

# Developing Canva-based Flipbook to Enhance Students' Motivation in Primary School

Titik Anggraeni<sup>1\*</sup>, Waris<sup>1</sup>, Fauzan Adhim<sup>1</sup>

<sup>1</sup>Post Graduate Program, Universitas PGRI Argopuro, Jember, Indonesia.

Received: May 17, 2025

Revised: July 03, 2025

Accepted: August 25, 2025

Published: August 31, 2025

Corresponding Author:

Titik Anggraeni

[titik.anggraeni24@gmail.com](mailto:titik.anggraeni24@gmail.com)

DOI: [10.29303/jppipa.v11i8.11376](https://doi.org/10.29303/jppipa.v11i8.11376)

© 2025 The Authors. This open access article is distributed under a (CC-BY License)



**Abstract:** This research aims at developing a Canva-based Flipbook with Solar System material as an alternative learning media to improve students' motivation at SD Negeri Pajarakan 02 Randuagung. This research used the Research and Development (R&D) method with ADDIE (Analysis, Design, Development, Implementation, and Evaluation). The steps of this study dealt with analyzing students' needs, designing Canva-based Flipbook, developing flipbooks with Canva, implementing the product, and evaluating. This research was carried out in April-May 2025 at SD Negeri Pajarakan 02 Randuagung with the research subject of 5<sup>th</sup> grade students. This study used observation and questionnaire. The results showed that validation in materials, graphics, and language was 89.6%, and met valid criteria, teacher and students' perception scoring was 95%, and students' motivational questionnaire was 84.3% on average, and it was stated to be highly motivated. In short, Canva-based flipbook has positively improved students' learning motivation on the Solar System in 5<sup>th</sup> grade at SD Negeri Pajarakan 02 Randuagung.

**Keywords:** Canva-based flipbook; Students' motivation, Students' participation

## Introduction

Education is a very significant aspect for humans in realizing empowered and quality human resources (Alika & Radia, 2021). Education these days has been growing rapidly as the presence of ICT (Iskandar et al., 2023; Taam et al., 2024). In addition, the development of ICT has brought significant changes in various aspects of human life, including human life in the world of education, not least in the world of education (Kadiyono & Pardosi, 2023; Krassadaki et al., 2022; Harmawati et al., 2024). This demands a transformation in the learning paradigm, methods, and learning media in accordance with 21st century learning (Muhajang & Suryanti, 2024; Sugihartini et al., 2025). It requires students to master 21st century skills (Dewi & Setyasto, 2024; Nazifah & Asrizal, 2022).

Further, integrating ICT in educational practices has a crucial role in the 21st century learning process (Ramaila & Molwele, 2022; Yang & Dong, 2024). Ernest et al. (2024) stated that teaching-learning in this era must effectively integrate ICT into classroom activities. In this case, the use of technology can provide many variations of creative, interesting, innovative, and interactive learning media (Hidayatullah et al., 2023). The utilization of digital-based media not only makes it easier for teachers to deliver material content but can also foster student interest and motivation in learning (Grgic, 2023; Fajri et al., 2024).

Moreover, technological integration in education poses one of the fundamental elements in current educational initiatives (Bakari & Ali, 2023; O'Flaherty et al., 2024). In this context, teachers in this era should be able to use and integrate interactive-digital media into classroom learning (Pheeraphan, 2013; Harmawati et al., 2024). It helps students to promote their active and

## How to Cite:

Anggraeni, T., Waris, & Adhim, A. (2025). Developing Canva-based Flipbook to Enhance Students' Motivation in Primary School. *Jurnal Penelitian Pendidikan IPA*, 11(8), 1018-1025. <https://doi.org/10.29303/jppipa.v11i8.11376>

effective learning activities (Ismail et al., 2024). According to Afifa et al. (2024), interactive-digital media refers to tools to help both teachers and students in their classrooms activities to achieve educational goals. In addition, these learning media play a significant role in educational practices since these encourage teachers in their classroom instruction, deliver materials into effective ways, and spark students focus, interest, and understanding (Pratama et al., 2024).

However, there have been issues regarding educational practices in elementary school, especially in teaching-learning IPAS to elementary school students. There are still many teachers who do not optimally utilize the potential of ICT based media into their classrooms. In this case, the lack of teacher creativity and innovation in developing learning, especially the use of digital teaching media, makes the teaching-learning process tend to be monotonous and boring for students (Gunawan & Laura, 2025). According to Maulyda et al., (2025), teachers must have solid technological skills in this digital age to facilitate adequate and relevant student learning.

In this context, the researcher found similar problems at SD Negeri Pajarakan 02 Randuagung. Based on observations, there have been teachers who do not use inappropriate media into IPAS learning. In this case, IPAS is considered as difficult subjects to learn by the elementary school students (Dewi & Setyasto, 2024). In addition, these difficulties arise due to ineffective use of media in classroom activities (Holisoh et al., 2023). Most teachers at SD Negeri Pajarakan 02 Randuagung deal with printed media rather than using digital media to promote students' interest and outcomes. This is in line with (Landina & Agustiana, 2022) that limited use of digital media in IPAS can lead to the lack of students motivation and outcomes.

In addition, another problem causing the students' low motivation is teachers' competency in utilizing digital-assisted learning media (Dewi & Setyasto, 2024). The less and ineffective learning media promote inactive learning process (Nisyaa & Widodo, 2025). The lack of interactivity and active involvement used in digital media can reduce students' interest and motivation (Munna & Kalam, 2021). As a result of this, the achievement of learning objectives cannot be achieved optimally. Therefore, there is a need for interactive-digital learning media that can attract students' interest and increase their active participation (Putri & Sumanto, 2023).

This is in line with Fasa et al. (2023) who revealed that learning in the 21st century encourages changes in conventional learning systems to technology-based learning. In this case, the use of digital learning media is one of the effective alternatives that can support and improve the quality of learning (Mahardinata, 2024).

One of the digital learning media utilizations that can be chosen by teachers to support learning is a flipbook that can be created using Canva. Canva allows users to create presentations, posters, infographics, and other visual content (Bunjaku et al., 2024).

In this context, Canva-based flipbook is one of the learning media that is relevant to 21st century learning. Canva-based flipbooks are one of the digital-based learning media that can visualize learning materials in an interactive and interesting way (Silalahi & Budiono, 2023). In addition, Canva-based flipbook allows learning materials and content to increase student participation and understanding (Pigai & Yulianto, 2024). Canva-based flipbooks were declared valid, practical, and effective in improving student learning outcomes (Yuningsi et al., 2024). Dewi et al. (2024) added that Canva-based flipbook effectively increases the students' interest and motivation during the classroom activities.

Previous studies have shown that Canva-based flipbooks have proven effectively to improve students' interest and motivation. Still, these studies leave gaps in developing Canva-based flipbooks dealing with materials taught in grade V. To address this gap, further, the researcher deals with developing Canva-based flipbook focused on the Solar System taught in phase C at SD Negeri Pajarakan 02 Randuagung. Furthermore, based on the above background, this study aims at developing Canva-based flipbooks to improve students' motivation in Solar System materials to grade V students at SD Negeri Pajarakan 02 Randuagung.

## Method

This study used Research and Development (R&D) method with with the ADDIE model (Waruwu, 2024). This included systematically five stages: analyzing, designing, developing, implementing, and evaluating (Sugiyono, 2019). Dick et al. (1996) developed the ADDIE Model for conceptualizing learning systems. This model can be used for various types of development products in learning activities such as learning strategies, media, teaching materials, etc.

In this context, the researcher dealt with developing Canva-based flipbook to improve students' motivation in Solar System at SD Negeri Pajarakan 02 Randuagung. The stages of the ADDIE model used in this study can be shown in Figure 1.

The analyzing stage was conducted to understand the students' needs and characteristics, curriculum, and existing technology. In designing, the researcher started with designing the product framework. This stage was followed up with the developing stage. This involved integrating related materials and content into the product media to use into classroom. Once the product was developed, the product was then validated by

expert validators dealing with materials, graphics, and language.

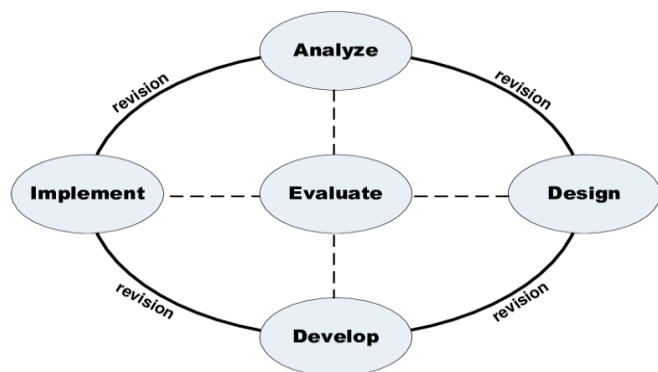


Figure 1. Stages of ADDIE model

Table 1. Validation Experts

Validators	Percentage (%)	Criteria
Materials expert	%	Valid/very valid
Graphic expert	%	Valid/very valid
Language expert	%	Valid/very valid

This study dealt with quantitative study using validation, observation, and questionnaire in data collection methods. In addition, product feasibility, practicality, and effectiveness of Canva-based flipbook were data analysis in this study.

## Result and Discussion

This study aims at developing interactive learning media of Canva-based flipbook to increase 5th grade students' motivation at SD Negeri Pajarakan 02 Randuagung in the subject of IPAS dealing with Solar System.

### Analysing

The initial stage began with identifying students' needs, characteristics, and problems in the subject of IPAS at 5<sup>th</sup> grade. In this context, these stages include direct observation and interview with the 5<sup>th</sup> grade teacher at SD Negeri Pajarakan 02 Randuagung.

Based on the results of observations and interviews, it was found that the availability of interactive learning media was insufficient. Teacher mostly used conventional learning media into subject of IPAS in the classroom. This situation led to the lack of students' interest and motivation in the classroom activities. This is in with Bintoro et al. (2024) that the lack of learning media used in the teaching-learning process can affect the students' motivation during the learning process. Therefore, considering this condition, developing interactive media using Canva-based flipbooks is significant to improve students' motivation in learning Solar System at SD Negeri Pajarakan 02 Randuagung.

### Designing

In this stage, the Canva-based flipbook was designed to improve the students' motivation in learning Solar System at SD Negeri Pajarakan 02 Randuagung. This Canva-based flipbook was designed based on the students' needs, characteristics, and problems in learning Solar System in IPAS. This is in line with Pertiwi et al. (2023) that developing media used to promote students' learning should meet the students needs. In addition, his designing stage consisted of using appropriate text, images, and videos regarding the materials and contents of Solar System in IPAS.



Figure 2. Cover design of canva-based flipbook

### Developing

The researcher designed media content by preparing concise and easy-to-understand materials and content for 5th grade students at SD Negeri Pajarakan 02. In addition, this stage included collecting and creating images, videos, developing quizzes or game elements, and developing the concept of "Captain Comet's Adventure" to help students understand the Solar System. Further, the researcher created a visual design for the flipbook in Canva, including layout, color selection, then it was linked to Heyzine equipped with supporting elements such as game elements, navigation buttons, and easy-to-use features for 5th grade students.

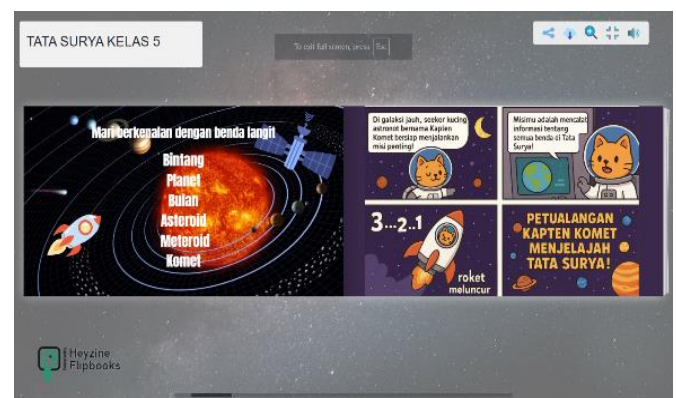


Figure 3. Display of kaptan komet adventure



Figure 4. Display of instruction



Figure 5. Display of galaxy badges collected after completing all missions

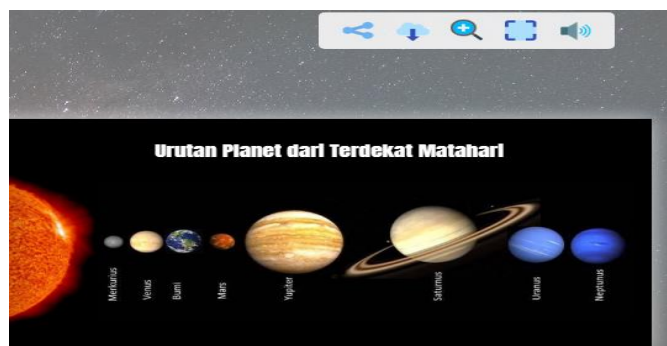


Figure 6. Display of solar system materials

Moreover, in this stage, the product media was validated by the experts to examine the Canva-based flipbook developed had been valid or not. The following are the results of validation by the experts.

Table 2. Validation by Experts

Validators	Percentage (%)	Criteria
Materials expert	92%	Very Valid
Graphic expert	86%	Valid
Language expert	90%	Very Valid
Average	89.6%	Valid

Based on the data presented in table 2, it showed that the validity percentage of Canva-based flipbook media was 89.6%, and it was said to be valid. In this case, it showed that developing Canva-based flipbook for learning Solar System can increase the learning

motivation of the 5<sup>th</sup> grade students at SD Negeri Pajarakan 02 Randuagung.

Implementation

This implementation stage was conducted at 5<sup>th</sup> grade students of SD Negeri Pajarakan 02 Randuagung. During this phase, these students were provided with the teaching-learning process assisted by using Canva-based flipbook media in learning Solar System in IPAS. This is in line with Arni et al. (2025) stated that the implementation stage is carried out by applying the flipbook in the learning process to measure its effectiveness. Based on the observation during the implementation, the students were engaged in the teaching-learning process assisted by Canva-based flipbook. Further, the researcher conducted a questionnaire dealing with the practicality of Canva-based flipbook to increase the students' motivation in learning Solar System taught at 5<sup>th</sup> grade students of SD Negeri Pajarakan 02 Randuagung.

Table 3. Teacher-Students Perceptions to Canva-based Flipbook

Respondents	Percentage (%)	Criteria
Teacher	100%	Very positive
Students	90%	Very positive
Average	95%	Very positive

Based on table 2 above, it indicated that both teacher and students had very positive perceptions on the use of Canva-based flipbook to improve the students' motivation in learning Solar System in IPAS. It means that the practicality of Canva-based flipbook is said to be positive. In this case, it is in line with Dewi et al. (2024) that respondents' scoring responses above 75% indicated that Canva-based flipbook was very practical to use in teaching-learning process.

Evaluation

In this stage, the evaluation was carried out using a motivational questionnaire. In this case, this motivational questionnaire was to examine the students' motivation scale on the use of Canva-based flipbook to improve students' motivation in learning Solar System. The percentage of students' scores was as follows:

Table 4. Students' Learning Motivation

Indicators	Percentage (%)	Criteria
Learning interest	81%	Highly motivated
Focus and independence	86%	Highly motivated
Challenge and fun	86%	Highly motivated
Average	84.3%	Highly motivated

The table above showed that the average percentage of students' learning motivation towards the

practical use of Canva-based flipbook in learning Solar System in IPAS was 84.3% and it was categorized as highly motivated. It means that the use of Canva-based flipbook media in teaching Solar System can improve the students' learning motivation at 5<sup>th</sup> grade of SD Negeri Pajarakan 02 Randuagung. In addition, this results aligned with Dewi et al. (2024) and Arni et al. (2025) that Canva-based flipbook help students promote their learning motivation and learning outcomes.

In addition, during the implementation of Canva-based flipbook, the students were actively engaged in the classroom activities. Activities dealing with opening interactive pages, answering missions, and asking teachers showed good cognitive engagement (Rahmadani et al., 2023). It indicated that most students were highly motivated and interested in the use of media designed and supported by audiovisual elements and features interactive characters. This is in line with Umayah et al. (2023) that integrating technological media in education can help students be more interested in learning, media that contains video, audio, animation, provides a complete understanding to students.

This case, the principles of digital media-based learning allow for the creation of a fun learning experience for students, encourage active participation in learning, and be able to meet their learning needs. As stated by Azizah et al. (2025) that interactive learning media based on Canva has proven to be effective and feasible to be used to improve students' ability to find main ideas, facilitate the learning process, and increase students' learning motivation. Although the flipbook developed still has some technical limitations and shortcomings in the completeness of references, in general the validation results show that this medium is quite effective in the learning process with the potential for further improvement. In addition, this is in line with Susilo et al. (2025) that flipbooks has profoundly improved students' motivation, engagement, and understanding. The test results showed an increase in students' average scores and critical thinking skills.

The development of Canva-based flipbook learning media for Solar System material for class V (Phase C) was carried out through 5 stages of development in accordance with the ADDIE model (analysis, design, development, implementation, and evaluation). In general, the Canva-based flipbook learning media for Solar System material for class V (Phase C) that has been developed is quite effective in increasing student motivation and participation in the learning process. This is in line with Dewi et al. (2024), Setyorini et al. (2024), and Nainggolan et al. (2024) that Canva-based flipbook is effective in improving students' learning outcomes and is feasible and practical to use in IPAS. The results of the validation of the design, content, and language of the media showed that this medium is

feasible to use with some minor improvements as well as the potential for further improvement.

## Conclusion

The results showed that developing Canva-based flipbook has improved the students' learning motivation on the IPAS dealing with Solar System for 5<sup>th</sup> grade students at SD Negeri Pajarakan 02 Randuagung. In this case, the results showed that the development of Canva-based flipbook is said to be valid to improve the students' motivation in learning Solar System at 5<sup>th</sup> grade of SD Negeri Pajarakan 02 Randuagung. The validation results dealing with materials, graphics, and language was 89.6% on average. In addition, the results of both teacher and students' perception on the use of Canva-based flipbook was 95% on average, and it was perceived very positive. Lastly, the results of students' motivational questionnaire was 84,3% on average, and it was stated to be highly motivated. To sum up, the development of Canva-based flipbook in learning Solar System has positively improved the 5<sup>th</sup> grade students' motivation at SD Negeri Pajarakan 02 Randuagung.

## Acknowledgments

I would like to thank all parties including my students in SD Negeri Pajarakan 02 actively participating in this study.

## Author Contributions

W.: drafting, review, proofreading, methodology, data analysis, results, and discussion; F. A.: drafting, review, proofreading, results, and discussion.

## Funding

This study is funded by the researcher's funding and does not receive funding from the external parties.

## Conflicts of Interest

The authors declare no conflict of interest.

## References

- Afifa, K., & Astuti, T. (2024). The Effect of Digital Learning Media on Motivation and Learning Outcomes of IPAS. *Jurnal Penelitian Pendidikan IPA*, 10(6), 3155-3165. <https://doi.org/10.29303/jppipa.v10i6.7513>
- Alika, O., & Radia, E. H. (2021). Development of Learning Media Based on Cross Puzzle Game in Science Learning to Improve Learning Outcomes. *Jurnal Penelitian Pendidikan IPA*, 7(2), 173-177. <https://doi.org/10.29303/jppipa.v7i2.667>
- Arni, Y., Feliz, L. A., Sari, D. P., & Jesika, I. (2025). Development of Digital Flipbook-Based Learning Media on Norms in Everyday Life in Class IV SD 89 Palembang. *Invention: Journal Research and Education Studies*, 32-40. Retrieved from

- <https://www.pusdikra-publishing.com/index.php/jres/article/view/2404>
- Azizah, N. N., & Ratnaningrum, I. (2025). Canva Based Interactive Learning Media to Improve the Ability to Find the Main Idea of Grade IV Elementary School Students. *International Journal of Elementary Education*, 9(1), 68–78. <https://doi.org/10.23887/ijee.v1i1.89778>
- Bakari, A. D., & Ali, M. M. (2023). Introduction of ICT subject in Zanzibar primary education: Challenges and opportunities. *Social Sciences and Humanities Open*, 8(1), 100522. <https://doi.org/10.1016/j.ssaho.2023.100522>
- Bintoro, W. P., Triwahyuni, E., & Emyus, A. Z. (2024). The Influence of Digital Learning Media Nearpod on The Motivation and Academic Achievement of Elementary School Students. *Journal of Education Technology*, 8(4), 654-661. <https://doi.org/10.23887/jet.v8i4.85613>
- Bunjaku, I. B., Gagica, S., & Kent, M. D. (2024). Integrating Digital Tools in Engineering Education: Social Impact of Technological Integration. *IFAC-PapersOnLine*, 58(3), 118-122. <https://doi.org/10.1016/j.ifacol.2024.07.136>
- Dewi, I. M., & Setyasto, N. (2024). Pengembangan Media Pembelajaran Digital Flipbook Berbasis Canva Pada Mata Pelajaran IPAS Materi Sistem Pernapasan Kelas V di Sekolah Dasar. *Jurnal Penelitian Pendidikan IPA*, 10(5), 2300-2308. <https://doi.org/10.29303/jppipa.v10i5.7030>
- Ernest, I. Z., & Suyanta, S. (2024). Profile of ICT Literacy in Science Learning Assisted by Google-Sites for Junior High Students. *Jurnal Penelitian Pendidikan IPA*, 10(2), 879-885. <https://doi.org/10.29303/jppipa.v10i2.5741>
- Fajri, N., Sriyati, S., & Rochintaniawati, D. (2024). Global Research Trends of Digital Learning Media in Science Education: A Bibliometric Analysis. *Jurnal Penelitian Pendidikan IPA*, 10(1), 1-11. <https://doi.org/10.29303/jppipa.v10i1.6248>
- Fasa, I. A., & Purwanti, K. L. (2023). Pengembangan media pembelajaran berbasis website mata pelajaran matematika untuk siswa madrasah ibtidaiyah. *Sekolah Dasar: Kajian Teori Dan Praktik Pendidikan*, 32(1), 15-24. Retrieved from <https://journal-fip.um.ac.id/index.php/sd/article/view/782>
- Grgic, M. (2023). Competencies and beliefs of Swiss teachers with regard to the modular curriculum 'Media and ICT.' *International Journal of Educational Research Open*, 5(March), 100288. <https://doi.org/10.1016/j.ijedro.2023.100288>
- Gunawan, H., & Laura, A. (2025). A The Strategic Role of Teachers and Innovation in Learning Media in Early Childhood Education. *Kiddie: Early Childhood Education and Care Journal*, 2(2), 105-114. Retrieved from <http://www.e-journal.staimuttaqien.ac.id/index.php/kiddie/article/download/2709/366>
- Harmawati, Y., Sapriya, Abdulkarim, A., Bestari, P., & Sari, B. I. (2024). Data of digital literacy level measurement of Indonesian students: Based on the components of ability to use media, advanced use of digital media, managing digital learning platforms, and ethics and safety in the use of digital media. *Data in Brief*, 54. <https://doi.org/10.1016/j.dib.2024.110397>
- Hidayatullah, A., Artharina, F. P., Sumarno, S., & Rumiarcis, E. (2023). Penggunaan Aplikasi Canva pada Pembelajaran di Sekolah Dasar. *Jurnal Educatio Fkip Unma*, 9(2), 943-947. <https://doi.org/10.31949/educatio.v9i2.4823>
- Holisoh, A., Setiani, H., Firdaus, H., Nulhakim, L., & Ruhiat, Y. (2023). Analysis of the Need for Canva-Based Electronic Modules to Improve Vocational Learning Outcomes. *Jurnal Penelitian Pendidikan IPA*, 9(9), 6772-6779. <https://doi.org/10.29303/jppipa.v9i9.4514>
- Iskandar, D., Rahayu, I., Ulum, U. A., Hakim, L., & Ruhya, Y. (2023). The Utilization of 3D Technology in Mathematics Learning. *Jurnal Penelitian Pendidikan IPA*, 9(8), 6774-6777. <https://doi.org/10.29303/jppipa.v9i8.4284>
- Ismail, I. A., Jhora, F. U., Qadriati, Q., & Insani, M. (2024). Enhancing Science Learning Activities through the Implementation of Discovery Learning and Teaching at the Right Level Method. *Jurnal Penelitian Pendidikan IPA*, 10(4), 1886-1895. <https://doi.org/10.29303/jppipa.v10i4.7359>
- Kadiyono, A. L., & Pardosi, A. (2023). Readiness to Adopt New Technology: The Role of Psychological Capital and Technology Readiness. *Jurnal Penelitian Pendidikan IPA*, 9(SpecialIssue), 1032-1040. <https://doi.org/10.29303/jppipa.v9ispecialissue.6552>
- Krassadaki, E., Tsafarakis, S., Kapenis, V., & Matsatsinis, N. (2022). The use of ICT during lockdown in higher education and the effects on university instructors. *Heliyon*, 8(11), e11214. <https://doi.org/10.1016/j.heliyon.2022.e11214>
- Landina, I. A. P. L., & Agustiana, I. G. A. T. (2022). Meningkatkan Berpikir Kritis Siswa melalui Media Pembelajaran Flipbook berbasis Kasus pada Muatan IPA Kelas V SD. *Mimbar Ilmu*, 27(3), 443-452. <https://doi.org/10.23887/mi.v27i3.52555>
- Mahardinata, L. T., Abadi, I. B. G. S., & Ganing, N. N. (2024). Media Flipbook Berbasis Discovery Learning Muatan IPAS Materi Daerahku

- Kebanggaanku Siswa Kelas V SD. *Jurnal Media Dan Teknologi Pendidikan*, 4(2), 238-249. <https://doi.org/10.23887/jmt.v4i2.78073>
- Maulda, M. A., Sugiman, Wuryandani, W., Sulistyani, N., & Annizar, A. M. (2025). Investigating the role of digital capabilities on the relationship between teacher readiness and teacher skills using augmented reality media in elementary schools: A mediation and moderation analysis. *Social Sciences and Humanities Open*, 11(February), 101411. <https://doi.org/10.1016/j.ssaho.2025.101411>
- Muhajang, T., & Suryanti, Y. (2024). 21st Century Learning through The Stages of The Teaching at The Right Level Approach for Grade IV Students of Integrated Islamic. *Primaryedu: Journal of Elementary Education*, 8(1), 93-106. <https://doi.org/10.22460/pej.v8i1.4609>
- Munna, A. S., & Kalam, M. A. (2021). Impact of Active Learning Strategy on the Student Engagement. *GNOSI: An Interdisciplinary Journal of Human Theory and Praxis*, 4(2), 96-114. Retrieved from <http://gnosijournal.com/index.php/gnosi/article/view/96>
- Nainggolan, M. C., & Rachman, F. (2024). Development of a canva-based heyzine flipbooks e-module as an alternative learning resources on pancasila education subjects. *Jurnal Pendidikan PKN (Pancasila Dan Kewarganegaraan)*, 5(2), 286-309. <https://doi.org/10.26418/jppkn.v5i2.82810>
- Nazifah, N., & Asrizal, A. (2022). Development of STEM Integrated Physics E-Modules to Improve 21st Century Skills of Students. *Jurnal Penelitian Pendidikan IPA*, 8(4), 2078-2084. <https://doi.org/10.29303/jppipa.v8i4.1820>
- Nisyaa, F., & Widodo, S. T. (2025). Development of Canva-Based Interactive Learning Media for Elementary School IPAS Learning. *Jurnal Penelitian Pendidikan IPA*, 11(1), 656-663. <https://doi.org/10.29303/jppipa.v11i1.8503>
- O'Flaherty, J., Lenihan, R., Young, A. M., & McCormack, O. (2024). Developing Micro-Teaching with a Focus on Core Practices: The Use of Approximations of Practice. *Education Sciences*, 14(1). <https://doi.org/10.3390/educsci14010035>
- Pertiwi, N. K. A. P., Wena, I. M., & Wibawa, K. A. (2023). An Analysis of Innovative Learning Media Development Needs Based on Realistic Mathematics Education. *Journal of Psychology and Instruction*, 7(2), 70-76. Retrieved from <https://ejournal.undiksha.ac.id/index.php/JoPaI/article/view/62720>
- Pheeraphan, N. (2013). Enhancement of the 21st Century Skills for Thai Higher Education by Integration of ICT in Classroom. *Procedia - Social and Behavioral Sciences*, 103, 365-373. <https://doi.org/10.1016/j.sbspro.2013.10.346>
- Pigai, F. Y. P., & Yulianto, S. (2024). Development of Flipbook Learning Media to Improve Learning Outcomes IPAS. *Jurnal Penelitian Pendidikan IPA*, 10(8), 5775-5781. <https://doi.org/10.29303/jppipa.v10i8.7937>
- Pratama, A. J., K, A., Maksum, H., & Wulansari, R. E. (2024). Developing Android App-Based Interactive Learning Media for Mechanical Engineering Basics: Enhancing Vocational School Student Learning Outcomes. *Jurnal Penelitian Pendidikan IPA*, 10(7), 4376-4387. <https://doi.org/10.29303/jppipa.v10i7.7567>
- Putri, T. A., & Sumanto, R. P. A. (2023). Application of Interactive Learning Media Assisted by Power Point in Children Aged 5-6 Years. *Jurnal Pendidikan Anak Usia Dini Undiksha*, 11(2), 238-245. <https://doi.org/10.23887/paud.v11i2.63800>
- Rahmadani, E., & i, B. (2023). Innovation of Flipbook Teaching Materials in Supporting Student Learning Independence. *Mimbar Sekolah Dasar*, 11(1), 176-189. <https://doi.org/10.53400/mimbar-sd.v11i1.61620>
- Ramaila, S., & Molwele, A. J. (2022). The Role of Technology Integration in the Development of 21st Century Skills and Competencies in Life Sciences Teaching and Learning. *International Journal of Higher Education*, 11(5), 9. <https://doi.org/10.5430/ijhe.v11n5p9>
- Setyorini, E., Sukarmin, S., & Harlita, H. (2024). Efektivitas Penggunaan Flipbook sebagai Media Pembelajaran Interaktif di SMA/SMK: Tinjauan Literatur. In *Proceeding Biology Education Conference: Biology, Science, Environmental, and Learning* (Vol. 21, No. 1, pp. 129-135). Retrieved from <https://jurnal.uns.ac.id/prosbi/article/download/97357/48226>
- Silalahi, R. B., & Budiono, H. (2023). Pengembangan bahan ajar flipbook berbasis web pada muatan IPA di sekolah dasar. *Journal of Education Research*, 4(3), 1341-1349. <https://doi.org/10.37985/jer.v4i3.414>
- Sugihartini, N., Elmunsyah, H., Nurhadi, D., & Rahmawati, Y. (2025). Innovative web-based microteaching model: To improve the teaching skills of prospective informatics teachers in vocational high schools. *Social Sciences and Humanities Open*, 11(February), 101344. <https://doi.org/10.1016/j.ssaho.2025.101344>
- Susilo, D. R., Wiyanarti, E., Mulyana, A., & Darmawan, W. (2025). Innovation in Digital based History Learning through Flipbooks for Elementary School Students in Lembang District. *PrimaryEdu: Journal of Primary Education*, 9(1), 16-24. <https://doi.org/10.22460/pej.v9i1.5321>

- Taam, A., Amar, A., Hmedna, B., Benabbes, K., Kaoutar, E. M., Daoudi, R., & Makrani, A. El. (2024). Exploration of the relationships between the information and communication technology (ICT) and the education system in Morocco. *Scientific African*, 26(November), e02447. <https://doi.org/10.1016/j.sciaf.2024.e02447>
- Umayah, U., Winandika, G., Azhari, D., & Nofiani, D. (2023). Development of soft skill-based interactive media on thematic learning. *Alifmatika: Jurnal Pendidikan Dan Pembelajaran Matematika*, 5(2), 156-170. <https://doi.org/10.35316/alifmatika.2023.v5i2.156-170>
- Waruwu, M. (2024). Metode Penelitian dan Pengembangan (R&D): Konsep, Jenis, Tahapan dan Kelebihan. *Jurnal Ilmiah Profesi Pendidikan*, 9(2), 1220-1230. <https://doi.org/10.29303/jipp.v9i2.2141>
- Yang, T., & Dong, C. (2024). What influences teachers' implementation of ICT in early childhood education? A qualitative exploration based on an ecological-TPACK framework. *Computers and Education Open*, 7(January), 100228. <https://doi.org/10.1016/j.caeo.2024.100228>
- Yuningsi, A., Wardiah, D., & Surtiyoni, E. (2024). Pengembangan Bahan Ajar Flipbook Berbasis Canva pada Mata Pelajaran IPA di Kelas V Sekolah Dasar. *Indonesian Research Journal on Education*, 4(2), 1124-1130. <https://doi.org/10.31004/irje.v4i2.607>