

Development of Critical Thinking Skills-Based Animation Media on the Benefits of Energy for Class V Kemejing Elementary School

Muhammad Ferdian Syaifullah¹, Kuntoro², Seful Ma'ruf³, Sutrisno⁴, Endang Sri Wahyuni⁵
{ferdianferdian10@gmail.com¹, kuntosutaryo@gmail.com², saifulmarufu@gmail.com³,
sutrisno12051977@gmail.com⁴, endangsriw1967@gmail.com⁵}

Muhammadiyah University Purwokerto, (+62)85713441788¹, Muhammadiyah University Purwokerto, (+62)85640436681², Muntang Elementary School, (+62)85877034560³, Gombolharjo Elementary School, (+62)85624806643⁴, Kemejing Elementary School, (+62)85712233626⁵

Abstract. Learning at the elementary school level is a process of interaction between students and educators to achieve learning objectives. Learning at the elementary school level applies thematic learning, so that learning requires the use of learning media such as animation media. The use of animation media can influence students' critical thinking. This study aims to (1) determine the development of animated media, (2) determine the feasibility of animated media, and (3) determine the practicality of animated media. This research uses development (R&D) with the ADDIE model. The results of this study: (1) produce a product in the form of critical thinking-based animation media; (2) the feasibility results of critical thinking-based animation media get an average of 3.6, so it is categorized as very feasible. (3) The results of critical thinking-based animation media practitioners get an average of 88.5% in limited trials and 93.1% in wide trials, so they are categorized as very practical.

Keywords: critical thinking skill, animation media.

1 Introduction

Learning is a process of interaction between students and teachers in a class. The first step in the educational process is studying in primary schools. In Indonesia, the curriculum is a system that regulates education. The direction of school education is determined by using the curriculum as a guide. The 2013 Curriculum and the Merdeka Curriculum are still used in several schools in Indonesia. The application of this mixed curriculum is still used in SD Kemejing.

At Kemejing Elementary School, this mixed curriculum is still being implemented. The Merdeka curriculum is still used for grades 1 and 4, while the 2013 curriculum is still used for grades 2, 3, 5, and 6. The 2013 curriculum prioritizes thematic learning, which brings together various subjects under the same theme. The basic competencies of the subjects are spread across each theme. One of the important competencies in theme-based learning is the ability to learn about science [1].

The goal of science education is to equip students with the knowledge and skills necessary for scientific literacy [2]. Learning media are very necessary in scientific learning because elementary school students are still concrete and operational. Tools called instructional media are used in the classroom to aid topical learning. Two categories of learning media are conventional learning media and modern learning media [3]. Animated videos are one of the most contemporary learning tools.

Animated media is educational video content created on a web platform connected to the internet. Images, text, and sound are all displayed simultaneously in animated media. 1) Learning is more successful when using animated teaching materials than when not using them. 2) improve student performance; 3) increase learning motivation; and 4) improve instructor pedagogy. Students will be more motivated in their learning when animated learning devices are used to convey information because it promotes critical thinking [4]. One can connect with others through concepts, reasoning, and critical thinking when overcoming difficulties [5]. Academic achievement suffers when a student's capacity to use critical thinking skills declines. Learning that is centered on critical thinking is more suitable for use in schools.

2 Research methods

The research method used is a research and development method or Research and Development (R&D). The development model used in this research is ADDIE. The ADDIE development model consists of five stages, namely 1) analysis, 2) design, 3) development, 4) implementation, 5) evaluation [6]. The procedure for developing animation media based on critical thinking skills in the material "Benefits of Energy" for class IV Elementary Schools uses the ADDIE model, namely 1) The Analysis phase includes needs analysis and learning material analysis, 2) The Design Stage includes collecting references, designing drafts, preparing materials, preparing layouts, and making assessment instruments, 3) Development Stage includes media development, expert validation, and product revision, 4) Implementation Stage includes limited trials and extensive trials, 5) Evaluation Stage (Evaluation). The design of the ADDIE development model used in this study can be illustrated in the chart below:

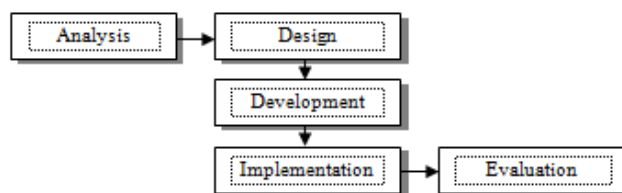


Fig. 1 ADDIE Model Development Design

Data collection techniques consist of four methods, namely the interview method, the questionnaire method, the test method and the documentation method [7]. The data collection instruments used were 1) learning instruments including syllabus and learning implementation

plans (RPP), 2) research instruments including interview sheets, validation sheets for animated learning media, student response questionnaire sheets, and test questions.

3 Result and discussion

a. Feasibility of Critical Thinking Skill-Based Animation Media

The results of the assessment of animation media based on critical thinking skills include two lecturers and teachers as practitioners. The results of validating the presentation aspect obtained a score of 32, so that a percentage of 100% was obtained with a value of 4.0, so that it could be categorized as very feasible. The results of the display aspect validation obtained a score of 65, so a percentage of 83.3% was obtained with a value of 3.3, so that it could be categorized as feasible. The results of the validation of the anatomical aspects of the learning media obtained a score of 16, so that a percentage of 100% was obtained with a value of 4.0, so that it could be categorized as very feasible. The validation results of the content feasibility aspect obtained a score of 56, so that a percentage of 87.5 was obtained with a value of 3.5, so that it could be categorized as very feasible. The results of validating aspects of critical thinking skills obtained a score of 30, so that a percentage of 75% was obtained with a value of 3.0, so that it could be categorized as feasible. So that the results of the lecturer and teacher validation results obtained a score of 3.6, categorized as very valid. Is.

Tabel 1. Results of Lecturer and Teacher Validation of Critical Thinking Skills-Based Animation Media

No	Reted Aspect	Score		Amount	Presentas e	Mark	Criteria
		Lecturer	Teacher				
1.	Presentation	16	16	32	100%	4,0	Very Worthy
2.	Appearance Anatomy Learning Videos	33	32	65	83,3%	3,3	Worthy
3.	Content Eligibility	8	8	16	100%	4,0	Very Worthy
4.	Critical Thinking Skill	25	31	56	87,5%	3,5	Very Worthy
5.		15	15	30	75%	3,0	Worthy
Average						3,6	Very Worthy

b. Practicality of Critical Thinking Skill-Based Animation Media

The practicality of skill-based animation media for critical thinking is measured through student responses. student responses to animation media based on critical thinking skills:

1) Trial with 6 Students

Information about the results of the six students who participated in the completion of the trial student questionnaire The content feasibility element can be classified as practical because it gets a score of 5 and a proportion of 83%.

The language component received a score of 6 and a percentage of 100%, classifying it as very practical. With a score of 20 and a proportion of 83%, the presentation component fulfills the practical requirements. The display component received a score of 22 and a percentage rating of 91%, classifying it as very practical. Anatomical elements in animated media receive a score of 5 and an accuracy rate of 83%, making them very practical. Elements of critical thinking skills receive a score of 22 and a percentage of 91%, classifying them as very practical. The final average is 88.5%, with very practical criteria.

Tabel 2. Results of Student Responses to 6 Students' Critical Thinking Skills-Based Animation Media

No	Aspect	Score	Percentage (%)	Criteria
1	Content eligibility	5	83%	Practical
2	Language	6	100%	Very Practical
3	Presentation	20	83%	Practical
4	Display eligibility	22	91%	Very Practical
5	Anatomy Learning Videos	5	83%	Practical
6	Critical Thinking Skill	22	91%	Very Practical
	Amount	80	88.5%	Very Practical

2) Trial with 15 Students

In the trial, 15 students completed the data from the student questionnaire answers. With a score of 13 and an accuracy rate of 86%, the content feasibility aspect can be said to be very practical. The language component received a score of 15 and a percentage of 100%, classifying it as highly practical. The presentation component received a score of 58 and a percentage of 96%, classifying it as very practical. The display component received a score of 56 and a percentage of 93%, classifying it as very practical. The anatomical component of learning media gets a score of 13 and an accuracy rate of 86%, qualifying as practical. The critical thinking ability element received a score of 59 and a percentage of 98%, classifying it as very practical. The average learning assessment score is 91.6%, and the average student answer is 93.1%, so it gets into the very practical category. Based on these data, it can be concluded that the responses and evaluation scores of students towards animation media based on critical thinking skills are categorized as very practical.

Tabel 3. Results of Student Responses to 15 Students' Critical Thinking Skills-Based Animation Media

No	Aspect	Score	Percentage (%)	Criteria
1	Content eligibility	13	86%	Very Practical
2	Language	15	100%	Very Practical
3	Presentation	58	96%	Very Practical
4	Display eligibility	56	93%	Very Practical
5	Anatomy Learning Videos	13	86%	Practical
6	Critical Thinking Skill	59	98%	Very Practical
	Amount	214	93.1	Very Practical

The research results obtained in this study are in line with previous research, namely:

- a. The first research was conducted by Rahman Haryadi, Iwit Prihatin, Dwi Oktaviana, and Herminovita with the title "Development Of Animation Video

Media Using Powtoon Software To Improve Students Critical Thinking Skill Ability". Having similarities with my research, which develops media for critical thinking skills, the research target is the students of SMP N 01 Boyan Tanjung. This research has a difference with my research on the research object, namely fifth grade elementary school students. Based on the research results, the use of animated learning media can bring out students' critical thinking skills [8].

- b. The second research, conducted by Umi Mujaifa Lidawa, Mardia Hi. Rahman, and Astuti Salim with the title "The Influence of Student Motivation and Learning Ability on Students' Critical Thinking Ability Using Animation Media," has similarities with my research, which uses animation media to develop students' critical thinking skills. This research has a difference from my research, namely the research method used. My research uses developmental methods, while the research conducted by Umi Mujaifa Lidawa uses qualitative methods. Based on the results of research conducted by animation media, it can bring out or have an influence on students' critical thinking skills [9].
- c. The third research, namely research conducted by Hadi Saifuddhin and Desty Dwi Rochmania with the title "The Development Of Kinemaster Based Animation Video Learning Media On Style Materials To Improve Critical Thinking Skills Of Drade IV Elementary School Students," has in common with my research, which applies critical thinking in animated learning media. This research has a difference from my research, namely that it uses powtoon, while the research conducted by Hadi Saifuddhin uses the Kinemaster application. Based on the results of research conducted by animation media, it shows an increase in students' critical thinking skills [10].

Based on the explanation above, animated learning media is appropriate for use in the process of teaching and learning activities. Critical thinking-based animation learning media can improve students' critical thinking skills. This statement is proven by previous research that has been done.

4 Conclusion

- a. The development of critical thinking skill-based animation learning media has produced a product in the form of critical thinking skill-based animation learning media that can be used as a learning medium and grows indicators of critical thinking skills in fourth grade elementary school students.
- b. Critical thinking skill-based animation learning media can be said to be feasible because it meets the eligibility requirements of the media, which are valid and practical.
 - 1) Validity is measured through product validation carried out by material expert validators, media expert validators, and practitioners getting an overall average value of 3.6 including the very valid category.

- 2) Practicality is measured through a student response questionnaire. Student responses to the use of critical thinking skill-based animation learning media in limited trials with a percentage of 88.5% so that they are categorized as very practical and in wide trials with a percentage of 93.1% so that they are categorized as very practical

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