



1stFlip Flipbook Creator-Assisted E-Module to Advance Learning Quality in Elementary Schools

Syifa Andriana Maulidya¹, Zulherman^{2*} 

^{1,2} Universitas Muhammadiyah Prof. Dr. Hamka, Jakarta, Indonesia

ARTICLE INFO

Article history:

Received February 03, 2024

Accepted May 10, 2024

Available online May 25, 2024

Kata Kunci:

E-Modul, 1stflip-Flipbook, Sekolah Dasar, IPAS, Media Pembelajaran

Keywords:

E-Module, 1stflip-Flipbook, Elementary School, IPAS, Learning Media



This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Copyright © 2024 by Author. Published by Universitas Pendidikan Ganesha.

ABSTRAK

Penekanan saat ini adalah pada peningkatan pembelajaran IPAS siswa kelas empat melalui penggunaan materi pembelajaran yang menarik, karena hanya ada sedikit inovasi di bidang ini. Dengan menggunakan media interaktif yang mutakhir, penelitian ini bermaksud untuk mengembangkan modul elektronik menggunakan 1stflip Flipbook untuk meningkatkan keterlibatan, kinerja, dan kualitas pendidikan siswa secara keseluruhan. Pendekatan R&D, yaitu model ADDIE, digunakan untuk penelitian ini. Para ahli di bidang media, materi, dan bahasa memvalidasi instrument penelitian. Para validator mengisi kuesioner, dan siswa mengikuti pretest dan posttest; data dikumpulkan melalui wawancara dan observasi. Data dianalisis dengan menggunakan metode kuantitatif dan deskriptif. Hasil validasi menunjukkan bahwa E-modul valid sebesar 78,3%, dengan nilai N-Gain 63,16% untuk kelas eksperimen dan 29,39% untuk kelas kontrol. Uji hipotesis menunjukkan perbedaan signifikan dalam peningkatan kemampuan metakognitif siswa antara kelompok yang menggunakan E-modul dan kelompok kontrol. Penggunaan E-Modul dengan 1stflip Flipbook dapat meningkatkan kualitas pembelajaran IPAS di sekolah dasar, menunjukkan nilai penting dalam meningkatkan mutu pembelajaran.

ABSTRACT

The current emphasis is on enhancing fourth graders' IPAS learning through the use of engaging learning materials, as there has been little innovation in this area. Using cutting-edge interactive media, this study intends to develop an E-module using 1stflip Flipbook in order to raise students' engagement, performance, and the overall quality of their education. The R&D approach, namely the ADDIE model, is utilized for the research. Experts in media, materials, and languages validated the research instruments. Validators filled out questionnaires, and students took pretests and posttests; data was gathered through interviews and observations. The data was analyzed using quantitative and descriptive methods. The results of the validation showed that the E-module was valid at 78.3%, with an N-Gain value of 63.16% for the experimental class and 29.39% for the control class. The results of the hypothesis test demonstrated that the group of students who used the E-module significantly outperformed the control group in terms of their metacognitive skill improvement. There is significant value in enhancing the quality of learning through the usage of E-Modules with 1stflip Flipbook to enhance IPAS learning in primary schools.

1. INTRODUCTION

Education is universally acknowledged as an intrinsic entitlement for every child in this country, and it is considered essential to ensure widespread access to educational opportunities. The primary goal of the Indonesian National Education system is to improve skills and enhance the overall standard of living and human respect in order to achieve national objectives (Gaviria, 2022; Handayani et al., 2018; Rifa'i, 2019). The curriculum is a crucial element in the field of education, exerting substantial impact on the goals and approaches to learning. Indonesia's educational progress continues to move forward in its goal of providing widespread access to education of excellent quality. A notable recent development is the introduction of the Merdeka Curriculum, emphasizing a multifaceted and enjoyable approach to learning (Charland et al., 2021; Ferdous & Novita, 2023; Penuel et al., 2023). Within this framework, the integral disciplines of Natural and Social Sciences (IPAS) play a crucial role in cultivating the Pancasila Student Profile. Nevertheless, challenges persist in integrating technology into the educational landscape, as certain institutions exhibit apprehension towards this endeavour (Chugh et al., 2023; Roemintoyo & Budiarto, 2021). The intertwined impact of various supportive factors such as learning materials, resources, educational setting, teacher proficiency, and educational facilities on students' academic performance and the accomplishment of learning objectives is underscored. As previously indicated, one pivotal element

*Corresponding author.

E-mail addresses: zulherman@uhamka.ac.id (Zulherman)

influencing the attainment of learning objectives is the utilization of learning materials (Bogiannidis et al., 2023; Pandita & Kiran, 2023; Yuniarti & Radia, 2021).

With the expansive growth of educational technology, pedagogy has evolved comprehensively, complemented by its integration into educational practices. However, the practical scenario reveals that some educational institutions still strongly adhere to conventional teaching methods and exhibit reluctance towards the integration of technology within the learning environment. Teachers who continue to employ one-way lecture ways and printed modules as learning aids demonstrate educational institutions' reluctance to incorporate technology into the learning process (El-Hamamsy et al., 2024; Markelj & Sundvall, 2023; Pappa et al., 2024). According to the observations made at SDN CBS 08 Pagi and SDN CBS 19 Pagi on 4th grade students, the delivery of subject matter still relies on a lecture approach. Interactive elements are only used for certain parts of the subject, mostly through student presentations and guided class discussions. Despite these efforts, a survey of 102 students revealed that 65.68% still faced challenges in acquiring problem-solving skills and 70.58% reported difficulty maintaining their interest in the subject matter. These findings suggest a significant gap between the current educational practices and the desired outcomes of engaging and effective learning experiences. The evolution of learning media demonstrates that interactive and technology-relevant learning approaches are vital in increasing student engagement in learning (Rahim, 2022; Yulhendri et al., 2022). However, there is always room for additional innovation, such as generating more effective and pleasant learning media. Previous studies indicate that the utilization of flipbook applications in educational materials has demonstrated efficacy, particularly in enhancing student learning outcomes and engagement. Observed that e-books created with Flip PDF Corporate Edition effectively enhanced the understanding of force and energy among elementary school students (Basna & Zulherman, 2023; Perdana et al., 2021). Additionally, flipbooks have been successfully integrated into teaching high school biology. Corroborating these results, another study emphasized the boost in student engagement within elementary school settings through the utilization of Kvisoft Flipbook Maker. Validation results from multiple specialists demonstrated positive acceptance of this learning media, proving that flipbook applications might be a good option in building a dynamic and interactive learning environment.

Circumstance is technologies like 1stFlip Flipbook-assisted e-modules prove useful. This e-module merely delivers learning materials engagingly and dynamically, but additionally encourages students to learn following their preferred learning style (Bisri et al., 2023; Hiralda & Zulherman, 2023). Students' motivation and academic performance are expected to be positively affected by the creation of e-modules supported by 1stFlip Flipbook technology within this framework. The goal also includes improving primary school science and social studies curricula generally. So, this study has great potential to improve Indonesia's educational system. If we want students to stay engaged in learning, we need to use interactive learning methods that are compatible with new technologies (Hapsari & Zulherman, 2021; Oktaviani et al., 2023). The novelty of this model lies in the comprehensive features offered by the flipbook medium. The 1stFlip Flipbook application provides a complete learning method, including interactive materials, images, embedded YouTube videos, appealing backgrounds and instrument, and barcodes containing games or quizzes that can be directly clicked or scanned. These elements collectively create a more stimulating and enjoyable learning experience, setting this approach apart from traditional methods (Hardiansyah & Mulyadi, 2022; Innaya Putri et al., 2022).

The proposed research relies on the findings from school observations to develop the best learning technique for students' requirements. Thus, the development of e-modules using 1stFlip Flipbook is based not only on theory, but also on a thorough grasp of the real-world setting of primary school learning (Amini & Usmeldi, 2022; Oktaviani et al., 2023). The novelty of this study is intended to make a significant contribution to efforts to improve the quality of learning in elementary schools, as well as pave the way for the development of more innovative and adaptive learning approaches in the future. The major goal of this project is to build an E-Module utilizing the ADDIE approach to enhance the effectiveness and quality of IPAS learning for fourth-grade students at elementary schools. The aim is to provide engaging and stimulating learning materials that boost students' motivation and improve their understanding of the subject matter.

2. METHOD

The present study employs the Research and Development (R&D) strategy, which is a framework used in educational development projects that prioritize continuous improvement and innovation through creativity (Maryanti & Nandiyanto, 2021; I. G. P. E. Saputra et al., 2021). Developmental research activities seek to create educational resources and novel teaching methods. These are then tested, evaluated, and improved through a process of iteration to address specific educational requirements. Within this framework, researchers employed the ADDIE development model, which comprises five sequential stages:

analysis, design, development, implementation, and evaluation (Nita et al., 2022; Sun, 2024). The various phases of the ADDIE development model are delineated in Figure 1.

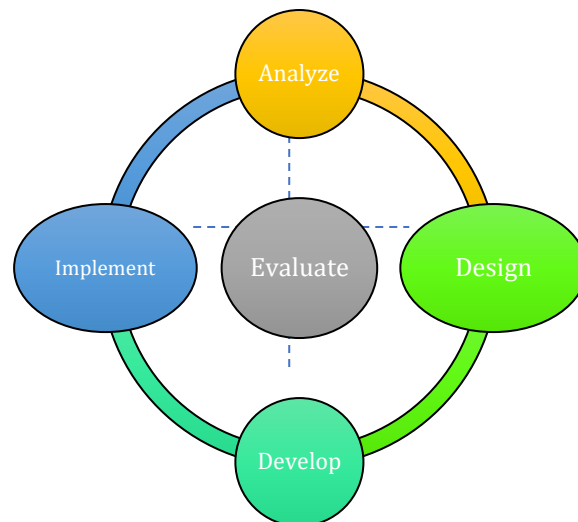


Figure 1. The Various Phases of the ADDIE Development Model

This study included fourth-grade children who were attending SDN CBS 08 and SDN CBS 19 in the second semester of the 2023/2024 school year. The research sample consisted of a total of 30 students. More precisely, the experimental group consisted of 30 students from SDN CBS 08, whereas the control group consisted of 30 students from SDN CBS 19. Data for the development of e-module teaching materials was collected via observation, interviews, and pretest-posttest testing, with the use of 1stflip Flipbook (Rizkiana & Zulherman, 2023). This test employed multiple choice with fifteen questions, each having four options (a, b, c, and d). The grids of pretest-posttest questions is shown in Table 1.

Table 1. Pretest-Posttest Question Grids

Learning Outcomes	Learning Objectives	Material	Question Number & Level
Students understand the importance of human needs and the concept of humans as social beings.	Understand the concept of human needs and human nature as social creatures	Human Needs	1-C1; 2-C1; 3-C3; 4-C3; 5-C2
Students are able to identify ways to fulfill needs in the period before money was invented.	Recognize how to get needs in the period before money was invented	How past societies met their needs	6-C2; 7-C3
Students are able to identify the conditions for the exchange of goods.	Recognize the conditions for the exchange of goods	Conditions for barter	8-C1; 9-C2; 10-C4; 11-C1
Students understand the role and process of economic activities.	Understand the basic concepts of the process of economic activity	Economic Activity	12-C1; 13-C5; 14-C2; 15-C2

This study uses both quantitative and qualitative data analysis methods. Data analysis was conducted using quantitative analytic techniques gathered from validators throughout the validation step, as well as input from material specialists, media experts, and linguists (Prasetyo & Zulherman, 2023). This study examines the design's quality and efficacy using user feedback. To validate the data, the experts utilized a Likert scale (Anggraeni et al., 2019). The requirements for the Likert scale are presented in Table 2. As shown in Table 2, the process of converting scores is necessary for evaluating the efficacy of interest quantification provided by E-Modules in conjunction with 1stflip Flipbook Creator, specifically addressing techniques for meeting varied needs. This analytical method is critical for determining the efficacy of media content created by the validator (Nugroho et al., 2023). Furthermore, it allows for the creation of descriptive percentages for responders using a prescribed computational algorithm. Table 3 shows the feasibility

evaluation framework for the gradual development of e-modules, which is enabled by 1stflip Flipbook Creator.

Table 2. Illustrates the Scale Criteria for Media Rating

Score	Category
5	Very Good
4	Good
3	Enough
2	Less
1	Very Less

Table 3. Outlines the Feasibility Scale for Developing a 1stflip Flipbook Creator-assisted E-Module

Percentage score (%)	Interpretation
81% - 100%	Very Worthy
61% - 80%	Worthy
41% - 60%	Decent enough
21% - 40%	Not worth it
0% - 20%	Very Not worth it

An N-Gain measurement was performed to determine the effectiveness of the E-Module in improving students' metacognitive competencies and understanding of the IPAS concept. To highlight the importance of N-Gain gains across both experimental and control groups, a t-test was used to confirm the statistical significance of the data from this investigation, which included pretest, treatment, and posttest stages. Data analysis included a comparison of pretest and posttest results (Dewi et al., 2022; Handiar & Zulherman, 2023). The students' examination scores were evaluated using the criteria outlined in Table 4.

Table 4. Presents the N-Gain Level Criteria

Percentage score (%)	Gain Criteria
< 40	Not Effective
40 - 50	Less Effective
56 - 75	Moderately Effective
>76	Effective

The study used SPSS 23 software for data analysis. SPSS was chosen because it can deliver credible statistical analysis in a variety of formats, including tables, measurements, and graphical representations (Hiralda & Zulherman, 2023). This versatility facilitated the seamless analysis of research data, hence, underpinning the choice of SPSS for this study.

3. RESULT AND DISCUSSION

Result

The E-Modules provided by 1stflip Flipbook are created utilizing the ADDIE development technique, which has five separate stages: analysis, design, development, implementation, and evaluation. As part of this study, the analysis phase consisted of conducting interviews with instructors who educate fourth-grade students. Afterwards, the design process involves creating the content for the E-Module by conceptualizing it. Within this phase, researchers will delineate themes, titles, content materials, and queries, all relevant to the subject matter concerning IPAS. The design of E-Module media is executed utilizing 1stflip Flipbook, Clip Studio Paintex, and Word software. The results of this process, depicting the generation of educational resources in the form of E-Modules facilitated by 1stflip Flipbook, are illustrated in Figure 2.

Based on a thorough data analysis, it was discovered that media experts achieved a mean score of 81%, material experts had an average score of 66%, and language experts had an average score of 88%. The combined average percentage across the three expert panels for validation purposes was 78.3%, which satisfied the acceptable criteria. Following that, revisions and modifications to the e-module media, facilitated by 1stflip Flipbook, will be implemented to address identified deficiencies in accordance with the suggestions and input of validation specialists. A summary of the experts' findings is presented in Table 5.

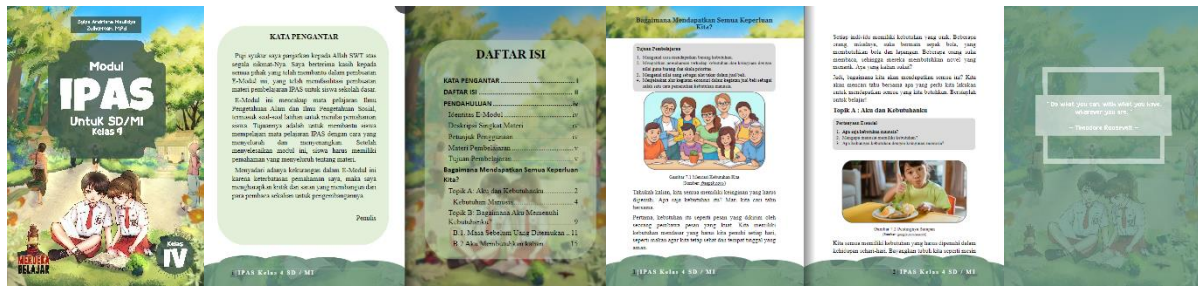


Figure 2. 1stflip Flipbook E-Module Development Results

Table 5. Summarizes the Result of the Experts' Validation

Validator	Score Obtained	Maximum Score	Average Percentage
Media	61	75	81%
Material	33	50	66%
Language	44	50	88%
Total			78.3%
Qualification			Worthy

The implementation phase signifies the practical application of the designed learning media within the authentic learning environment. During this phase, the evaluation of product validation is conducted, involving validation experts and respondents (students). The evaluative process encompasses pretest and posttest assessments administered to fourth-grade students. Researchers used a one-group pretest-posttest Design to allow pretest, treatment, and post-test sessions. The importance of the effect was calculated using the N-Gain score algorithm. A summary of this analysis is provided in Table 6.

Table 6. Provides the Average N-Gain Score for Experimental and Control Classes

Statistics	Experiment Class N-Gain Score	Control Class N-Gain Score
Average	63.16	29.39
Minimum	25.93	-35
Maximum	100	100

According to Table 6, the Experimental group's average N-Gain Score after being exposed to the E-Module is 63.16%, which suggests that it is somewhat effective. The mean N-Gain score varies between 25.93% and 100%. The control group, which did not get the E-Module, had an average N-Gain score of 29.39%, indicating that it falls into the "Not Effective" category. The range for N-Gain varies from -35% to 100%. In addition, a statistical analysis using the Independent t-test was done to evaluate the N-Gain Index, the findings of which are reported in Table 7.

Table 7. Details the Independent T-Test for N-Gain Score

Statistics Parameters	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	
NGain_Persen	Assumptions of equal variances	0.031	0.860	-6.237	57	0.000
	Assumptions of unequal variances			-6.223	55.468	0.000

The results obtained from the independent samples test, as presented in Table 7, indicate a Levene's Test for Equality of Variances significance value of 0.86, surpassing the predetermined significance level of 0.05. This suggests that the variability of the N-Gain (%) values is similar between both groups of participants. Furthermore, examination under the "Independent Samples Test" section reveals a two-tailed significance value (Sig. 2 tailed) of 0.00, which is less than the threshold of 0.05. This outcome indicates a substantial disparity in effectiveness between classes utilizing E-module media and those not employing such media to enhance learning quality concerning IPAS material, specifically focusing on "How to Get All Our Needs" for fourth-grade elementary school students.

Discussion

According to the research findings, the resultant developmental product comprises E-Module teaching materials supported by 1stflip Flipbook Creator tailored for fourth-grade IPAS subjects at SDN CBS 08 and SDN CBS 19. These teaching materials, created with 1stflip Flipbook Creator, aim to address challenges encountered in IPAS subjects, particularly focusing on the intricacies of fulfilling various needs outlined in Chapter 7. As asserted by previous study the utilization of E-Books generated with Kvisoft Flipbook Maker proves highly beneficial, leading to improved learning outcomes among elementary school students (Hiralda & Zulherman, 2023). This research is significant as it demonstrates that using E-Module learning media with the ADDIE approach can contribute positively to enhancing the effectiveness and quality of IPAS learning at the elementary school level. By providing engaging and stimulating learning materials, this study lays the foundation for developing more innovative and effective teaching methods (N. L. P. S. U. Putri & Jayanta, 2023; Suratnu, 2023). The content integrated into the construction of E-Module educational resources matches the learning objectives indicated in the most recent curriculum, namely the independent curriculum. The trial findings demonstrate positive evaluations from pupils. Furthermore, the E-Module teaching materials assisted by 1stflip Flipbook Creator have received a noteworthy rating of 78.3% from expert evaluations, confirming their suitability for incorporation into the learning process. Therefore, it can be inferred that the E-Module media, with the assistance of 1stflip Flipbook, which emphasizes solutions for meeting different requirements, is suitable for use with fourth-grade elementary school students.

This study aligns with previous research findings that show integrating technology in education can enhance student motivation and the quality of learning. By focusing on developing E-Modules using the ADDIE approach, this study further strengthens the connection between technology and learning (Dini et al., 2023; Uma'iyah et al., 2023). The experimental group shown an N-Gain of 63.16%, suggesting moderate effectiveness, based on the findings of both the pretest and posttest assessments, as well as the computation of N-Gain. The E-Module-deprived control group, on the other hand, managed just a 29.39% average N-Gain, proving that we were completely useless. The statistical significance of the improvement in students' metacognitive abilities after engaging in the e-module was also assessed using a t-test. A two-tailed significance rate (Sig. 2 tailed) of 0.00 was shown by the t-test results, which is lower than the common criterion of 0.05. This suggests that, in terms of enhancing students' metacognitive abilities, there was a notable distinction between classes that utilized e-modules and those that did not. There was a statistically significant difference in the cognitive performance of the experimental class and their non-e-module-using classmates.

The advantage of this research lies in the innovative and engaging approach to developing learning media through the ADDIE model. By considering the stages of Analysis, Design, Development, Implementation, and Evaluation, this study succeeded in creating an E-Module that enhances the quality of IPAS learning (Syaifulah & Diliarosta, 2023; Uma'iyah et al., 2023). The use of e-modules provides significant advantages for students' learning efforts, both within and outside the classroom. The integration of e-modules aims to enhance students' comprehension and proficiency in the subject matter discussed during classroom instruction, thereby facilitating ease of comprehension. The preliminary assessment, conducted through a pre-test, revealed low proficiency levels among students throughout the experimental as well as the control groups, indicative of their initial knowledge base. Subsequent to the intervention, wherein the experimental group engaged with the e-module, a notable elevation in post-test scores was observed compared to their counterparts in the control group who did not partake in e-module utilization. These findings collectively underscore the efficacy of employing E-Modules alongside 1stflip Flipbook in bolstering student learning motivation, particularly evidenced by the substantial enhancement in cognitive performance post-e-module engagement, indicative of heightened motivation for learning.

The implications of this research emphasize the importance of integrating technology into education to improve learning quality and academic performance. By utilizing innovative learning media, schools and teachers can create more engaging and effective learning experiences for students (Islam et al., 2022; A. A. Saputra et al., 2023). Additionally, the adoption of 1stflip Flipbook to construct IPAS learning E-Modules is known to enhance student learning results. Notably, the experimental group, beneficiaries of the E-Module intervention, exhibited significantly higher N-Gain values compared to their non-e-module utilizing counterparts in the control group. Despite these gains, continued innovation is required to increase the popularity of e-modules among students. Personable media, in particular, promotes increased comprehension and mastery of offered subjects among students, thereby accentuating its educational significance in material distribution, offering flexibility and accessibility for students (Dewi et al., 2022).

However, it's worth noting that the widespread availability of digital devices and internet connection, whether at home or at school, could pose challenges for some students in accessing interactive e-module comfortably, potentially resulting in learning disparities (Afzal et al., 2023; Dewi et al., 2022).

Moreover, this study primarily focuses on the short-term effects of utilizing playful e-module. More research is needed to fully explore the long-term effects on academic performance and student motivation. In conclusion, the combination of E-Module teaching materials with 1stflip Flipbook has been empirically demonstrated to enhance the levels of IPAS academic achievement in elementary school settings, manifesting in augmented motivation and improved student learning outcomes. This underscores the pivotal role of E-Modules as a valuable educational tool for enhancing the overall quality of learning in elementary school contexts (S. N. Putri et al., 2023; Ramadhani & Andriani, 2024). Future researchers are encouraged to conduct further studies with more representative samples, expand the scope of learning materials, and integrate user feedback to continually improve the quality of learning media. By continuously developing and refining the E-Module model, future research can make a more substantial contribution to the field of education.

4. CONCLUSION

This research underscores the considerable positive influence of utilizing E-Module teaching materials supported by 1stflip Flipbook in elementary school IPAS education. The incorporation of technology, exemplified by E-Modules and 1stflip Flipbook, serves to elevate student learning motivation, enhance learning standards, and improve student learning outcomes. Assessment conducted by media, material, and linguistic experts affirmed the high quality of the produced E-Module, while hypothesis testing corroborated the efficacy of utilizing this technology in augmenting students' academic performance. Hence, the advancement and integration of technology within educational frameworks emerge as pivotal strategies for continually enhancing the quality of learning and student academic achievements.

5. REFERENCES

- Afzal, A., Khan, S., Daud, S., Ahmad, Z., & Butt, A. (2023). Addressing the Digital Divide: Access and Use of Technology in Education. *Journal of Social Sciences Review*, 3(2), 883–895. <https://doi.org/10.54183/jssr.v3i2.326>.
- Amini, R., & Usmeldi. (2022). Developing the Interactive e-Module Based on Integrated Learning for Primary School Students. *International Journal of Information and Education Technology*, 12(4), 272–279. <https://doi.org/10.18178/ijiet.2022.12.4.1615>.
- Anggraeni, D. R., Elmunsyah, H., & Handayani, A. N. (2019). Pengembangan modul pembelajaran fuzzy pada mata kuliah Sistem Cerdas untuk mahasiswa S1 Pendidikan Teknik Elektro Universitas Negeri Malang. *TEKNO*, 29(1), 26. <https://doi.org/10.17977/um034v29i1p26-40>.
- Basna, N., & Zulherman. (2023). Pengembangan E-Book Berbantuan Flip PDF Corporate Edition Pada Materi Gaya Dan Energi Untuk Siswa Kelas IV Sekolah Dasar. *Research and Development Journal Of Education*, 9(2), 666–673. <https://doi.org/10.30998/rdje.v9i2.18367>.
- Bisri, M. A., Wintarti, A., & Fiangga, S. (2023). The Development of a Flibook-Based Interactive E-Module to Facilitate Sequences and Series Learning Process for 10th-Grade. *MathEdunesa*, 12(1), 194–206. <https://doi.org/10.26740/mathedunesa>.
- Bogiannidis, N., Southcott, J., & Gindidis, M. (2023). An exploration of the possible educational opportunities and the challenges at the intersection of the physical and digital worlds occupied by 10–14 year-old students. *Smart Learning Environments*, 10(1), 26. <https://doi.org/10.1186/s40561>.
- Charland, P., Deslandes Martineau, M., Gadais, T., Arvisais, O., Turgeon, N., Vinuesa, V., & Cyr, S. (2021). Curriculum response to the crisis. *Prospects*, 51(1–3), 313–330. <https://doi.org/10.1007/s11125>.
- Chugh, R., Turnbull, D., Cowling, M. A., Vanderburg, R., & Vanderburg, M. A. (2023). Implementing educational technology in Higher Education Institutions: A review of technologies, stakeholder perceptions, frameworks and metrics. *Education and Information Technologies*, 28(12), 16403–16429. <https://doi.org/10.1007/s10639-023-11846-x>.
- Dewi, C. A., Awaliyah, N., Fitriana, N., Darmayani, S., Setiawan, J., & Irwanto, I. (2022). Using Android-Based E-Module to Improve Students' Digital Literacy on Chemical Bonding. *International Journal of Interactive Mobile Technologies*, 16(22). <https://www.researchgate.net/profile/Irwanto-Irwanto>.
- Dini, A., Rahmatan, H., Muhibbudin, N., C., & Safrida. (2023). Application of the E-module combined with the Guided Inquiry Learning Model to Increase Student Motivation and Learning Outcomes on the Structure and Function of Plant Tissues. *Jurnal Penelitian Pendidikan IPA*, 9(6), 4768–4776. <https://doi.org/10.29303/jppipa.v9i6.3857>.
- El-Hamamsy, L., Monnier, E.-C., Avry, S., Chevalier, M., Bruno, B., Dehler Zufferey, J., & Mondada, F. (2024). Modelling the sustainability of a primary school digital education curricular reform and professional development program. *Education and Information Technologies*, 29(3), 2857–2904.

- <https://doi.org/10.1007/s10639-023-11653-4>.
- Ferdaus, S. A., & Novita, D. (2023). The Implementation of The Merdeka Curriculum in English Subject at A Vocational High School in Indonesia. *Briliant: Jurnal Riset Dan Konseptual*, 8(2), 297. <https://doi.org/10.28926/briliant.v8i2.1201>.
- Gaviria, J.-L. (2022). Education: A Compulsory Right? A Fundamental Tension Within A Fundamental Right. *British Journal of Educational Studies*, 70(6), 653–675. <https://doi.org/10.1080/00071005.2021>.
- Handayani, T., Soewartoyo, S., & Sukarno, M. (2018). Implementation of the Compulsory Nine-Year Basic Education Program: Opportunities and Constraints at Household and Community Level. *Journal of Indonesian Social Sciences and Humanities*, 2, 191–202. <https://doi.org/10.14203/jissh.v2i0.32>.
- Handiar, A., & Zulherman. (2023). FlipHTML5 Assisted E-Book to Improving Elementary School Students' Motivation. *International Journal of Elementary Education*, 7(3), 375–381. <https://doi.org/10.23887/ijee>.
- Hapsari, G. P. P., & Zulherman, Z. (2021). Pengembangan media video animasi berbasis aplikasi canva untuk meningkatkan motivasi dan prestasi belajar siswa. *Jurnal Basicedu*, 5(4), 2384–2394. <https://doi.org/10.31004/basicedu.v5i4.1237>.
- Hardiansyah, F., & Mulyadi. (2022). Improve Science Learning Outcomes for Elementary School Students Through The Development of Flipbook Media . *Jurnal Penelitian Pendidikan IPA*, 8(6 SE-Articles "Regular Issue"), 3069–3077. <https://doi.org/10.29303/jppipa.v8i6.2413>.
- Hirald, A., & Zulherman. (2023). A Kvisoft Flipbook Maker-Assisted E-Book to Increase Students' Interest In Elementary Schools. *Jurnal Ilmiah Sekolah Dasar*, 7(3). <https://ejournal.undiksha.ac.id/index.php/JISD>.
- Innaya Putri, R., Sumardi, & Karmila, N. (2022). Pengembangan Media Pembelajaran Komik Digital Berbasis Flipbook Tema 6 Subtema 1 Aku Dan Cita-Citaku. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, 8(2), 2098–2107. <https://doi.org/10.36989/didaktik.v8i2.503>.
- Islam, M. K., Sarker, M. F. H., & Islam, M. S. (2022). Promoting student-centred blended learning in higher education: A model. *E-Learning and Digital Media*, 19(1), 36–54. <https://doi.org/10.1177/20427530211027721>.
- Markelj, J., & Sundvall, S. (2023). Digital pedagogies post-COVID-19: The future of teaching with/in new technologies. *Convergence: The International Journal of Research into New Media Technologies*, 29(1), 3–10. <https://doi.org/10.1177/13548565231155077>.
- Maryanti, R., & Nandiyanto, A. B. D. (2021). Curriculum Development in Science Education in Vocational School. *ASEAN Journal of Science and Engineering Education*, 1(3), 151–156. <https://doi.org/10.17509/ajsee.v1i3.38429>.
- Nita, F. R., Astiandani, F. R., Wicaksono, A. L., & Janah, K. E. N. (2022). Using ADDIE model to develop learning materials of the test of English proficiency in Edmodo. *EnJourMe (English Journal of Merdeka) : Culture, Language, and Teaching of English*, 7(1), 62–77. <https://doi.org/10.26905/enjourme.v7i1.7036>.
- Nugroho, M. R., Sumardjoko, B., & Fathoni, A. (2023). Development of Science Learning E-Modules Using the Flip PDF Application. *Jurnal Paedagogy*, 10(2), 525. <https://doi.org/10.33394/jp.v10i2.7130>.
- Oktaviani, W., Solang, M., & Latjompoh, M. (2023). Development of Flipbook-Type E-Modules Based on Stunting Case Studies to Improve Concept Mastery on Digestive System Materials. *Jurnal Penelitian Pendidikan IPA*, 9(5), 2580–2589. <https://doi.org/10.29303/jppipa.v9i5.3352>.
- Pandita, A., & Kiran, R. (2023). The Technology Interface and Student Engagement Are Significant Stimuli in Sustainable Student Satisfaction. *Sustainability*, 15(10), 7923. <https://doi.org/10.3390/su1510>.
- Pappa, C. I., Georgiou, D., & Pittich, D. (2024). Technology education in primary schools: addressing teachers' perceptions, perceived barriers, and needs. *International Journal of Technology and Design Education*, 34(2), 485–503. <https://doi.org/10.1007/s10798-023-09828-8>.
- Penuel, W. R., Allen, A.-R., Deverel-Rico, C., Singleton, C., & Pazera, C. (2023). How Teachers' Knowledge of Curriculum Supports Partnering with Students in Their Science Learning. *Journal of Science Teacher Education*, 34(8), 861–882. <https://doi.org/10.1080/1046560X.2023.2167508>.
- Perdana, M. A., Wibowo, D. E., & Budiarto, M. K. (2021). Digitalization of learning media through digital book development using the flipbook application. *Jurnal Pendidikan Dan Pengajaran*, 54, 263–272. <https://doi.org/10.23887/jpp.v54i2>.
- Prasetyo, D., & Zulherman, Z. (2023). Pengembangan E-Book Berbantuan Flip Pdf Profesional Pada Materi Tumbuhan dan Hewan Untuk Siswa Kelas IV Sekolah Dasar. *Jurnal Educatio FKIP UNMA*, 9(4), 1709–1718. <https://doi.org/10.31949/educatio.v9i4.5826>.
- Putri, N. L. P. S. U., & Jayanta, I. N. L. (2023). Digital Practicum Module in Integrated Science for Elementary School Subjects. *Journal of Education Technology*, 7(2), 343–350. <https://doi.org/10.23887/jet.v7i2.61398>.

- Putri, S. N., Agung, A. A. G., & Suartama, I. K. (2023). E-module with the Borg and Gall Model with a Contextual Approach to Thematic Learning. *Journal for Lesson and Learning Studies*, 6(1), 27–34. <https://doi.org/10.23887/jlls.v6i1.5748>.
- Rahim, F. R. (2022). Interactive Learning Media For Critical And Creative Thinking Skills Development. *Pillar Of Physics Education*, 15(4), 235. <https://doi.org/10.24036/14085171074>.
- Ramadhani, A. A., & Andriani, A. E. (2024). Development of Interactive E-Module Based on Inquiry Learning to Enhance IPAS Learning Outcomes for Students Public Elementary School. *Jurnal Pijar Mipa*, 19(2), 209–215. <https://doi.org/10.29303/jpm.v19i2.6587>.
- Rifa'i, A. A. (2019). Education Policy for Equalization: An Analysis of Higher Education Opportunities in Indonesia. *Edugama: Jurnal Kependidikan Dan Sosial Keagamaan*, 5(2), 66–84. <https://doi.org/10.32923/edugama.v5i2.970>.
- Rizkiana, N. Y., & Zulherman, Z. (2023). E-Book Berbantuan Flipsnack Untuk Siswa Kelas IV di Sekolah Dasar. *Jurnal Educatio FKIP UNMA*, 9(3), 1430–1436. <https://doi.org/10.31949/educatio.v9i3.5500>.
- Roemintoyo, R., & Budiarto, M. K. (2021). Flipbook as Innovation of Digital Learning Media: Preparing Education for Facing and Facilitating 21st Century Learning. *Journal of Education Technology*, 5(1), 8. <https://doi.org/10.23887/jet.v5i1.32362>.
- Saputra, A. A., Mercuriani, I. S., & Rini, D. P. (2023). Android-based e-module of excretory system to improve high school students. *Engagement*, 020022. <https://doi.org/10.1063/5.0106505>.
- Saputra, I. G. P. E., Harnipa, H., & Akhfah, M. (2021). Development of Science Learning Device Oriented Guided Inquiry with Virtual Laboratory to Train Science Process Skills of Junior High School Students in Kendari. *Jurnal Penelitian & Pengembangan Pendidikan Fisika*, 7(1), 13–22. <https://doi.org/10.21009/1.07102>.
- Sun, Y. (2024). Exploring the Construction of Curriculum System of Theater and Film Studies Based on ADDIE Model. *Applied Mathematics and Nonlinear Sciences*, 9(1). <https://doi.org/10.2478/amns.2023.1.00208>.
- Suratnu, R. (2023). The Adoption Of The Addie Model In Designing An Instructional Module: The Case Of Malay Language Remove Students. *IJJET (International Journal of Indonesian Education and Teaching)*, 7(2), 262–270. <https://doi.org/10.24071/ijjet.v7i2.3521>.
- Syaifullah, R., & Diliarosta, S. (2023). Development Of E-Module Based On Ethnoscience Approaches On Additive And Addictive Substance For Junior High School. *Universe*, 4(1), 38–46. <https://doi.org/10.24036/universe.v4i1.234>.
- Uma'iyah, N., Wahyuni, S., & Nuha, U. (2023). Development of E-Modules Based On Mobile Learning Applications to Improve Students' Critical Thinking Skills in Science Subject. *JPPS (Jurnal Penelitian Pendidikan Sains)*, 12(2), 122–137. <https://doi.org/10.26740/jpps.v12n2.p122-137>.
- Yulhendri, Y., Mardhotillah, N. I., Alisha, W. P., & Susanti, N. (2022). Analysis of Media Use and Learning Interaction to Improving Student Engagement. *Dinamika Pendidikan*, 17(1), 37–47. <https://doi.org/10.15294/dp.v17i1.35304>.
- Yuniarti, A., & Radia, E. H. (2021). Development of Comic Mathematics Teaching Materials on Flat-Building Material to Increase Reading Interest in Class IV Elementary School Students. *Journal of Education Technology*, 4(4), 415. <https://doi.org/10.23887/jet.v4i4.30034>.