

The Development of Google Sites-Based Social Studies Learning Media on ASEAN Material to Enhance Students' Critical Thinking Skills

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Edukasi IPS

Volume 8, Issue 1 (2025)

E-ISSN : 2620-8768



Received : 30 June 2025

Accepted : 12 January 2025

Published : 7 March 2025

Abstract

This research aims to develop a Google Sites-based learning media for Social Studies, specifically targeting ASEAN material, and to assess its effectiveness in enhancing students' critical thinking skills at MTsN 2 Ponorogo. The study was conducted as a Research and Development (R&D) project using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). Data were collected through observation, interviews, and questionnaires, with validations from media and content experts. Results showed that the developed media was highly feasible, receiving an 85% score from content experts and 87% from media experts. The media received very positive feedback from both teachers (90%) and students (82.88%). Pretest and posttest comparisons revealed a significant improvement in students' critical thinking skills, supported by a T-test ($p = 0.000 < 0.05$) and an N-Gain score of 60.24%, classified as moderately effective. These findings suggest that Google Sites-based media is a valid and effective tool to enhance critical thinking in Social Studies education.

Keywords: Development, Learning Media, Google Sites, Critical Thinking, ASEAN.

1. Introduction

The Industrial Revolution 4.0 changed learning from teacher-centered to student-centered (Sabaruddin, 2022). Teachers are important in classroom learning and impact students' knowledge, attitudes, and skills. Teachers transfer knowledge and help students develop so they can mature. Teachers must prepare students for a future rooted in culture (Munastiwi, 2023). In today's educational process, updates are necessary to improve both quality and quantity. To enhance the quality and quantity of education, it is essential to develop and innovate, especially within the components of education itself, such as curriculum development, teaching methods, learning media, and the availability of educational facilities and infrastructure (Thornhill-Miller, 2023). For the learning process to run

effectively and with quality, teachers are required to be more creative and innovative in creating a learning atmosphere that motivates students to study optimally and produce a high-quality future generation (Gonzalez-Cacho & Abbas, 2022). Thus, education plays a crucial role in advancing human resources. It serves as a tool to direct, develop, and guide people toward a better life. Education is a key instrument in life to nurture and guide individuals into becoming high-quality human resources with cognitive, affective, and psychomotor abilities (Parong, 2021).

Education requires innovation to keep up with the demands of a modern era, one of which is the development of learning media (Silvis, 2022). Currently, many schools rarely use or optimize learning media in classroom or extracurricular instruction. As a result, the learning process becomes less impactful, monotonous, and boring, lowering students' motivation to learn (Srimadhaven., 2020). Even when learning media is used, it often relies solely on PowerPoint or video, which may still feel ineffective and boring to students. This underutilization of effective learning media results in suboptimal learning. In fact, learning media plays a vital role in bridging students and subject matter to aid comprehension (Nam & Jung, 2022).

Instructional media is defined as a tool to help teachers explain subject matter more easily to students. The used of instructional media can increase interest and motivation, positively impacting students' psychology. Azhar Arsyad defines learning media as something that can standardize student perceptions, encourage interest, and make content easier to understand (Ge, 2021). From these perspectives, it can be concluded that learning media supports and simplifies students' understanding of the material. With the right learning media, educators can effectively convey instructional messages to achieve educational goals .

Critical thinking is an analytical process used to understand, evaluate, and make decisions based on logic and evidence (Dickins & Reid, 2022). Critical thinking involves analyzing arguments, evaluating evidence, and making rational judgments (Li et al., 2020). This ability helps students solve problems and handle complex situations in a continuously evolving world (Kocak et al., 2021). In education, critical thinking enables students not just to memorize but also to understand, analyze, and apply learned concepts (Huang et al., 2017). Observations at MTsN 2 Ponorogo indicate that students' critical thinking skills remain low. This is evident from their tendency to guess multiple-choice questions without proper analysis and their difficulty identifying core problems or proposing accurate solutions. Students also rarely reassess the validity or relevance of their answers, highlighting a lack of reflective evaluation. Thus, it is essential to improve students' critical thinking skills at MTsN 2 Ponorogo so they can better understand and process information deeply.

Ideally, Social Studies (IPS) instruction should incorporate methods that foster critical thinking, such as discussions, problem-solving, and interactive media. However, observations show that teaching in MTsN 2 Ponorogo still relies heavily on traditional lectures, making learning unengaging and hindering students' critical thinking development. Student achievement in IPS remains low, with many students paying little attention and talking during lessons. This reveals a gap between ideal instructional practices and classroom reality. Based on observations, Social Studies at MTsN 2 Ponorogo remains dependent on conventional lecture methods. This issue cannot be ignored, as Social Studies is deeply related to real-life societal dynamics and must be learned thoroughly. Therefore, this study seeks to develop modern and relevant IPS learning media using Google Sites, specifically for ASEAN materials, to make learning more engaging.

Google Sites is a web-based platform developed by Google that enables users to create and manage websites without requiring advanced technical or programming skills (Abdjul, 2023). The

platform provides an intuitive interface and a range of customizable templates, allowing users to design structured and visually appealing web pages with relative ease (Marini et al., 2025). Through Google Sites, various multimedia elements such as images, videos, documents, and interactive content can be seamlessly embedded to enrich the presentation of information (Culajara, 2022). This functionality makes the platform particularly suitable for educational contexts, where instructional materials need to be organized and accessible in a coherent digital environment (Wulandari et al., 2023). In addition, Google Sites supports real-time collaboration, enabling multiple users to edit and update content simultaneously (Yulianti, Erni, 2025). Consequently, the platform facilitates not only the dissemination of information but also interactive and collaborative learning experiences in digital settings. This study aims to: (1) Develop a Google Sites-based Social Studies learning media on ASEAN material that is feasible for instructional use; and (2) Understand students' responses to the use of this media in Social Studies. This research is expected to contribute to innovations in IPS learning media and serve as a reference for teachers to integrate technology into their teaching practices.

2. Research Methods

This research uses a quantitative, quasi-experimental research method with a pre-test and post-test design (Creswell & Guetterman, 2019). The variables in this research consist of learning media as the independent variable, namely YouTube video media, and the dependent variable, namely student learning motivation. This research aims to measure the effectiveness of implementing YouTube video media to increase student learning motivation in social studies learning. The population in this study was all class VIII students at SMP Negeri 2 Badau, totaling 75 students divided into three classes. The sample for this research was taken using a cluster random sampling technique (Fraenkel et al., 2023), one class was used as a control class, namely class VIII B, with 25 students, and the experimental class, namely class VIII C, with 25 students.

The development of Google Sites-based learning media in this study employed a Research and Development (R&D) approach. R&D is a type of research used to produce a product and test its effectiveness. This method aims to develop and validate educational products. The development model used was ADDIE, consisting of five stages: Analysis, Design, Development, Implementation, and Evaluation (Branch & Instructional, 2010). This study was a level 3 development research, aimed at improving existing products. The steps included examining current products, developing improved versions, conducting trials in the field, and revising the product based on expert evaluations until the product met the required standards. The developed product was a Google Sites-based learning media on ASEAN material. Data analysis techniques included both qualitative and quantitative approaches. Qualitative data were gathered from feedback and suggestions provided by media experts, content experts, IPS teachers, and students. Quantitative data were collected through questionnaires. Three types of questionnaires were used: (1) Media expert validation to assess the media product, (2) Content expert validation aimed at IPS teachers to assess content accuracy and instructional value, and (3) Student response questionnaires regarding the learning media. All responses used a Likert scale with five levels.

Data analysis involved qualitative data from expert feedback and quantitative data from validation questionnaires. Three types of questionnaires were used: (1) media expert validation; (2) content expert validation by Social Studies teachers; and (3) student response surveys. Responses were rated on a five-point Likert scale. Validation scores were analyzed using the formula (1). The percentage was then interpreted using the Likert scale as illustrated in Table 1.

To test the research hypothesis, a paired sample t-test was conducted using SPSS software. This test aimed to determine whether students' critical thinking skills improved after using Google Sites-based media, by comparing pre-test and post-test scores. The N-Gain score was also calculated to determine the degree of improvement. The N-Gain criteria are presented in Table 2. Effectiveness was categorized based on the criteria presented in Table 3.

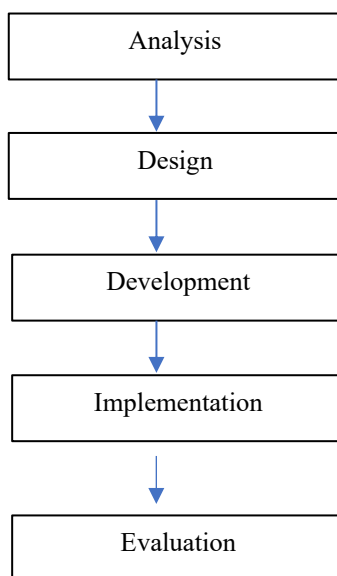


Figure 1. ADDIE Research Stage Scheme.

$$P = \frac{f}{n} \times 100\% \tag{1}$$

Where:

P = percentage score

f = total score obtained

N = maximum possible score

Table 1. Interpretation criteria table

| Score Range | Interpretation |
|-----------------------|---------------------|
| $80\% < x \leq 100\%$ | Highly Feasible |
| $60\% < x \leq 80\%$ | Feasible |
| $40\% < x \leq 60\%$ | Moderately Feasible |
| $20\% < x \leq 40\%$ | Less Feasible |
| $0\% < x \leq 20\%$ | Not Feasible |

Table 2. N-Gain Value Criteria table

| |
|--------------------------------|
| $g < 0.3 =$ Low |
| $0.3 \leq g \leq 0.7 =$ Medium |
| $g > 0.7 =$ High |

Table 3. Effectiveness Criteria Table

| |
|-------------------------------|
| < 40% = Not Effective |
| 40–55% = Less Effective |
| 56–75% = Moderately Effective |
| > 76% = Effective |

3. Results and Discussion

The developed Google Sites-based learning media was validated by content and media experts. Content validation by the Social Studies teacher at MTsN 2 Ponorogo resulted in an average score of 4.2 and a percentage of 85% (Highly Feasible). Media validation conducted by a lecturer in instructional technology scored an average of 4.3 and a percentage of 87% (Highly Feasible). The teacher response scored 90%, categorized as Very Attractive, while student responses reached 82.88%, also categorized as Very Attractive. These results indicate strong acceptance and satisfaction with the media. Learning effectiveness was measured using pretest and posttest data. Pretest scores averaged 68.1, while posttest scores averaged 87.9. A paired sample T-test yielded a p-value of 0.000 (< 0.05), indicating a significant difference in learning outcomes. The N-Gain score was 60.24%, classified as Moderately Effective.

The development of Google Sites-based social studies learning media on ASEAN material for Grade VIII students at MTsN 2 Ponorogo was validated by subject matter experts and media experts. The subject matter expert selected was a competent social studies teacher, while the media expert was a lecturer with expertise in instructional media and development. The trial of the learning media was conducted at MTsN 2 Ponorogo, located on Jl. Ki Ageng Mirah No.79, Japan Village, Babadan Sub-district, Ponorogo Regency, East Java. The limited-scale trial involved one teacher and 50 Grade VIII students.

Two trials were conducted: the first on Friday, January 10, 2025, from 07:00 to 08:20 WIB with 25 students, and the second on Wednesday, January 15, 2025, at the same time with another 25 students. These trials were designed to test both the control and experimental groups, conducted alternately. The researcher used purposive sampling for the trials. This study aimed to develop Google Sites-based social studies learning media on ASEAN material. The research followed the ADDIE development model by Dick and Carey, which includes five stages: Analysis, Design, Development, Implementation, and Evaluation.

Analysis Stage

In the analysis stage, the researcher divided the analysis into several parts. Performance analysis was conducted through interviews with social studies teachers. Based on the interview on Tuesday, December 2, 2024, it was found that the ASEAN material had been taught using practical methods, such as creating mock-ups of tools used to study ASEAN countries. However, classroom instruction still relied heavily on lectures, simplified terminology, textbooks, and worksheets (LKS), and the teacher had not yet found media that aligned with students' needs, particularly for ASEAN material.

Student needs analysis was conducted through interviews with Grade VIII students at MTsN 2 Ponorogo. The results revealed that students found ASEAN material difficult to understand and often did not pay attention in class, resulting in low levels of comprehension. Factual analysis was carried out through observation on December 2, 2024, which showed that teaching methods were still limited to

lectures and simplified terminology, along with textbooks and worksheets. These methods failed to generate interest among students, who were often sleepy, talked among themselves, or showed little curiosity. Goal analysis was conducted through teacher interviews to ensure alignment with the current curriculum. MTsN 2 Ponorogo implements the Merdeka Curriculum using the IPS textbook by Fritz Hotman S. Damanik (PT Masmedia Buana Pustaka). The learning objective for ASEAN is for students to understand the economic, social, and cultural conditions of ASEAN countries.

Design Stage

In this design stage, after identifying student needs, the researcher planned several steps. The selection of learning materials was based on the same IPS textbook used in class, covering ASEAN's history, member countries, and economic conditions. In addition, pre-test and post-test questions were prepared to assess students' initial and final understanding. The researcher then designed the learning media by creating a conceptual framework to ensure that the intended message could be clearly conveyed and easily understood by students. The initial design of the learning media took the form of a website link developed using Google Sites.



Figure 2. Learning Media Link

Development Stage

In the media development stage, the researcher created a prototype version of the learning media, which was still open to revisions in terms of content and components based on expert feedback. The product validation phase was conducted to assess the feasibility of the media before its implementation in the classroom. This validation process consisted of content validation and media validation. Content validation was carried out by the Grade VIII IPS teacher, Mrs. Anik Trisnawati, S.Pd., and the results are presented in Table 4. Based on the material expert validation table, the total score obtained was 76 with a percentage of 85% and an average score of 4.2. Therefore, the validation results can be categorized as "Very Eligible." The percentage for the learning aspect was 85%, while the percentage for the material substance aspect was also 85%.

Media validation was conducted by Mr. Mukhlas Habibi, M.Pd., a lecturer at IAIN Ponorogo, and the results are also presented in Table 5. Based on the media expert validation table, the total score obtained was 100 with a percentage of 87% and an average score of 4.3. Thus, the validation results can be categorized as "Very Eligible".

Table 4. Results of Material Expert Validation of the Learning Media

| Aspect | Avg. Score | Percentage | Criteria |
|--------------------|------------|------------|-----------------|
| Instructional | 4.2 | 85% | Highly Feasible |
| Material Substance | 4.2 | 85% | Highly Feasible |
| Overall | 4.2 | 85% | Highly Feasible |

Table 5. Results of Media Expert Validation of the Learning Media

| Aspect | Avg. Score | Percentage | Criteria |
|----------------------|------------|------------|-----------------|
| General | 4.6 | 93% | Highly Feasible |
| Software Engineering | 4.2 | 84% | Highly Feasible |
| Visual Communication | 4.3 | 87% | Highly Feasible |
| Overall | 4.3 | 87% | Highly Feasible |

Implementation Stage

At the implementation stage, the researcher conducted several activities. To determine the attractiveness of the developed media, a feasibility test was carried out using a questionnaire completed by the Grade VIII social studies teacher at MTsN 2 Ponorogo. The results are presented in Table 6, which shows that out of a maximum score of 100, the teacher gave a score of 90, resulting in a percentage of 90% and categorized as “Very Attractive.”

To calculate the attractiveness percentage, the formula $P = f/n \times 100\%$ was used. Based on this formula, the calculation was $90/100 \times 100\% = 90\%$. After obtaining the percentage, it was then grouped into interpretation criteria based on the Likert scale, as shown in Table 7. According to the Likert scale criteria, a percentage within the range of $80\% < x \leq 100\%$ is categorized as “Very Attractive.” Therefore, the teacher’s assessment of 90% falls into the “Very Attractive” category.

To determine students’ responses to the attractiveness of the learning media, a trial was conducted involving 50 eighth-grade students of MTsN 2 Ponorogo. The results are presented in Table 6, which shows that from a maximum score of 5000, the achieved score was 4144, resulting in a percentage of 82.88% and categorized as “Very Attractive.” After calculating the students’ attractiveness percentage, the result was interpreted using the Likert scale criteria shown in Table 9. Based on the calculation, $4144/5000 \times 100\%$ equals 82.88%. According to the Likert scale interpretation, a percentage within the range of $80\% < x \leq 100\%$ is classified as “Very Attractive.” Therefore, the students’ assessment of 82.88% also falls under the “Very Attractive” category.

Table 6. Percentage of Media Attractiveness by the Teacher

| Respondent | Maximum Score | Achieved Score | Percentage | Category |
|------------|---------------|----------------|------------|-----------------|
| Teacher | 100 | 90 | 90% | Very Attractive |
| Students | 5000 | 4144 | 82.88% | Very Attractive |

Table 7. Attractiveness Interpretation Criteria (Likert Scale)

| Score Range | Interpretation |
|-----------------------|-----------------------|
| $80\% < x \leq 100\%$ | Very Attractive |
| $60\% < x \leq 80\%$ | Attractive |
| $40\% < x \leq 60\%$ | Moderately Attractive |
| $20\% < x \leq 40\%$ | Less Attractive |
| $0\% < x \leq 20\%$ | Not Attractive |

Table 9. Attractiveness Interpretation Criteria (Likert Scale)

| Score Range | Interpretation |
|----------------|-----------------------|
| 80% < x ≤ 100% | Very Attractive |
| 60% < x ≤ 80% | Attractive |
| 40% < x ≤ 60% | Moderately Attractive |
| 20% < x ≤ 40% | Less Attractive |
| 0% < x ≤ 20% | Not Attractive |

Evaluation Stage

The evaluation stage is the final step in the ADDIE development model. In this stage, the researcher conducted a summative evaluation at the end of the learning media implementation to determine the improvement in students' skills before and after using the developed media. To measure this improvement, pretest and posttest questions were provided within the learning media. The minimum mastery criterion (MMC) for this session was set at a score of 70, with at least 70% of students required to achieve this benchmark. The results of the pretest and posttest are presented in Table 10, which shows that the average pretest score was 68.1, while the average posttest score increased to 87.9. These results indicate an improvement in students' scores after using the learning media. Furthermore, the data show that all 50 students met the minimum mastery criterion.

To determine the effectiveness of the learning media, a hypothesis test and an N-Gain test were conducted. The hypothesis test used a one-tailed t-test with SPSS software and was considered significant if the significance value was less than 0.05. The results presented in Table 11 show that the significance value was 0.000, which is less than 0.05, indicating a significant difference in student learning outcomes before and after using the Google Sites-based learning media.

After confirming the hypothesis, the N-Gain test was conducted to measure the level of improvement in learning outcomes and critical thinking skills by calculating the difference between pretest and posttest scores. The results presented in Table 12 show that the average N-Gain score was 60.24%, which falls into the “Moderately Effective” category. Further analysis indicates that 18 out of 50 students achieved high-level improvement, 27 students were categorized as medium, and 5 students were categorized as low. Overall, the implementation of the Google Sites-based social studies learning media in improving students’ learning outcomes and critical thinking skills on ASEAN material in Grade VIII is considered moderately effective, as reflected by the N-Gain percentage of 60.24%.

Table 10. Pretest and Posttest Results

| Test Type | Average Score |
|-----------|---------------|
| Pre-Test | 68.1 |
| Post-Test | 87.9 |

Table 11. One-Tailed T-Test Results

| Paired Samples Test | | | | | | | | | |
|---------------------|--------------------|------|--------|--------------------|---|----------------|-----------------|-------|-------|
| | Paired Differences | t | df | Sig. (2-tailed) | 95% Confidence Interval of the Difference | | | | |
| | | | | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper |
| | | | | | | | | | |
| Pa | pretest - | - | 10.592 | 1.4980 | - | - | - | 49 | .000 |
| ir | posttest | 19.8 | 64 | 3 | 22.810 | 16.789 | 13.2 | | |
| 1 | 0000 | | | | 40 | 60 | 17 | | |

Table 12. Results of Improvement in Students' Critical Thinking Skills

| No | Critical Thinking Indicator | Sub-Skills | Bloom's Taxonomy | Improvement Results After Using Google Sites |
|----|-----------------------------|---|------------------|--|
| 1 | Analysis | Focusing questions, analyzing arguments, asking and answering questions | C4 | Students became more active in asking questions and analyzing information critically |
| 2 | Synthesis | Identifying terms, considering decisions, identifying assumptions | C5 | Students were able to connect ASEAN concepts to real-world contexts |
| 3 | Problem Solving | Assessing source credibility, making observations, evaluating reports | C5 | Students could differentiate valid information and solve simple social issues |
| 4 | Conclusion | Drawing and considering deductions | C4 | Students became more skilled in drawing conclusions from discussions and materials |
| 5 | Evaluation | Determining actions, participating in discussions | C5 | Students showed increased ability to assess ASEAN's impact and engaged actively in discussions |

4. Conclusion

Based on the results of the development research on the development of Google Sites-based social studies learning media on ASEAN materials to improve students' critical thinking skills at MTsN 2 Ponorogo, several conclusions can be drawn.

First, the product developed in this study is a Google Sites-based social studies learning media created using the ADDIE development model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. To measure the validity of the developed product, validations were conducted by subject matter experts and media experts. The validation results indicate that the learning media is feasible for use. The material expert validation obtained a score of 85% (highly feasible), while the media expert validation obtained a score of 87% (highly feasible). Following the validation process, the product was revised based on the validators' suggestions, including improvements to the display and navigation of the Google Sites to make it more interactive, as well as adjustments to the material to ensure its relevance to junior high school social studies learning.

Second, the Google Sites-based social studies learning media received positive responses from both teachers and students. Based on the acceptability test results, the teacher gave a score of 90%, which falls into the “very attractive” category, while the students gave a score of 82.88%, also categorized as “very attractive.” These results indicate that the learning media successfully attracted students’ interest in studying social studies, particularly ASEAN materials, and facilitated their understanding of the content through interactive visual presentations and user-friendly navigation.

Third, the Google Sites-based social studies learning media has been proven to improve students’ critical thinking skills in understanding ASEAN materials. This is supported by the comparison of pretest and posttest results. The N-Gain test results from 50 students showed an improvement of 60.24%, which is categorized as “moderately effective.” Among the students, 18 achieved a high-level improvement, 27 were in the medium category, and 5 were in the low category. Therefore, this learning media is considered effective in enhancing students’ critical thinking skills, particularly in the aspects of analysis, synthesis, problem-solving, drawing conclusions, and evaluation in understanding ASEAN content.

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