

**Education and Human Development Journal** Tahun 2023; Vol. 8 (2); ISSN. 2541-0156; e-SSN. 2599-0292; hal. 66-75 https://journal2.unusa.ac.id/index.php/EHDJ/index doi : 10.33086/ehdj.v8i2

# Developing Canva-Based Learning Media on Maps and Class Layout for Third Graders of Elementary School

Friendha Yuanta<sup>1</sup>, Diyas Age Larasati<sup>2</sup>

<sup>1,2</sup>,**Universitas Wijaya Kusuma Surabaya** <sup>1</sup>friendha@gmail.com, <sup>2</sup>larasati\_age@yahoo.co.id

**Abstract:** This study aimed to develop Canva-Based Learning Media to produce feasible and effective learning media products on Maps and Class Layout for third graders at SDN Dukuh Kupang V Surabaya. The study used the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). Data were collected using a questionnaire instrument and analyzed through validity tests conducted by media experts, content experts, the target audience, and pre-tests and post-tests for students. The results showed that the animated media is categorized as appropriate, with validity results of 90% from media experts, 92,5% from content experts, and 91.25% from participant tests. Furthermore, the pre-test and post-test results showed an 8% improvement, signifying its effectiveness as a learning medium for third graders at SDN Dukuh Kupang V Surabaya.

#### Keywords: Learning Media, Canva

Abstrak: Pengembangan media pembelajaran berbasis aplikasi *Canva* merupakan jenis penelitian pengembangan (*Research and Development*) yang bertujuan untuk menghasilkan produk berupa media pembelajaran berbasis aplikasi *Canva* yang layak dan efektif digunakan dalam materi Denah dan Peta kelas 3 di SDN Dukuh Kupang V Surabaya. Metode pengembangan menggunakan model ADDIE (*Analysis, Design, Development, Implementation, Evaluation*). Pengumpulan data menggunakan instrumen angket. Analisis data menggunakan uji validitas dari ahli media, ahli materi, audiens, serta *pretest* dan *posttest* siswa. Hasil dari penelitian pengembangan ini menunjukkan bahwa media animasi telah layak berdasarkan uji validitas dari ahli media diperoleh hasil 90%, ahli materi diperoleh hasil 92,5%, uji coba audiens 91.25%. Sedangkan hasil dari *pretest* dan *postest* meningkat sebesar 8% sehingga dinyatakan efektif sebagai media pembelajaran untuk siswa kelas 3 SDN Dukuh Kupang V Surabaya.

Kata kunci: Media Pembelajaran, Canva

# **INTRODUCTION**

The landscape of educational research has been dynamically evolving, with a significant focus on developing and implementing learning media for primary students. This area has garnered considerable attention due to its potential to enhance learning outcomes and engage young learners more effectively and meaningfully (Cruywagen, 2018). Recent studies have explored various forms of media, including digital platforms, interactive games, and multimedia content, to facilitate a more enriching and practical learning experience (Harianja et al., 2021; Herawati, 2022; Rodina, 2020; Rusilowati et al., 2022). These innovations in learning media are designed to cater to the diverse needs of primary students, accommodating different learning styles and paces. The integration of technology in education, mainly through these media, has shown promising results in improving student engagement, comprehension, and retention of information.

Instructional media indeed plays a vital role in enhancing teaching and learning. It is a valuable tool for delivering information effectively and addressing potential communication challenges between educators and students (Yuanta & Gultom, 2019). Educators must continually adapt and proficiently provide instruction through innovative strategies that engage and resonate with learners (Yuanta & Larasati, 2022). The current technological advancements profoundly

Submitted: 8 April 2023 Accepted: 12 Agustus 2023 Published: 30 September 2023

impact educational practices, particularly in instructional media. Modern instructional media is closely aligned with technological progress and can be harnessed to engage learners effectively. In this context, media deliver information and stimulate student learning (Firmansyah & Yuanta, 2022). Elementary schools typically provide various instructional media, both conventional and technology-based (Anggraeni, 2021; Solikah et al., 2022).

Multimedia learning has been shown to have a positive impact on primary education. Research has indicated that using multimedia in primary schools improves critical and creative thinking skills (Handayani et al., 2022; Sundapa, 2022). Furthermore, integrating offline multimedia has enhanced student learning outcomes (Kuron & Tompodung, 2020). Additionally, online interactive multimedia has been oriented towards higher-order thinking skills (HOTS) through e-learning, particularly in physics (Widyaningsih et al., 2020). Moreover, developing science learning multimedia based on science literacy has improved students' science literacy skills (Yuningsih et al., 2022). Interactive learning multimedia has also been found to enhance the learning motivation of elementary school students (Budiarto & Jazuli, 2021). These findings collectively suggest that multimedia integration in primary education can be instrumental in improving students' cognitive abilities and learning outcomes.

Despite the advancements in learning media for primary education, there remains a notable gap in the utilization of specific tools, such as Canva, as a medium for learning. Canva, known for its user-friendly design and a wide array of features, presents a unique opportunity to create engaging and visually appealing educational content. However, there is a need for more research exploring the full potential of Canva in the academic context, particularly for primary students. This gap highlights the need for further investigation into how Canva can be effectively integrated into learning media strategies to enhance educational experiences for young learners.

Canva for Education is a highly interactive and user-friendly digital tool designed to enhance the learning experience for primary students (Wilkinson et al., 2019). It provides a platform where educators can create engaging and visually appealing educational content, such as presentations, infographics, worksheets, and more, tailored specifically to younger students' needs and learning styles (Maiti & Priyaadharshini, 2022). This tool is particularly effective in primary education due to its simplicity and emphasis on visual learning, which aligns well with the developmental stage of primary-aged learners (Frumkina et al., 2020). Canva for Education offers a vast library of templates, images, and educational resources, making it easier for teachers to create diverse and inclusive learning materials that can captivate and stimulate the curiosity of young learners (Ahn & Lee, 2020). Educators can foster a more dynamic, creative, and interactive learning environment by integrating this tool into the classroom, significantly enhancing student engagement and learning outcomes in various subjects.

This research aims to develop and assess the impact of Canva-based learning media on the comprehension and engagement levels of third-grade students learning about maps and class layouts. By integrating Canva into the curriculum, this study seeks to enhance students' interest and understanding of these subjects, which are crucial for their cognitive and spatial skills development. This research contributes to educational technology by providing empirical evidence on the effectiveness of Canva as a learning tool in elementary education. It also offers practical insights for educators seeking innovative methods to engage young learners in subjects that require visual and spatial understanding. The findings of this study could pave the way for broader adoption of Canva and similar digital tools in educational settings, potentially transforming teaching methods and learning experiences.

The article is structured as follows: After the introduction, the next section reviews relevant literature on digital learning tools in elementary education, focusing on visual learning. This is followed by a detailed description of the methodology used to develop and implement the Canvabased learning media. The subsequent section presents the study's findings, analyzing the impact of the Canva-based approach on student engagement and comprehension. The article concludes with a discussion of the implications of these findings for educators and policymakers, along with suggestions for future research in this area.

#### METHOD

This study used the ADDIE research model of Analyze, Design, Develop, Implement, and Evaluate. The ADDIE model was selected due to its effectiveness and systematic approach to addressing issues related to instructional media from various learning sources (Nenohai, Nubatonis, & Samo, 2021). The ADDIE model also supports active participation from students during the learning process and challenges educators to be more creative in creating and producing viable and effective instructional media (Mohammed, Ali, & Obaid, 2022).

The ADDIE model consists of five stages: analysis, design, development, implementation, and evaluation. According to Putri, Abdurahman, Andrian, Angraini, & Effendi (2022) and Wiyana, Yuniawatika, Murti, & Waluyo (2022), the stages of the ADDIE development model are as follows:

- 1. Analysis Stage: This stage consists of activities such as analyzing the competencies expected of students and assessing the characteristics of students, including their learning capacity, existing knowledge, skills, attitudes, and related aspects.
- 2. Design Stage: The design stage follows a structured framework that involves identifying the intended audience (students), specifying the desired competencies (objectives), determining effective teaching strategies (methods), and establishing criteria for assessing subject matter mastery (assessment and evaluation). These elements represent the fundamental components of instructional design, addressing the critical considerations of students, objectives, methods, and evaluation.
- 3. Development Stage: In this stage, instructional materials are developed. This includes collecting instructional materials or content and creating animated graphics.
- 4. Implementation Stage: The development results are implemented in the instructional process to assess their impact on the quality of learning, including the effectiveness, attractiveness, and efficiency of the instructional materials.
- 5. Evaluation Stage: The evaluation stage involves formative and summative evaluations. Formative evaluation is conducted at each location to collect data used for improvements. In contrast, summative evaluation is performed at the end to assess its impact on student learning outcomes and the overall quality of instruction.

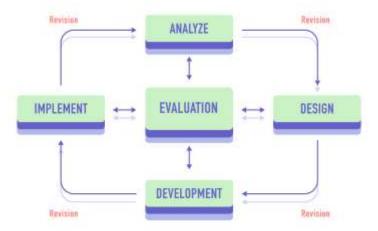


Figure 1. The ADDIE Development Model

The ADDIE development model is implemented through the following stages: (1) Analysis, which involves identifying and analyzing the causes of the current issue to find solutions. (2) Design, where the product is created and organized, and the appropriate media type is selected for the learning objectives. (3) Development includes developing the product as expected by the

researcher and then implementing it to students. (4) Implementation involves using the developed product for field testing. (5) Evaluation consists of improvements or revisions to the product based on users' feedback (Fitriyah, 2021). The ADDIE model was chosen as the appropriate instructional model due to its practical and systematic approach to solving issues related to instructional media from various learning sources (Aliyu, Osman, Kumar, & Jamil, 2023).

The data used in this study were both qualitative and quantitative. Qualitative data were collected from assessments by media experts, content experts, and the target audience. Meanwhile, quantitative data were collected from students' pretest and posttest scores before and after using the Canva-based instructional media developed. The validation data obtained will be calculated using a scoring system ranging from 1 to 4, with a breakdown of scores as 4 (A), 3 (B), 2 (C), and 1 (D). The formula used to determine the feasibility of the Canva-based instructional media development is as follows (Yuanta & Larasati, 2022):

$$P = \frac{\sum x}{\sum xi} \ge 100\%$$

Described as follows:

P = Percentage

 $\sum x$  = The total number of respondents

 $\sum xi$  = The total value of all ideal item values

100% = A constant coefficient

Table 1. Criteria of Feasibility									
Category	Percentage %	Validity Level							
A = 4	80-100	Valid/feasible							
$\mathbf{B} = 3$	60-79	Valid enough/feasible enough							
C = 2	50-59	Less valid/less feasible							
D = 1	0-49	Invalid/not feasible							

The pre-test and post-test results were obtained before and after using learning media based on the Canva application. This score should be found on the minimum passing criteria score (MPC). The formula used to determine the level of effectiveness of using animation media is as follows:

$$P = \frac{\sum d}{\sum x} \ge 100\%$$

Described as follows:

*P* = Percentage

 $\sum x$  = The sum of the differences in test scores

 $\sum xi$  = The sum of test scores (scores after using the media)

100% = A constant coefficient

#### **RESULT AND DISCUSSION**

### Result

There are five stages in the procedure for developing instructional media according to the ADDIE model:

1. Analysis: This stage involves analyzing and identifying the issues and information discovered within the students during the learning process. This stage is divided into three steps: analyzing the needs of the students regarding their weaknesses in the learning process, analyzing the course materials, and formulating objectives for the development of media to make students more actively engaged in the learning process.

Yuanta, Larasati

69

- 2. Design: This stage focuses on developing appropriate instructional media. It involves three key steps: designing the animation media product, crafting the fairy tale story content, and creating assessment tools, including questionnaires for media experts, content experts, and the audience.
- 3. Development: The development stage involves creating Canva-based instructional media. This stage is divided into three steps: creating the Canva-based instructional media product, validating it with media experts, content experts, and the audience to assess the feasibility of the Canva-based instructional media product, and making revisions based on feedback from media and content experts.

No.	Table 2. Data from Content Ex Material Expert Data	Σx	∑xi	Persentase
1	The suitability of Canva learning media is determined by its alignment with the Canva application and the presented material.	4	4	100%.
2	The suitability of Canva learning media created using the Canva application is to meet the specific learning objectives.	4	4	100%
3	The level of interest in Canva learning media, designed using the Canva application, is influenced by images, animations, and text.	4	4	100%
4	The suitability of Canva learning media created with the Canva application depends on various factors, including their alignment with the learning objectives and their effectiveness in assessing students' understanding of the material.	3	4	75%
5	Understanding of material in Canva-based animation media	3	4	75%
6	The attractiveness of Canva learning media is based on the Canva application	4	4	100%
7	Overall clarity of text in Canva learning media is based on the Canva application	4	4	100%
8	The use of Canva learning media is based on the Canva application and can be appropriate for students	4	4	100%
9	The use of Canva learning media is based on the Canva application and can be appropriate for students	4	4	100%
10	The Canva learning media, developed using the Canva application, is tailored to match the specific characteristics and needs of elementary school students.	4	4	100%
		37	40	92,5%

Based on the content expert analysis, a score of 92.5% was achieved. This indicates that the Canva-based instructional media for Social Studies, focusing on Maps and Class Layout, designed for third-grade elementary school students, meets the criteria for validity and suitability. Therefore, it can be effectively implemented in the teaching and learning process.

No.		Media Expert Data	$\sum \mathbf{x}$	∑xi	Persentase
1	The suitabilit	y of Canva learning media is determined	4	4	100%
	presented ma	nent with the Canva application and the terial.			

of Elementary School

2	The suitability of Canva learning media created using the Canva application is to meet the specific learning objectives.	4	4	100%
3	The level of interest in Canva learning media, designed using the Canva application, is influenced by images, animations, and text.	3	4	75%
4	Clarity of text and images in Canva learning media	3	4	75%
_	based on the Canva application			
5	The use of color in Canva learning media based on the	4	4	100%
	Canva application			
6	Mastery of material in Canva learning media based on	4	4	100%
	the Canva application			
7	Motivate students as a whole using Canva learning	3	4	75%
	media based on the Canva application			
8	Overall media characteristics of Canva learning media	4	4	100%
-	based on the Canva application			
9	The clarity of Canva learning media based on the Canva	3	4	75%
	application can suit students exactly	5		1370
10	The Canva learning media slide display based on the	4	4	100%
10	Canva application can be suitable for students	•	•	10070
	Canva apprication can be suitable for students	36	40	90%
		50	40	90%

According to media expert analysis, a score of 90% was achieved, indicating that the Canvabased instructional media for third-grade Social Studies, focusing on Maps and Class Layout, is valid and suitable for use in the teaching and learning process.

No -		Aspect									Σ	<b>5</b> .	0/
	1	2	3	4	5	6	7	8	9	10	- ∑x	∑xi	%
1	4	4	3	4	3	4	3	4	4	4	37	40	92,5
2	3	3	3	3	4	4	3	4	4	3	34	40	85
3	4	3	3	4	4	4	4	4	4	4	38	40	95
4	3	4	3	4	4	3	4	4	4	3	36	40	90
5	4	4	4	4	4	4	4	4	4	4	40	40	100
6	4	4	4	4	4	4	4	4	4	4	40	40	100
7	4	4	4	4	4	4	4	4	4	4	40	40	100
8	4	4	4	4	4	4	4	4	4	4	40	40	100
9	4	3	3	4	4	3	4	4	3	3	35	40	87,5
10	4	4	4	4	4	4	4	4	4	4	40	40	100
11	3	4	3	3	3	3	4	3	3	3	32	40	80
12	4	3	3	4	3	4	4	4	4	3	36	40	90
13	3	3	4	3	3	3	3	3	3	3	31	40	77,5
14	4	3	4	3	4	3	4	3	4	4	36	40	90
15	3	3	3	4	3	4	4	3	4	3	34	40	85
16	4	4	3	3	3	3	4	4	4	4	36	40	90
17	4	3	3	4	4	4	4	4	4	4	38	40	95
18	4	4	3	4	4	4	4	4	4	4	39	40	97,5
19	3	3	3	3	3	4	4	4	3	4	34	40	85
20	4	4	4	4	4	4	4	4	4	4	40	40	100
21	4	3	3	4	4	4	4	4	3	4	37	40	92,5
22	3	4	3	4	4	4	3	4	4	3	36	40	90
23	4	4	3	4	4	3	4	4	4	3	37	40	92,5
24	4	3	4	3	3	4	4	4	4	3	36	40	90
25	4	3	4	4	4	3	4	4	4	3	37	40	92,5
26	3	3	3	3	3	3	3	3	3	3	30	40	75
											949	1040	91,25

Developing Canva-Based Learning Media on Maps and Class Layout for Third Graders of Elementary School

The analysis of student learning data shows an improvement in learning outcomes following the implementation of Canva-based instructional media. Pretest and post-test scores show the effectiveness of this media in teaching Maps and Class Layout in Social Studies. The increase in student scores compared to using Canva-based instructional media indicates improved learning outcomes, with average scores exceeding the minimum passing standard (MPS). This achievement aligns with the intended learning objectives.

- 1. The implementation stage involves implementing the teaching process in the classroom using the developed product. During the implementation phase, a series of pre-tests and post-tests were conducted to assess the effectiveness of the developed product.
- 2. The evaluation stage is used to determine the assessment results before and after using the developed Canva-based instructional media to assess its effectiveness in teaching.

#### Discussion

This study on the development of Canva-based learning media for teaching Maps and Class Layout to third-grade students in elementary school, utilizing the ADDIE model, has yielded significant insights and implications for educational technology. The high validation scores from content experts (92.5%) and media experts (90%) underline the effectiveness and appropriateness of the Canva-based instructional media. These scores indicate that the media aligns well with the educational objectives and is engaging and accessible to the target audience. Furthermore, the improvement in student learning outcomes, demonstrated through the analysis of pretest and posttest scores, signifies the practical effectiveness of this media in enhancing learning experiences and products (Rat et al., 2018; Twiningsih & Elisanti, 2021; Wulandari & Hamdi, 2021).

The practical implications of these findings are substantial. They suggest that digital tools, like Canva, can significantly improve learning experiences, particularly in subjects that benefit from visual aids. This is a valuable insight for educators continuously seeking innovative methods to engage students and improve learning outcomes. From a theoretical perspective, this study contributes to the existing literature by providing empirical evidence on the effectiveness of a specific digital tool in elementary education, supporting the theory that visually engaging and interactive materials can enhance young learners' comprehension and retention. Regarding policy implications, the results advocate for integrating digital learning tools in educational curriculums. This calls for educational policymakers to consider investing in and supporting technology-enhanced learning tools in classrooms, especially at the elementary level.

However, the study has its limitations. The research focused specifically on third graders and a particular subject area, potentially limiting the generalizability of the findings to other age groups or subjects. Moreover, the study was conducted in a controlled environment, which might need to accurately reflect the dynamics and challenges of a typical classroom setting.

Looking forward, there are several recommendations for both practice and future research. Educators are encouraged to incorporate Canva-based instructional media into their teaching methods, particularly for crucial visual learning subjects. Training for teachers to effectively utilize such digital tools is also recommended. Future research should apply Canva-based instructional media across different age groups and topics to assess its broader applicability. Long-term studies to evaluate the impact of such media on student learning outcomes over time would provide deeper insights. Additionally, exploring integrating similar digital tools in various educational settings could broaden our understanding of technology's role in education.

## CONCLUSION AND SUGGESTIONS

The primary objective of this research was to develop and evaluate the effectiveness of Canva-based learning media on maps and class layouts for third graders in elementary school.

This involved assessing how integrating this digital tool would influence students' comprehension and engagement in these subjects. This study contributes significantly to the field of educational technology by demonstrating the efficacy of Canva, a digital tool, in enhancing learning outcomes for elementary students. It provides empirical evidence supporting the integration of visually engaging and interactive learning materials to improve comprehension and retention in young learners. This study used a Research and Development approach in producing the product to assess the feasibility and effectiveness of Canva-based instructional media for third-grade students at SDN Dukuh Kupang V Surabaya. The study used the ADDIE model (Analyze, Design, Development, Implementation, Evaluation) because the media development was systematic and transparent, making it easier for students to understand material using Canva-based instructional media. Data were collected using a questionnaire instrument and analyzed using validity tests by media experts, content experts, the audience, and pretests and posttests for students. This developmental research shows that animated media is categorized as feasible based on the validity tests, with results of 90% by media experts, 92.5% by content experts, and 90% in the audience test. Furthermore, pretest and posttest results showed an 8% improvement, indicating its effectiveness as a learning media for third graders at SDN Dukuh Kupang V Surabaya.

The study underscores the practical utility of digital tools in enhancing educational experiences. Its findings advocate for technology integration in education, particularly in elementary schools, and suggest a need for policymakers to support such initiatives. Theoretically, it reinforces that interactive and visually stimulating materials can significantly benefit young learners' educational experiences. The study's limitations include its specific focus on third graders and the subject of Social Studies, which may limit the generalizability of the findings. Additionally, the controlled environment of the study may only partially represent the complex dynamics of typical classroom settings. Future research should explore the application of Canvabased instructional media across different age groups and subjects to evaluate its broader applicability. Long-term studies are also recommended to assess the sustained impact of such media on student learning outcomes. Further research into using similar digital tools in diverse educational contexts would also be beneficial. The study illustrates the transformative potential of integrating digital tools like Canva in educational settings. The successful implementation and positive outcomes of the Canva-based learning media underscore the significant role technology can play in modernizing educational methodologies and enhancing learning experiences. This research paves the way for a more interactive, engaging, and practical approach to elementary education, aligning with the evolving digital landscape and the needs of young learners.

#### REFERENCES

- Ahn, B.-W., & Lee, S. (2020). Effect on Self-Directed Learning Abilities, Interpersonal Understanding, and Satisfaction With the Class Among University Students Based in a Team-Project Lesson. *Journal of Engineering Education Transformations*. https://doi.org/10.16920/jeet/2020/v34i2/155393
- Aliyu, J., Osman, S., Kumar, J. A., & Jamil, M. R. M. (2023). The Design and Development of a Learning Strategy to Enhance Students' Engagement in Simultaneous Equations: An Evaluation Viewpoint. *Journal of Technology and Science Education*. https://doi.org/10.3926/jotse.1691
- Anggraeni, A. (2021). Pengembangan Media Pembelajaran Berbasis Powerpoint Interaktif Melalui Pendekatan Saintifik pada Mata Pelajaran IPS Kelas VI. Jurnal Pancar (Pendidik Anak Cerdas Dan Pintar), 5(2), 145–153.
- Budiarto, F., & Jazuli, A. (2021). Interactive Learning Multimedia Improving Learning Motivation Elementary School Students. https://doi.org/10.4108/eai.19-7-2021.2312497
- Cruywagen, S. (2018). "Flourishing with music": from music students to well-rounded musicians of the 21st century. *Koers Bulletin for Christian Scholarship*, 83(1), 1–15.

https://doi.org/10.19108/KOERS.83.1.2306

- Firmansyah, M. A., & Yuanta, F. (2022). Pengembangan Media Pembelajaran Berbasis Power Point Ilmu Pengetahuan Alam Materi Daur Hidup Hewan pada Siswa Kelas IV Sekolah Dasar Manukan Wetan 1 Surabaya. *Jurnal Pendidikan Dasar Dan Sosial Humaniora*, 1(9), 1995–2000.
- Frumkina, A., Diachenko, M. D., Polyezhayev, Y., Савіна, H., & Hadi, F. (2020). Readiness of Future Teachers for Integrated Teaching of Educational Subjects in Foreign Language. *Práxis Educacional*. https://doi.org/10.22481/praxisedu.v16i38.6023
- Handayani, L., Rulyansah, A., Nafiah, & Hartatik, S. (2022). The Effectiveness Of TPACK-Oriented Interactive Learning Media on Fourth Grade Learning Outcomes at UPT SD Negeri 183 Gresik. *Education and Human Development Journal*, 7(03), 82–88.
- Harianja, N., Soraya, T. R., & Fibriasari, H. (2021). Development of Interactive Multimedia on Learning Descriptive Text for French Learners in North Sumatra. *Britain International of Linguistics Arts and Education (Biolae) Journal*. https://doi.org/10.33258/biolae.v3i1.412
- Herawati, H. (2022). Google Classroom as Online Media in English Teaching and Learning. *Journal of English Education and Teaching*. https://doi.org/10.33369/jeet.6.4.610-621
- Kuron, M. A., & Tompodung, M. (2020). Development of Integrated Offline Learning Multimedia to Improve Student Learning Out Comes. *International Journal of Global Operations Research*. https://doi.org/10.47194/ijgor.v1i1.14
- Maiti, M., & Priyaadharshini, D. M. (2022). Recommender System for Low Achievers in Higher Education. *International Journal of Information and Education Technology*. https://doi.org/10.18178/ijiet.2022.12.12.1763
- Mohammed, M. A., Ali, I. R., & Obaid, O. I. (2022). Diagnosing Pilgrimage Common Diseases by Interactive Multimedia Courseware. *Baghdad Science Journal*. https://doi.org/10.21123/bsj.2022.19.1.0168
- Nenohai, J. M. H., Nubatonis, O. E., & Samo, D. D. (2021). Developing Cultural Context Teaching Material of Geometry With GeoGebra to Increase Students' Higher-Order Thinking Skill. https://doi.org/10.2991/assehr.k.210508.061
- Putri, S. S., Abdurahman, A., Andrian, D., Angraini, L. M., & Effendi, L. A. (2022). Development of Interactive Multimedia Based Mathematics Learning Media Macromedia Flash 8. *International Journal of Trends in Mathematics Education Research*. https://doi.org/10.33122/ijtmer.v5i2.133
- Rat, A., Ricci, L., Guillemin, F., Ricatte, C., Pongy, M., Vieux, R., ... Muller, L. (2018). Development of a Web-Based Formative Self-Assessment Tool for Physicians to Practice Breaking Bad News (BRADNET). *Jmir Medical Education*. https://doi.org/10.2196/mededu.9551
- Rodina, T. E. (2020). Digital Technologies and Their Impact on the Innovative Development of the Region. *SHS Web of Conferences*. https://doi.org/10.1051/shsconf/20208903001
- Rusilowati, A., Supriyadi, S., & Pangestu, M. H. (2022). Application of Simulation Integrated Learning Model With Video Assisted MIKIR Approach as an Effort to Improve Understanding of Earthquake Mitigation. *Iop Conference Series Earth and Environmental Science*. https://doi.org/10.1088/1755-1315/986/1/012008
- Solikah, F. A., Hartatik, S., Nafiah, & Rulyansah, A. (2022). Analysis of The Relevance of Fractional Material to The Creativity of Grade 3 Student in Elementary School. *Education* and Human Development Journal, 7(2), 94–100. https://doi.org/10.33086/ehdj.v7i2.3300
- Sundapa, A. P. (2022). Interactive Multimedia Development Using Adobe Flash Cs6 to Improve Critical and Creative Thinking Skills of Class VIII Junior High School Students. *International Journal of Current Science Research and Review*. https://doi.org/10.47191/ijcsrr/v5-i11-15
- Twiningsih, A., & Elisanti, E. (2021). Development of STEAM Media to Improve Critical Thinking Skills and Science Literacy. *International Journal of Emerging Issues in Early Childhood Education*. https://doi.org/10.31098/ijeiece.v3i1.520
- Widyaningsih, S. W., Yusuf, I., Prasetyo, Z. K., & Istiyono, E. (2020). Online Interactive

<sup>74</sup> Yuanta, Larasati Developing Canva-Based Learning Media on Maps and Class Layout for Third Graders of Elementary School

Multimedia Oriented to HOTS Through E-Learning on Physics Material About Electrical Circuit. *Jpi (Jurnal Pendidikan Indonesia)*. https://doi.org/10.23887/jpi-undiksha.v9i1.17667

- Wilkinson, K. L., McNamara, I., Wilson, D. P., & Riggs, K. (2019). Using Learning Analytics to Evaluate Course Design and Student Behavior in an Online Wine Business Course. *International Journal of Innovation in Science and Mathematics Education*. https://doi.org/10.30722/ijisme.27.04.008
- Wiyana, W., Yuniawatika, Y., Murti, T., & Waluyo, M. (2022). Android Educational Game "MATHOLIC" Based on Van Hiele's Geometric Thinking Level on Plane Figures. *Profesi Pendidikan Dasar*. https://doi.org/10.23917/ppd.v9i1.16844
- Wulandari, A., & Hamdi. (2021). Validity of Physics Mobile Learning Media Edupark of Bayangsani South Coast Fluid on Fluid Material for High School Students Using the Android Studio Application. *Pillar of Physics Education*, 13(4), 475. https://doi.org/10.24036/10154171074
- Yuanta, F., & Gultom, R. A. O. (2019). Penerapan Media Video dalam Pembelajaran Ilmu Pengetahuan Alam pada Siswa Sekolah Dasar. Seminar Nasional Pendidikan Dasar (SENADA) Pertama Tahun 2019.
- Yuanta, F., & Larasati, D. A. (2022). Developing Social Science Learning Videos in Elementary Schools During Covid-19 Pandemic. *Jurnal Basicedu*, 6(5), 8466–8474.
- Yuningsih, W., Permanasari, A., & Permana, I. (2022). Multimedia Development of Science Learning Based on Science Literacy on the Theme of Lightning. *Journal of Science Education and Practice*. https://doi.org/10.33751/jsep.v3i2.1722