p-ISSN 2407-4489
e-ISSN 2528-7303

Development of Interactive Learning Multimedia Based on Articulate Storyline in Mathematics for Grade VIII at SMP YPI Batumarta II

Sri Febriani[a], Yamanto Isa[b] , Heni Rita Susila[c]

[a,b,c] *Magister Teknologi Pendidikan, Universitas Baturaja, Indonesia*
email: [a]Srifebriani60@gmail.com, [b]yamantoisa12@gmail.com, [c]henirietta99@gmail.com

Abstract

This study aims to develop interactive learning multimedia based on Articulate Storyline in mathematics for the topic of linear equations in one variable, which will be developed in Grade VIII of SMP YPI Batumarta II. The research method used is Research and Development (R&D) with the ADDIE development model, which includes the stages of analysis, design, development, implementation, and evaluation. Data collection techniques were carried out through observation, interviews, expert validation questionnaires, and student response questionnaires. The developed product was validated by experts. Furthermore, the product was tested through individual trials involving three students, small group trials involving nine students, and field trials involving thirty-six students. The results of the study show that the Articulate Storyline-based interactive learning multimedia obtained a material expert validation result of 96.2% in the "very good" category, a learning design expert result of 83.7% in the "good" category, and a media expert result of 85.1% in the "good" category. The results of the individual trial obtained a percentage of 90.2%, the small group trial 87.3%, and the field trial 88.2%, all in the "very good" category. These results indicate that the Articulate Storyline-based interactive learning multimedia is easy to use, engaging, and helps students learn mathematics.

Keywords: *Articulate Storyline, Mathematics, Learning Multimedia, Research and Development*

.

p-ISSN 2407-4489
e-ISSN 2528-7303

INTRODUCTION

Education is a crucial aspect in improving the quality of human resources and a key factor in a nation's progress. Through education, students are expected to develop their potential, enhance their critical, creative, and systematic thinking skills, and acquire the skills needed for 21st-century life. In the educational process, learning is the key factor determining the success of achieving educational goals. Therefore, the learning process must be designed effectively, engagingly, and in accordance with the characteristics of the students. The success of the learning process is influenced by various components, such as teachers, students, methods, strategies, media, and the learning environment. Teachers play a crucial role as facilitators, tasked with creating an active and meaningful learning atmosphere. In addition to delivering learning materials, teachers are also required to utilize technology and innovative learning media to facilitate student understanding.

The development of science and technology in the current digital era has had a significant impact on the world of education. The use of technology in learning is one way to improve the quality of the teaching and learning process. Technology enables teachers to present lessons that are more engaging, interactive, and less monotonous. The use of technology-based learning media can also increase students' motivation and help them understand the material more concretely. Learning media is a crucial component in supporting successful learning. Media can help teachers convey material more clearly and help students understand difficult or abstract concepts. The use of interactive learning media is one solution that can be implemented to improve the quality of learning, particularly in mathematics. Mathematics is a subject that plays a crucial role in developing students' logical, analytical, and systematic thinking skills, as well as problem-solving abilities. However, in practice, mathematics learning is still often considered difficult and uninteresting by most students. The abstract nature of mathematical material often makes it difficult for students to grasp concepts, especially when learning is still conducted conventionally and teacher-centered.

Based on the results of initial observations and interviews with eighth-grade mathematics teachers at SMP YPI Batumarta II, it was found that the mathematics learning process is still dominated by lecture methods and the use of textbooks. The use of technology-based learning media is still very limited. This condition causes students to be less active in learning and have difficulty understanding the material, especially in the One Variable Linear Equation (PLSV) material. In addition, student learning motivation is also still low, which is evident from the lack of student participation during the learning process. On the other hand, SMP YPI Batumarta II actually has facilities that are sufficient to support the use of digital learning media, such as computers, LCD projectors, and adequate electricity networks. However, the use of these facilities has not been carried out optimally due to the limitations of interactive learning media used by teachers in the learning process. One learning media that can be used to create interactive learning is Articulate Storyline. Articulate Storyline is software used to create interactive slide-based learning multimedia with animation, audio, video, images, interactive quizzes, and attractive navigation features. This application has a simple interface and is easy to use for both teachers and students. Using Articulate Storyline in learning can help students understand mathematical concepts through visualizations, simulations, and interactive practice problems. Furthermore, this media can also increase student engagement in the learning process because students can interact directly with the media and receive automatic feedback.

The use of interactive learning media is considered effective in enhancing students' conceptual understanding. This is consistent with constructivist learning theory, which states that learners construct knowledge through active experiences and interactions with their learning environment (Piaget, as cited in Dahar, 2018). Therefore, the provision of interactive learning media, such as those developed using Articulate Storyline, is highly relevant to supporting students' learning needs in the 21st century.

p-ISSN 2407-4489
e-ISSN 2528-7303

Previous research has relevance to the research that will be conducted by the researcher, such as the study conducted by (Fatia & Ariani, 2020) which found that the development of Articulate Storyline 3 media in learning factors and multiples of a number in grade IV elementary school was able to improve students' conceptual understanding so that it can be used as a solution for the latest innovation in learning media. In line with the research by (Af'idati et al., 2022), it is stated that the development of Articulate Storyline learning media in social studies content on the proclamation of Indonesian independence for grade V elementary school is suitable for use as a learning medium. In addition, the research conducted by (Safira et al., 2021) also stated that the development of interactive learning media based on Articulate Storyline in science learning in grade V elementary school is very suitable for use by students. The results of previous studies show that the use of Articulate Storyline-based learning media can improve students' understanding of learning materials.

Based on the results of previous studies, it can be concluded that interactive learning media based on Articulate Storyline is not only feasible to use, but also able to improve the quality of learning. Therefore, the novelty in this study lies in the development of interactive learning multimedia based on Articulate Storyline applied to Mathematics subjects at the Junior High School (SMP) level, especially in materials that have a higher level of abstraction and require students' logical thinking skills. In addition, this study not only emphasizes the feasibility aspect of the media, but also integrates systematic instructional design and interactivity adapted to the characteristics of junior high school students, so that it is expected to make a new contribution to the development of innovative digital learning media that is relevant to the needs of mathematics learning at the secondary level. The similarity of this study with previous research lies in the use of Articulate Storyline software as a development medium and the interactive nature of the product. The difference lies in the level of education, the characteristics of the students, and the focus of the research which emphasizes the process of development and product feasibility assessment through expert validation and trials with students.

Based on the description above, the researcher is interested in developing interactive learning media based on Articulate Storyline in grade VIII mathematics at SMP YPI Bamarta II. This media is expected to increase learning motivation, facilitate understanding of concepts, and help teachers deliver material more effectively.

METHOD

This research uses the Research and Development (R&D) method with the ADDIE development model, which consists of five stages: analysis, design, development, implementation, and evaluation. The steps in the ADDIE development model are (Figure 1):

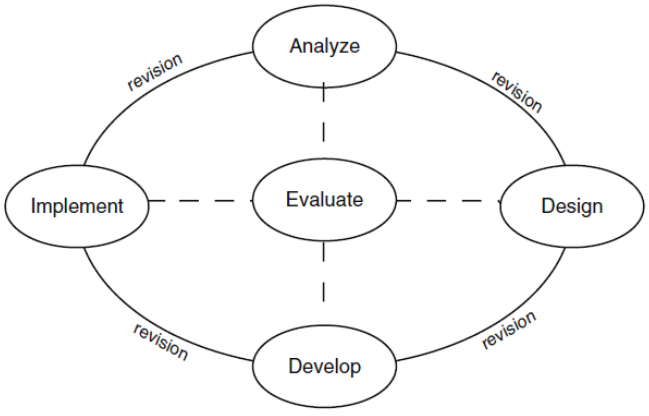


Figure 1. ADDIE Development Model

Tessmer used a product evaluation model consisting of several stages: self-evaluation, expert

p-ISSN 2407-4489
e-ISSN 2528-7303

review, one-on-one, small group, and field testing. However, in this study, the formative evaluation stage was adjusted to meet the needs and limitations of the study.

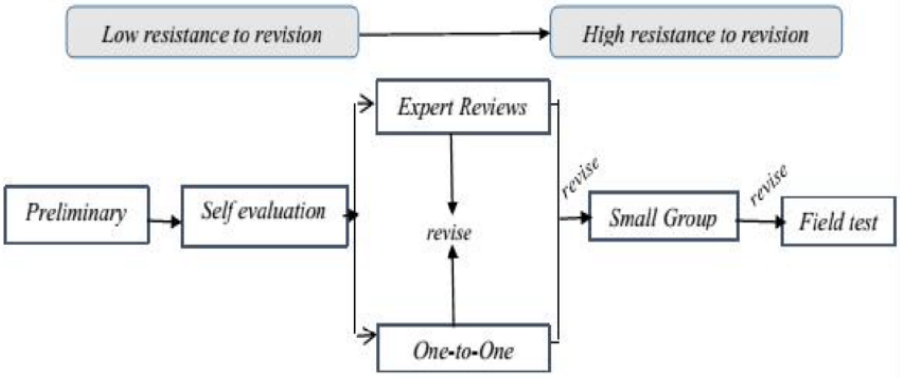


Figure 2. Tessmer Evaluation Model

However, in this study, the formative evaluation stages are adjusted to the needs and limitations of the research, as stated by Sugiyono (2019) that the steps of development research can be modified according to field conditions. There are several types of evaluation places in this study: Expert Review Conducted by three experts: material expert, learning design expert, and media expert. Student responses consist of three parts, namely: one-to-one evaluation conducted by three students, small group conducted by nine students, and field test conducted by thirty-six students

Data collection techniques are a crucial step in research because they serve to obtain the information needed to answer the research problem formulation. The collected data must be relevant to the research objectives so that the results can provide a clear picture of the object being studied. According to Sugiyono (2022), data collection techniques are methods used by researchers to systematically obtain the required data in accordance with the research objectives. The data collection techniques used in this study include observation, interviews, instrument validation by material experts, instructional design experts, media experts, and student response questionnaires. Data analysis obtained through validation assessments by material experts, instructional design experts, media experts, and student responses will be summed and averaged. The results obtained can be used to determine the feasibility of a media, which is categorized in Table 1. The formula used is as follows:

$$P = \frac{\Sigma X}{\Sigma X_{Maks}} \; x \; 100\%$$

Description:

P = Eligibility Percentage

ΣX = Total Score Obtained

ΣX_Max = Maximum Score

Table 1. Media Suitability Criteria

Presentation	Criteria
81% – 100%	Very Eligible
61% – 80%	Eligible
41% – 60%	Quite Eligible
21% – 40%	Less Eligible
0% – 20%	Not Eligible

p-ISSN 2407-4489
e-ISSN 2528-7303

Based on these criteria (Table 1), interactive learning multimedia based on articulate storylines is considered suitable for use in the learning process if it achieves a minimum score of suitable.

RESULTS AND DISCUSSION

This research is a research and development (R&D) which produces a product in the form of interactive learning multimedia based on Articulate Storyline in the Mathematics subject for class VIII at SMP YPI Batumarta II. Researchers use the ADDIE model to develop interactive multimedia. This model has several steps, the first of which is analysis, which is carried out by analyzing several stages such as needs, student characteristics, and curriculum. Design: at the design stage, it describes how the initial description of the product that the researcher developed started from compiling a flowchart and storyboard. Development: at this stage, the researcher created multimedia based on the flowchart and storyboard that had been prepared previously. Implementation: this stage is a product trial. Evaluation: At this stage, the researcher used tessmer formative evaluation.

The analysis phase was conducted to determine the development needs for multimedia learning at SMP YPI Batumarta II. Activities included needs analysis, curriculum analysis, and student characteristics analysis. In the design stage, the researcher prepared an initial design for the interactive learning multimedia product to be developed. This stage aims to produce a systematic, attractive product design that is in accordance with student needs and learning objectives. The design is based on the results of the needs analysis, student characteristics, and the applicable curriculum at SMP YPI Batumarta II. The first step is determining the learning material and then compiling learning objectives. This is followed by creating a flowchart and storyboard, designing the media display, compiling interactive evaluation questions, preparing supporting images, animations, audio, and videos.

The next stage is the development stage, which is the production stage in developing a multimedia learning product from a design to a real product according to the storyboard. First, collect teaching materials and resources. At this stage, a multimedia learning product will be produced. The first activity carried out at this stage is collecting materials for creating learning media, for example: images related to the material, sound recordings, and animations. Attached below is the result of the Articulate Storyline interactive media product (Figure 2 until Figure 15).



Figure 2. Opening Page



Figure 3. Login Page



Figure 4. Failed Login Page



Figure 5. Main Page

p-ISSN 2407-4489
e-ISSN 2528-7303



Figure 6. Introduction Page



Figure 7. Landing Page



Figure 8. Material Page



Figure 9. Quiz Page



Figure 10. Correct Answer Page



Figure 11. Wrong Answer Page



Figure 12. Quiz Pass Page



Figure 13. Failed Quiz Page



Figure 14. Developer Page



Figure 15. Learning Video Page

p-ISSN 2407-4489
e-ISSN 2528-7303

At this stage, researchers prepare a questionnaire to be submitted to validators, including media experts and content experts. The assessment results obtained from each validator will be used by researchers to improve the product if any corrections are needed. The following are the assessment results from each validator (Table 2) :

Table 2. Results of each validator

No	Validator	Presentation	Description
1	Material Expert	96,7%	Very Eligible
2	Learning design expert	83,7 %	Eligible
3	Media expert	85,1%	Eligible

Implementation stage. This stage was conducted to assess the practicality of multimedia learning, as evidenced by student responses after using the media in the learning process. Students responded positively to the use of multimedia learning because the media's appearance was attractive, easy to operate, and provided a pleasant learning experience. The interactive practice questions and automatic feedback made students more active in learning and immediately identified any errors they made. The results of individual trials obtained a percentage of 90.2% (Table 3), small group trials 87.3% (Table 4), and field trials 88.2% (Table 5), with the category "very good." These results indicate that multimedia learning received a positive response from students. Students felt more interested, active, and found it easier to understand mathematics material using interactive multimedia based on Articulate Storyline.

Table 3. Results of One to One Evaluation

No.	**Assessment Aspects and Statement Items**	**Total Score**	**Average (%)**
1	The appearance of this multimedia is visually appealing.	267	89.0
2	The colors used in this multimedia are pleasant to the eyes.	266	88.7
3	The text in this multimedia is easy to read.	274	91.3
4	The buttons in this multimedia are easy to use.	268	89.3
5	The menus in this multimedia are easy to navigate.	274	91.3
6	The instructions provided in this multimedia are easy to understand.	272	90.7
7	The material presented is easy for me to understand.	269	89.7
8	The language used is easy to comprehend.	263	87.7
9	The example problems help me understand the material.	260	86.7
10	This multimedia makes me more active in learning.	264	88.0
11	The exercises or games in this multimedia are interesting.	273	91.0
12	The multimedia provides feedback when I answer questions.	272	90.7
13	This multimedia increases my enthusiasm for learning.	273	91.0
14	This multimedia helps me understand mathematics lessons better.	277	92.3
15	I enjoy learning using this multimedia.	288	96.0
Total Score		**4.060**	
Average		**90.2**	

p-ISSN 2407-4489
e-ISSN 2528-7303

Table 4. Small group evaluation

No.	Assessment Aspects and Statement Items	Total Score	Average (%)
1	The appearance of the multimedia is visually appealing.	638	91.1
2	The colors used in the multimedia are pleasant and not distracting.	608	87.0
3	The animations in the multimedia increase my interest in learning.	609	86.6
4	The buttons in the multimedia are easy to use.	598	84.0
5	The multimedia operates without errors.	614	86.9
6	The instructions for using the multimedia are easy to understand.	616	85.7
7	The material presented is easy for me to understand.	611	87.2
8	The example problems help me understand the material.	615	85.0
9	The language used in the multimedia is easy to understand.	638	90.3
10	The material is organized in a clear and logical sequence.	617	87.8
11	The multimedia encourages me to participate more actively in learning activities.	626	89.3
12	The exercises and games in the multimedia are engaging.	600	87.3
13	The multimedia provides feedback when I answer questions.	580	83.6
14	Learning with this multimedia is enjoyable.	642	91.0
15	The multimedia increases my enthusiasm for learning.	629	88.9
16	I am interested in using this multimedia again in the future.	599	86.7
17	The multimedia helps me understand mathematics lessons better.	619	85.1
18	The multimedia helps me learn independently.	624	86.4
19	The multimedia can be effectively used during classroom learning activities.	632	88.8
20	The multimedia supports independent learning.	620	87.7
Total Score		**15717**	
Average		**87,298**	

The findings suggest that interactive learning multimedia based on Articulate Storyline can create a more engaging and interactive learning environment. The integration of text, images, animations, audio, and interactive evaluations helped students understand computational thinking concepts more clearly. Students showed greater interest and participation during the learning process because the multimedia provided visual and interactive learning experiences that were not found in conventional classroom instruction.

These results align with research by Maulana (2022), which found that interactive multimedia can increase junior high school students' interest and motivation in learning mathematics. Furthermore, the practice questions and immediate feedback feature were found to aid independent learning. Research by Yuliana (2024) also demonstrated that interactive multimedia can enhance student learning independence because students can access materials at any time and receive immediate feedback.

On the other hand, research by Rahmawati and Kurniawan (2020) provides a different perspective, stating that the use of interactive multimedia requires teachers to be prepared to manage technology-based learning. The study stated that teachers' lack of skills in operating digital media can lead to less than optimal multimedia use. Therefore, the success of using multimedia in learning is influenced not only by the quality of the media but also by the teacher's competence in utilizing learning technology.

The effectiveness of multimedia in learning is evident in the improvement in student learning outcomes after using interactive learning media based on Articulate Storyline. Students find it easier to understand mathematics because the material is presented systematically and is accompanied by examples of problems and clear explanations. Furthermore, the interactive practice problems help students grasp mathematical concepts gradually. The use of animation and visualization also helps students understand material that was previously considered abstract in a more concrete way.

p-ISSN 2407-4489
e-ISSN 2528-7303

Table 5. Field test evaluation

No.	Assessment Aspects and Statement Items	Total Score	Average (%)
1	The learning multimedia is interesting to use.	3215	89.31
2	The multimedia display is not boring.	3074	85.39
3	The images and text are clear and easy to see.	3281	91.14
4	The multimedia is easy to use.	3147	87.42
5	The multimedia operates without errors.	3159	87.75
6	The instructions in the multimedia are easy to understand.	3161	87.81
7	The material presented in the multimedia is easy to understand.	3132	87.00
8	The example problems help me learn the material.	3129	86.92
9	The language used in the multimedia is easy to understand.	3179	88.31
10	The multimedia makes me more active during learning activities.	3233	89.81
11	The games and exercises in the multimedia are enjoyable.	3218	89.39
12	The multimedia provides feedback when I answer questions.	3088	85.78
13	The multimedia increases my interest in learning mathematics.	3117	86.58
14	Learning with this multimedia is enjoyable.	3253	90.36
15	The multimedia helps me understand the learning material.	3173	88.14
16	The multimedia helps me answer questions.	3142	87.28
17	My academic performance can improve with this multimedia.	3176	88.22
18	The multimedia is suitable for use during classroom learning.	3170	88.06
19	The multimedia helps me learn more quickly.	3202	88.94
20	The multimedia helps me learn independently.	3283	91.19
Total Score		**63,532**	
Average		**88.2**	

The results of this study align with those of Nurhanifa, Mutaqin, and Ihsanudin (2021), which also showed that interactive multimedia learning using Articulate Storyline can improve the effectiveness of mathematics learning because students are more active and motivated in learning. Furthermore, research conducted by Jainuri, Susanti, Awatif, and Yohanes (2023) found that interactive multimedia learning based on Articulate Storyline effectively improves mathematics learning outcomes in junior high school students. This study explained that the use of interactive media can increase students' attention and learning activity, thus impacting learning outcomes. The similarity between the results of that study and this study is seen in the increased understanding of mathematics material by students after using interactive multimedia learning.

These results align with those of Nurhanifa, Mutaqin, and Ihsanudin (2021), which also showed that interactive multimedia learning using Articulate Storyline can improve the effectiveness of mathematics learning because students are more active and motivated in learning. Furthermore, research conducted by Jainuri, Susanti, Awatif, and Yohanes (2023) stated that interactive multimedia learning based on Articulate Storyline effectively improves junior high school students' mathematics learning outcomes. This study explains that the use of interactive media can increase students' attention and learning activities, thus impacting learning outcomes. The similarity between the results of that study and this study is seen in the increased understanding of mathematics material by students after using interactive multimedia learning

p-ISSN 2407-4489
e-ISSN 2528-7303

CONCLUSIONS

Based on the results of research and development of interactive learning multimedia based on Articulate Storyline in the subject of mathematics for class VIII at SMP YPI Batumarta II, this research has succeeded in producing a product in the form of interactive learning multimedia based on HTML5/web based content that can be used via laptop or smartphone without additional applications. Multimedia was developed using the ADDIE model which includes the stages of Analysis, Design, Development, Implementation, and Evaluation.

Interactive learning multimedia based on Articulate Storyline is suitable for use as an alternative learning media for class VIII mathematics at SMP YPI Batumarta II because it is able to help teachers deliver material more effectively and create a more active and enjoyable learning atmosphere.

REFERENCES

Aisyah, N. (2022). Kesesuaian tujuan pembelajaran, materi, dan evaluasi dalam pengembangan multimedia pembelajaran interaktif. *Jurnal Teknologi Pendidikan*, 14(2), 101–110.

Ariani, Y. (2020). *Pengembangan Media Articulate Storyline 3 pada Pembelajaran Faktor dan Kelipatan Suatu Bilangan di Kelas IV Sekolah Dasar*. Journal of Basic Education Studies, 3(2), 503–511.

Fatia, N., & Ariani, Y. (2020). Pengembangan Media *Articulate Storyline* 3 pada Pembelajaran Faktor dan Kelipatan Bilangan. *Jurnal Pendidikan Matematika, 4*(1), 23–34.

Faradilah, C., Yamanto, I., Arief, Q (2025). Pengembangan Media Pembelajaran pada Mata Pelajaran IPA Kelas IV SD Negeri 48 OKU. *Jurnal Ilmiah Kependidikan*. 5(2), 636-646.

Febriana, D. (2024). Pengaruh multimedia interaktif terhadap keterlibatan siswa dalam pembelajaran matematika. *Jurnal Pendidikan Matematika Indonesia*, 9(1), 45–54

Hidayat, A., Putra, R., & Lestari, D. (2020). Pengembangan Media Pembelajaran Interaktif menggunakan *Articulate Storyline*. *Jurnal Inovasi Pendidikan, 12*(2), 89–98.

Heni, R. S., Suyitno, M., Zulfiati., Syahrial. (2020). Interactive Multimedia to Improve the Students' Ability of Teacher Training and Education Faculty in Learning Strategy Course.*International Journal og Psychosocial Rehabilitation,* 24(1), 592-597.

Jainuri, M., Susanti, A., Awatif, A., & Yohanes. (2023). Development of interactive learning multimedia based on Articulate Storyline on mathematics learning materials. *Journal of Mathematics Education*, 8(1), 45–56.

Juhaeni, J., Sari, N., & Rahayu, T. (2021). Pengembangan Media Pembelajaran Interaktif menggunakan *Articulate Storyline*. *Jurnal Pendidikan Teknologi, 5*(1), 11–20.

Maulana, F. (2022). Pengaruh multimedia interaktif terhadap minat dan motivasi belajar matematika siswa SMP. *Jurnal Inovasi Pendidikan Matematika*, 6(2), 88–97.

Nora, A., Edi, S., Anita, A., Heni, R. S. (2023). Development of valid, Practical, and Potential Web-Based Learning Materials for Higher Education. *Jurnal Teknodika,* 21(1), 49-55.

Nurhanifa, N., Mutaqin, A., & Ihsanudin, I. (2021). *Pengembangan Multimedia Pembelajaran Interaktif Menggunakan Articulate Storyline pada Materi Bangun Ruang Sisi Datar*. Jurnal Pendidikan Matematika, 9(2), 145–154.

Nurhayati, E. (2022). Pengaruh multimedia interaktif terhadap motivasi belajar siswa pada pembelajaran matematika. *Jurnal Pendidikan dan Pembelajaran*, 11(2), 134–142.

Prasetyo, R. B. (2023). Pengembangan media pembelajaran interaktif berbasis Articulate Storyline pada materi peluang kelas VIII SMP. *Jurnal Pendidikan dan Teknologi Pembelajaran*, 5(1), 67–75.

Putri, A. P., Heleni, S., & Murni, A. (2022). Pengembangan media pembelajaran matematika interaktif berbasis Articulate Storyline untuk memfasilitasi kemandirian belajar peserta didik. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 6(3), 2345–2356.

Putri, R. (2023). Pengaruh desain visual dan navigasi multimedia terhadap kenyamanan belajar siswa. *Jurnal Media Pembelajaran*, 8(3), 77–86.

Rahmawati, L. (2021). Efektivitas penggunaan multimedia pembelajaran ditinjau dari kesiapan guru dan siswa. *Jurnal Pendidikan Indonesia*, 10(4), 155–164.

Safira, A. D., Sarifah, I., & Sekaringtyas, T. (2021). *Pengembangan Media Pembelajaran Interaktif Berbasis Web Articulate Storyline pada Pembelajaran IPA di Kelas V Sekolah Dasar*. Prima Magistra: Jurnal Ilmiah Kependidikan, 2(2), 237–253. https://doi.org/10.37478/jpm.v2i2.1109

Saputra, H. (2024). Pengaruh feedback otomatis pada multimedia interaktif terhadap efektivitas belajar siswa. *Jurnal Inovasi Teknologi Pendidikan*, 15(1), 91–100.

Sari, D. (2022). Pengembangan multimedia pembelajaran matematika berbasis kurikulum dan karakteristik siswa SMP. *Jurnal Pendidikan Matematika Indonesia*, 7(2), 120–129.

Sukmawati. (2021). Media Pembelajaran dalam proses Belajar Mengajar. *Jurnal Pendidikan*, 5(2), 45–54

Sugiyono. (2022). *Metode Penelitian dan Pengembangan p*endekatan Kuantitatif, Kualitatif, dan R&D *(Research and Development)*. Bandung: Alfabeta.

Uno, H. B. (2021). *Teori Motivasi dan Pengukurannya: Analisis di Bidang Pendidikan*. Jakarta, Indonesia: Bumi Aksara.

Wulandari, R. (2023). Penyajian materi matematika secara sistematis untuk meningkatkan pemahaman konsep siswa. *Jurnal Pendidikan Matematika*, 9(3), 144–153.

Yamanto, I., Eriyanti., Juhaidatur, R., Ria, N. (2024). Pengembangan Multimedia Interaktif dengan Menggunakan Adobe Animate CC pada Mata Pelajaran Ilmu Pengetahuan Alam Kelas VI Semester 1 di SD Negeri 10 OKU. *Jurnal ilmiah Kependidikan*. 4(2), 247-259.

Yuliana, S. (2024). Multimedia interaktif dan kemandirian belajar siswa dalam pembelajaran matematika. *Jurnal Pendidikan Digital*, 4(1), 33–42.