (Chairudin & Dewi, 2021; Nisa et al., 2020). Using digital teaching materials in learning certainly increases activity and student learning motivation (Darmaji et al., 2020; Serevina et al., 2018). This is due to previous findings revealing that using digital teaching materials positively impacts students so that learning goals are achieved (Asrial et al., 2020; Erna et al., 2021). Apart from that, learning using digital language can also increase the minimum number of students asking questions and increase students' self-confidence. This digital teaching material can certainly overcome the problem of students who are passive at times and do not dare to ask questions during learning activities. The development of digital teaching is very important for every educator to pay attention to in learning activities.

Third, digital social studies learning materials increase learning motivation. The development of digital teaching materials is inseparable from Edgar Dale's experience triangle theory. This reveals that the learning activity level is low if learning only focuses on reading and listening activities (Herawati & Muhtadi, 2018; Sari & Manuaba, 2021). However, learning activities and student activeness will increase if learning activities can be directed by listening, benefiting, and doing something directly (Darmaji et al., 2019; Mauliana et al., 2022). Involving technology in learning certainly also impacts students' competence in using technology appropriately (Prajana & Astuti, 2020; Widiyono & Millati, 2021). The use of technology in learning will certainly make learning more creative and innovative, thereby increasing learning motivation (Darimi, 2017; Radyuli & Rahmat, 2017). If studied through learning, it certainly positively impacts students accessing internet learning appropriately and, at times, tailored to student needs. Learning activities become more enjoyable, and students become motivated to learn.

Previous research findings also reveal that developing digital teaching materials positively impacts optimal learning activities (Azizul et al., 2020; Permana P & Manurung, 2020). Other research also reveals that digital teaching materials can increase motivation and enthusiasm for learning, resulting in improved learning outcomes (Khamidah et al., 2019; I. H. N. Putri et al., 2018). Moreover, using technology in learning can remind teaching staff to manage the class. This certainly impacts the practicality of learning activities and positively impacts an optimal learning environment. Integration of computer devices or laptops can stimulate students to manage and collaborate (Agustin et al., 2020; Sunarti & Rusilowati, 2020). Therefore, student competence is increasingly increasing with changing technology. The limitation of this research is that this research only tests product validity and has yet to test product effectiveness. It is hoped that other research will conduct effectiveness tests to determine the effectiveness of digital teaching materials on student learning outcomes. This research implies that using a digital manager for elementary school teacher

education students will make learning activities more practical and interesting for students to achieve learning objectives optimally.

#### 4. CONCLUSION

The results of the data analysis show that the Digital Social Sciences Learning Teaching Materials received very good qualifications from experts. The results of the practicality test showed that the Digital Social Sciences Learning Teaching Materials received very practical qualifications. Based on this, it is concluded that Social Sciences Learning Digital Teaching Materials are suitable for learning. Social Sciences Learning Digital Teaching Materials can help students learn.

#### 5. REFERENCES

- Agustin, D. Y., Setyosari, P., & Suharti. (2020). Pengembangan Bahan Ajar Tematik Digital Untuk Siswa Kelas V Sekolah Dasar. *Edcomtech Jurnal Kajian Teknologi Pendidikan*, 6(1), 140–150. https://doi.org/10.17977/um039v6i12021p140.
- Arifin, M., & Abduh, M. (2021). Peningkatan Motivasi Belajar Model Pembelajaran Blended Learning. *Jurnal Basicedu*, 5(4), 2339–2347. https://doi.org/10.31004/BASICEDU.V514.1201.
- Asrial, Syahrial, Maison, Kurniawan, D. A., & Piyana, S. O. (2020). Ethnoconstructivism E-Module to Improve Perception, Interest, and Motivation of Students in Class V Elementary School. *JPI (Jurnal Pendidikan Indonesia)*, 9(1), 30–41. https://doi.org/10.23887/jpi-undiksha.v9i1.19222.
- Azizul, A., Riski, W. Y., Fitriyani, D. I., & Sari, I. N. (2020). Pengembangan Bahan Ajar Komik Digital Pada Mater Gerak. *Vox Edokasi: Jurnal Ilmiah Ilmu Pendidikan*, 11(2). https://doi.org/10.31932/ve.v11i2.829.
- Chairudin, M., & Dewi, R. M. (2021). Pengembangan Bahan Ajar Buku Saku Digital Berbasis Problem Based Learning pada Mata Pelajaran Ekonomi. *Edukatif: Jurnal Ilmu Pendidikan*, *3*(3). https://doi.org/10.31004/edukatif.v3i3.491.
- Darimi, I. (2017). Teknologi Informasi dan Komunikasi Sebagai Media Pembelajaran Pendidikan Agama Islam Efektif. Jurnal Pendidikan Teknologi Informasi, 1(2), 111–121. https://doi.org/10.1007/s11068-008-9037-4.
- Darmaji, Astalini, Kurniawan, D. A., Parasdila, H., Iridianti, Susbiyanto, Kuswanto, & Ikhlas, M. (2019). E-Module-based problem solving in basic physics practicum for science process skills. *International journal of online and biomedical engineering*, *15*(15), 4–17. https://doi.org/10.3991/ijoe.v15i15.10942.
- Darmaji, D., Kurniawan, D. A., Astalini, A., Winda, F. R., Heldalia, H., & Kartina, L. (2020). The Correlation Between Student Perceptions of the Use of E-Modules with Students' Basic Science Process Skills. *JPI (Jurnal Pendidikan Indonesia)*, 9(4), 719–729. https://doi.org/10.23887/JPI-UNDIKSHA.V9I4.28310.
- Desstya, A., Prasetyo, Z. K., Suyanta, Susila, I., & Irwanto. (2019). Developing an instrument to detect science misconception of an elementary school teacher. *International Journal of Instruction*, 12(3), 201– 218. https://doi.org/10.29333/iji.2019.12313a.
- Dewi, N. L. P. J., & Sujana, I. W. (2021). Learning Multimedia Based on RPG Maker MV Material for Circumference and Area of Flat Shapes for Elementary School Students. *Journal of Education Technology*, 5(3), 365. https://doi.org/10.23887/jet.v5i2.34462.
- Erna, M., Anwar, L., & Mazidah, M. (2021). Interactive e-module using Zoom Cloud Meeting platform to reduce misconceptions on salt hydrolysis material. *Journal of Education and Learning (EduLearn)*, 15(2), 283–290. https://doi.org/10.11591/edulearn.v15i2.18460.
- Faisal, A., Handayanna, F., & Purnamasari, I. (2021). Implementation Technology Acceptance Model (Tam) on Acceptance of the Zoom Application in Online Learning. *Jurnal Riset Informatika*, 3(2), 85–92. https://doi.org/10.34288/jri.v3i2.195.
- Fitria, Y., Kenedi, A. K., & Syukur, S. K. (2021). The Effect Of Scientific Approach On Elementary School Students'learning Outcomes In Science Learning. JPsd (Jurnal Pendidikan Sekolah Dasar), 7(1). https://doi.org/10.30870/jpsd.v7i1.10353.
- Herawati, N. S., & Muhtadi, A. (2018). Pengembangan Modul Elektronik (E-Modul) Interaktif Pada Mata Pelajaran Kimia kelas XI SMA. *Jurnal Inovasi Teknologi Pendidikan*, 5(2), 180–191. https://doi.org/10.21831/jitp.v5i2.15424.
- Herlina, A., & Hadiyanti, D. (2021). Pengembangan Modul Pembelajaran IPA Digital Berbasis Flipbook Untuk Pembelajaran Daring di Sekolah Dasar. *Jurnal Elementaria Edukasia*, 4(2), 284–291. https://doi.org/10.31949/JEE.V4I2.3344.

- Hidayat, F., & Nizar, M. (2021). Model Addie (Analysis, Design, Development, Implementation and Evaluation) dalam Pembelajaran Pendidikan Agama Islam. *JIPAI: Jurnal Inovasi Pendidikan Agama Islam*, *1*(1), 28–38. https://doi.org/10.22236/JPI.V1111.5033.
- Hosseini, E., & Gursel, F. (2012). Development of a Guide Book for Elementary School Teachers in Inclusionary Physical Education for Students with Mental Retardation. *Procedia Social and Behavioral Sciences*, 47. https://doi.org/10.1016/j.sbspro.2012.06.796.
- Khamidah, N., Winarto, W., & Mustikasari, V. R. (2019). Discovery Learning : Penerapan dalam pembelajaran IPA berbantuan bahan ajar digital interaktif untuk meningkatkan prestasi belajar siswa. *JIPVA (Jurnal Pendidikan IPA Veteran)*, *3*(1), 87. https://doi.org/10.31331/jipva.v3i1.770.
- Mauliana, M. I., Shofiyah, N., Rahmawati, Y., Nisa, K., Sidoarjo, U. M., Budi, I., & Malang, U. (2022). Practicum E-Module Development to Improve Distance Learning Efficiency in Basic Physics Courses in the Pandemic Period. *Acitya: Journal of Teaching and Education*, 4(1), 189–206. https://doi.org/10.30650/AJTE.V4I1.3212.
- Musaddat, S., Suarni, N. K., Dantes, N., Putrayasa, I. B., & Dantes, G. R. (2021). Kelayakan pengembangan bahan ajar digital berkearifan lokal sebagai bahan literasi bahasa berbasis kelas serta pengaruhnya terhadap karakter sosial dan keterampilan berbahasa siswa sekolah dasar. *Jurnal Ilmiah Mandala Education*, 7(3). https://doi.org/10.36312/jime.v7i3.2123.
- Nisa, W. L., Ismet, I., & Andriani, N. (2020). Development of E-Modules Based on Multi-representations in Solid-State Physics Introductory Subject. *Berkala Ilmiah Pendidikan Fisika*, 8(2), 73. https://doi.org/10.20527/bipf.v8i1.7690.
- Permana P, N. D., & Manurung, I. F. U. (2020). Penggunaan Bahan Ajar Digital Berbasis Inquiry pada Masa Pandemi Covid-19 untuk Mata Kuliah Pembelajaran IPA di SD Kelas Tinggi. *el-Ibtidaiy:Journal of Primary Education*, 3(2), 73. https://doi.org/10.24014/ejpe.v3i2.11008.
- Prajana, A., & Astuti, Y. (2020). Pemanfaatan Teknologi Informasi dan Komunikasi Dalam Pembelajaran oleh Guru SMK Di Banda Aceh dalam Upaya Implementasi Kurikulum 2013. *JINOTEP (Jurnal Inovasi dan Teknologi Pembelajaran): Kajian dan Riset Dalam Teknologi Pembelajaran, 7*(1), 33–41. https://doi.org/10.17977/um031v7i12020p033.
- Pratiwi, M. S., Zulherman, Z., & Amirullah, G. (2021). The Use of the Powtoon Application in Learning Videos for Elementary School Students. *Journal of Physics: Conference Series*, 1783(1), 012115. https://doi.org/10.1088/1742-6596/1783/1/012115.
- Putri, A. E. (2020). Analisis Kebutuhan Bahan Ajar Berbasis Literasi Digital Nilai-Nilai Kearifan Lokal pada Tradisi Saprahan di Pontianak. *Yupa: Historical Studies Journal*, 3(1), 1–7. https://doi.org/10.30872/yupa.v3i1.132.
- Putri, I. H. N., Sholihah, U., Handayani, E. M., & Sumarmi, S. (2018). Pengembangan Suplemen Bahan Ajar Digital Pada Mata Pelajaran Geografi Dengan Topik Bahasan Sumber Daya Laut Berbasis Kearifan Lokal. Jurnal Pendidikan Geografi, 23(2), 78–84. https://doi.org/10.17977/um017v23i22018p078.
- Radyuli, P., & Rahmat, V. (2017). Korelasi Disiplin Belajar dan Kreativitas Belajar Terhadap Minat Belajar Teknologi Informasi dan Komunikasi (TIK). Jurnal Pendidikan dan Teknologi Informasi, 4(2), 262– 271. https://doi.org/10.23887/jipp.v3i3.21834.
- Saputra, R. A., Herpratiwi, H., & Caswita, C. (2020). Developing a STEM-based students' worksheet building material in elementary school Bandar Lampung City. *Jurnal Prima Edukasia*, 8(2). https://doi.org/10.21831/jpe.v8i2.33478.
- Sari, N. M. A., & Manuaba, I. B. S. (2021). Development of Interactive E-Module Based on Human Digestive System Material Inquiry on Theme 3 About Healthy Foods for Fifth Grade Elementary School. *Indonesian Journal Of Educational Research and Review*, 4(1), 54. https://doi.org/10.23887/ijerr.v4i1.33297.
- Serevina, V., Sunaryo, Raihanati, Astra, I. M., & Sari, I. J. (2018). Development of E-Module Based on Problem Based Learning (PBL) on Heat and Temperature to Improve Student's Science Process Skill. *The Turkish Online Journal of Education Technology*, 17(3), 26–36. https://doi.org/10.35445/alishlah.v12i2.263.
- Setiawan, D. (2017). Pendekatan Saintifik dan Penilaian Auntentik untuk Meningkatkan Mutu Pembelajaran Pendidikan Agama Islam. *AL-ASASIYYA: Journal Of Basic Education*, 1(2). https://doi.org/10.24269/ajbe.v1i2.683.
- Shaikhli, D. Al. (2022). The effect of the tracking technology on students ' perceptions of their continuing intention to use a learning management system. *Education and Information Technologies*, 0123456789. https://doi.org/10.1007/s10639-022-11156-8.
- Sudarsana, I. K., Mulyaningsih, I., Kurniasih, N., Haimah, Wulandari, Y. O., Ramon, H., Satria, E., Saddhono, K., Nasution, F., & Abdullah, D. (2019). Integrating Technology and Media in Learning Process. *Journal of Physics: Conference Series*, 1363(1). https://doi.org/10.1088/1742-6596/1363/1/012060.

- Sunarti, S., & Rusilowati, A. (2020). Pengembangan bahan ajar digital gerak melingkar berbantuan scratch berbasis science, technology, engineering, and mathematics. *Unnes Physics Education Journal*, 9(3). https://doi.org/10.15294/upej.v9i3.45869.
- Syafrizal, F. (2017). Peran Kepala Sekolah Dalam Pengembangan Manajemen Sekolah Sebagai Upaya Meningkatkan Mutu Pendidikan Di Sd Plus Islam Excellent Bukittinggi. *JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan),* 1(2), 65–79. https://doi.org/10.31851/jmksp.v1i2.1008.
- Vennix, J., den Brok, P., & Taconis, R. (2018). Do outreach activities in secondary STEM education motivate students and improve their attitudes towards STEM? *International Journal of Science Education*, 40(11). https://doi.org/10.1080/09500693.2018.1473659.
- Wahyuningsih, E. T., Purwanto, A., & Medriati, R. (2021). Hubungan Minat Belajar Dengan Hasil Belajar Fisika Melalui Model Project Based Learning Di Kelas XI MIPA SMAN 6 Kota Bengkulu. Jurnal Kumparan Fisika, 4(2), 77–84. https://doi.org/10.33369/JKF.4.2.77-84.
- Widiyono, A., & Millati, I. (2021). Peran Teknologi Pendidikan dalam Perspektif Merdeka Belajar di Era 4.0. *Journal of Education and Teaching (JET)*, 2(1), 1–9. https://doi.org/10.51454/jet.v2i1.63.
- Winatha, K. R., Naswan, S., & Ketut, A. (2018). Pengembangan E-modul Interaktif Berbasis Proyek Pada Mata Pelajaran Simulasi Digital Kelas X di SMK TI Bali Global Singaraja. Jurnal Teknologi Pembelajaran Indonesia, 8(1). https://doi.org/10.23887/jtpi.v8i1.2238.
- Winatha, K. R., Suharsono, N., & Agustin, K. (2018). Pengembangan E-Modul Interaktif Berbasis Proyek Mata Pelajaran Simulasi Digital. *Jurnal Pendidikan Teknologi dan Kejuruan*, *15*(2), 188–199. https://doi.org/10.23887/jtpi.v8i1.2238.