

Development of Interactive Multimedia Assisted by Canva to Enhance Students' Critical Thinking in Learning at SDN Lesanpuro 1

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Abstract

Currently, students still struggle with critical thinking. In fact, this ability is very important to solve everyday problems. To overcome this, we can use exciting and interactive learning with the help of technology. Unfortunately, many teachers still use the old way of teaching so that students get bored quickly. Therefore, this study aims to create interesting and interactive learning media using Canva application so that students can be more trained in critical thinking. This research was conducted on grade IV students at SDN Lesanpuro 1 Malang City. The method used is development research (R&D) with the ASSURE model. Data collection techniques used observation, questionnaires, pre-test and post-test, and documentation. The data was analyzed to assess the validity, practicality, and effectiveness of the learning media in improving critical thinking. The findings indicated that the developed learning media was valid, practical, and effective in fostering students' critical thinking abilities. In addition, students also really like this learning media so that they become more motivated to learn.

Keywords: canva, critical thinking, elementary school

Introduction

The development of Science and Technology (IPTEK) has triggered the emergence of increasingly complex problems, both in the fields of economics, health, science, and even education. These problems are challenges for society amidst the increasingly advanced country. Internalization of culture and technology risks affecting people's lives. The increasing development IPTEK, a person's morals are increasingly declining if the use of technology is not appropriate in its place. For that, society must be able to filter the knowledge and culture that enters so as not to erode the identity as a civilized nation.

In dealing with this, society needs to be equipped with skills that can encourage someone to seek, analyze and evaluate information (Saputra, 2020). This ability is *critical thinking* or critical thinking skills. Facione (2013) states critical thinking as self-regulation in determining something that produces an interpretation based on evidence, concepts, or considerations as the basis for his decision (Syafitri et al., 2021). This aligns with the definition of critical thinking according to (Agnafia, 2019) where critical thinking is a person's ability to analyze problems based on evidence and facts so that a conclusion is obtained. Meanwhile, Glaser in (Sulistiani & Masrukan, 2016) defines critical thinking as the competence in implementing examination methods and logical reasoning. The indicators of critical thinking according to Ennis consist

of basic clarification, basis for decision making, inference, further clarification, and strategy and tactics (Ritdamaya & Suhandi, 2016). In line with that, (Susanto, 2021) mentioned 4 indicators of critical thinking including providing simple explanations (*elementary clarification*), building basic skills (*basic support*), concluding (*inference*), making further explanations (*advanced clarification*) and strategies and tactics (*strategies and tactics*).

It is essential to foster critical thinking skills from a young age. As previously mentioned, critical thinking skills are a provision in facing the challenges of increasingly complex world problems. In contrast to this, the reality shows that people's critical thinking skills are still low (Syafitri et al., 2021). The impact that arises is back on a person's ability to solve problems, even simple ones. For this reason, it is necessary to develop critical thinking skills which can be achieved through education. However, in supporting students' critical thinking skills, teachers must present good learning, not only achieving high scores but also focusing on how students are able to absorb the knowledge to be applied in everyday life.

Good learning is student-centered learning. This is related to the constructivist learning theory by Vygotsky which emphasizes students as active learners (Manulang et al., 2023). Students will be able to support their critical thinking skills when they build their own knowledge. In facilitating student-centered learning, teachers need supporting learning media. The existence of learning media can help students build their understanding. In addition, learning media also fosters students' learning motivation so that they are more comfortable in learning (Irawan et al., 2023; Nur Laillni Roma et al., 2023). Current technological developments can be integrated into the development of interactive learning media. Unfortunately, many schools have not utilized technology in learning media effectively. Based on the results of initial observations conducted at SDN Lesanpuro 1 Malang City, teachers still use conventional media such as books, pictures, and others in learning. This causes learning boredom in students and they have difficulty understanding learning materials. Technological learning media can significantly contribute to the enhancement of student learning experiences.

Based on the explanation above, this study aims to develop interactive media assisted by the Canva application to support students' critical thinking skills. As in previous studies, Canva-based media can improve student learning outcomes (Padlia, 2024; Ratnasari et al., 2024). Considering the influence of Canva-based interactive media on student competence, this study will focus on developing interactive multimedia assisted by Canva.

Research Methods

The method used is research *and development* (R&D) with the ASSURE model. In the ASSURE development model there are 6 stages, namely: 1) *Analyze learners*; 2) *State objectives*; 3) *Select methods, media, and materials*; 4) *Utilize materials and media*; 5) *Require learner participation*; 6) *Evaluate and revise* (Rustandi et al., 2022). The research will be conducted at SDN Lesanpuro 1 Malang City on Wednesday, July 17, 2024. The primary data collection method employed were observation, questionnaires, *pre-tests* and *post-tests*, and documentation. The learning media used through media expert validation tests and material expert validation with the following criteria.

Based on the Table 1, the validity criteria can be used if it reaches a percentage above 70.01% with minor revisions, with the criteria $r_{xy} > r_t$ (5%). Quantitative data were obtained from the analysis of expert questionnaire data on material, media, practice, and effectiveness as users determined using a Likert scale assessment.

To measure the effectiveness of media on students' critical thinking skills, tests were conducted at the beginning and end of learning activities. The collected data will be analyzed quantitatively and the N-Gain test to measure the effectiveness of learning media show on Table 2. The criteria are show on Table 3.

Table 1. Validity categories

Achievement Rate (%)	Criteria	Test Decision
85.01-100.00	Very valid	Can be used without revision
70.01-85.00	Quite valid	Usable, needs revision
50.01-70.00	Less valid	Can be used, needs major revision
01.00-50.00	Invalid	Not to be used

Table 2. Normalized Gain Criteria

N-Gain Value	Information
$0,70 \leq g \leq 100$	Tall
$0,30 \leq g < 0,70$	Currently
$0.00 < g < 0.30$	Low
$g = 0.00$	There was no increase
$- 1,00 \leq g < 0,00$	There was a decline

Source: (Sukarelawan et al., 2024)

Table 3. Criteria for Determining Effectiveness

Percentage (%)	Interpretation
< 40	Ineffective
40 – 55	Less effective
56 – 75	Quite effective
>76	Effective

Source: (Sukarelawan et al., 2024)

Results and Discussions

The results of the needs analysis at SDN Lesanpuro 1 Malang City show that the use of technology in learning has not been effective. Teachers still use conventional media such as books or pictures. This causes learning boredom in most students which impacts on their critical thinking skills. In addition, the lack of access to technology-based media also makes it difficult for students to understand learning content. As a result, technology-enhanced learning resources are required to aid student learning. This study introduces a technology-based learning tool that utilizes Canva to design interactive learning experiences for students. Canva-based multimedia is presented in science subjects on the material of changes in the shape of objects with an attractive design.



Figure 1. Front page view of interactive multimedia assisted by Canva



Figure 2. Display of the interactive multimedia material page on changes in the form of objects using Canva

This learning media has been validated by media and material experts with the following details.

Table 4. Media Expert Validation Results

No	Aspek	Indicator	%
1	Media	Display design	93,33
		Video	100
		Animation	100
		Ease of use of media	100
Average			98,33

Table 5. Results of Material Expert Validation

No	Aspek	%
1	Material	87,5
2	Use of language	90
Average		88,75

Table 4 shows the results of the validation of interactive multimedia media experts assisted by Canva. The display design indicator is 93.33%, while the video, animation, and ease of use indicators of the media are each at 100%. Thus, the average validation result of the media expert is 98.33% with a very valid category based on the validity category in Table 1.

According to Table 5, the interactive multimedia created with Canva was deemed highly valid by experts, receiving an overall score of 88.75%. This assessment took into account both the content and the language used in the material. With scores of 87.5% and 90% respectively, the media demonstrated strong validity and is appropriate for use in teaching and learning.

The practicality test results of the teacher's Canva-enhanced interactive multimedia are presented in Table 6.

Table 6. Results of Teacher Practicality Test

No	Aspect	Indicator	%
1	Media	Curriculum	80
		Material	80
		Grammar	90
		Display design	78.18
		Video	80
		Animation	80
		Ease of use of media	80
		Accuracy	70
		Clarity	80
		Interest/attention	70
		Quiz quality	80
		Can have an impact on students	80
Average			79,015

It can be seen that the indicators used in the teacher practicality test consist of 12 indicators with one test teacher. The test is designed to determine whether the learning media is suitable for practical application and user-friendly in its operation (Revita, 2019). Based on Table 6, the teacher practicality test obtained an average percentage of 79.015% which is included in the practical category. Based on teachers' perspectives, learning media are considered practical and easy to implement. In addition, the practicality test was also applied to students with the following results.

Table 7. Results of Student Practicality Test

No	Aspect	Indicator	%
1	Media	Attracting students' interest	85.8

		Presentation of material	81.2
		Motivating	89.6
Average			85.53

Table 7 shows the results of the practicality test given to students with 3 indicators as a reference for assessment. From the three indicators, an average percentage of 85.53% was obtained in the practical category. Thus, both teachers and students found the learning media practical and user-friendly.

In order to evaluate the efficacy of learning media in fostering students' critical thinking abilities, a pre-test and post-test design was employed, with data analysis conducted using the N-Gain test.

Table 8. N-Gain Test Results

Data	Average	%	Category
N-Gain Score	0.657	65.7	Currently

Based on *pre-test* results, the average score obtained by students was 62.5 and increased to 87 in the *post-test*. Additionally, the N-Gain test indicated a moderate impact of the Canva-based interactive multimedia on students' critical thinking skills. The N-Gain test is used to provide an overview of the overall effectiveness of learning on student learning outcomes (Sukarelawan et al., 2024). The level of learning effectiveness is in the fairly effective criteria based on the criteria for determining effectiveness in Table 3.

The use of technology in learning is considered capable of increasing students' interest in learning, thus affecting student learning outcomes (Suyuti et al., 2023). This is because students will pay special attention to learning that has an impact on understanding the material. Direct interaction of students on technology-based learning media is an added value in providing direct learning experiences. That way, students are able to construct their own understanding or knowledge. As with constructivist learning theory, knowledge will be more meaningful when students are able to build their own understanding (Mulyati, 2018).

Based on Table 8 the validation and practicality tests conducted on interactive multimedia assisted by Canva, the learning media has been deemed valid in terms of media, material, and practicality by both teachers and students, indicating its user-friendliness. Classroom observations during the implementation of the learning media revealed enthusiastic student engagement. The increase in student learning motivation is accompanied by a corresponding improvement in their critical thinking skills, as evidenced by a significant increase in test results (N-Gain test of 0.657) between the pre-test and post-test. Therefore, it can be concluded that the learning media is valid, practical, and effective in fostering students' critical thinking skills.

Conclusions

Based on the research findings, the learning media demonstrated validity, practicality, and effectiveness in fostering critical thinking abilities among elementary school students. The validation process involved two experts: media experts and material experts. The practicality test was conducted by calculating the average percentage of responses from teachers and students on a practicality questionnaire. Learning media was also declared quite effective based

on the results of the N-Gain *pre-test* and *post-test* during learning. Students' critical thinking skills are demonstrated through working on questions in the media containing several HOTS (*High Order Thinking Skill*) questions and analyzing the application of learning content in everyday life. Enhanced student learning motivation is strongly correlated with improved student learning outcomes, as it cultivates greater interest in learning. This study provides an overview of the development and effectiveness of the implementation of interactive multimedia media assisted by Canva using material on changes in the state of objects. This learning media can also be applied in other materials or subjects by combining the right learning strategies.

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