

Development of Instructional Media *Jelas* for Elementary School Students in Understanding Asean

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Abstract: This study aims to identify the needs for application media in teaching ASEAN-related material to sixth-grade elementary school students and to evaluate the effectiveness of the ASEAN Roaming application. The research follows a development methodology (research & development) as outlined by Sugiyono (2013: 407). Data analysis methods include the Gain test and T-Test. N-Gain analysis determines the difference between post-test and pre-test scores, while the T-Test evaluates the effectiveness of the JELAS media on cognitive learning outcomes. The ASEAN Roaming application, developed using the Unity game engine, aligns with core and basic competencies of the 2013 curriculum. The application features materials, games, songs, and evaluation problems. After validation, the application received a score of 86.53%, categorizing it as valid. Implementing the ASEAN Roaming application in the experimental class resulted in an N-Gain score of 0.4, classified as medium. Effectiveness was assessed by comparing cognitive test results between control and experimental classes, yielding a t-value of 4.84. The findings suggest that the ASEAN Roaming application is effective for social studies learning in sixth grade and encourages teachers to incorporate creative methods in their teaching.

Keywords: Development, media, *Jelas*, ASEAN, social science

1. Introduction

Learning social science can be a tedious process for some students. The main issues include monotonous teaching methods, an overload of material, and teachers' inability to effectively transfer their knowledge to students (Bulmer, 2021). While the solutions to these issues might seem straightforward, they are actually quite challenging to implement due to teachers' limitations and the large number of students. Moreover, there is an urgent need to leverage technology to address these challenges.

One commonly proposed solution is to make the social science learning process more creative and engaging (Pienimäki et al., 2021). However, this approach oversimplifies the problem, as student boredom is not the only issue. Other significant challenges include maintaining students' concentration and excitement, as well as ensuring they understand the material correctly. According to Utaminingsih (2021), student-centered teaching can encourage participation, increase motivation, improve communication skills, and enhance learning outcomes. Limited understanding can lead to further mistakes, necessitating a creative teaching process and effective scaffolding to help students build their knowledge. Ismaya and Santoso (2019) also highlight the inadequacy of traditional methods that provide a general and scattered introduction to social studies.

Various methods have been applied to address these issues, such as social experiments using the storytelling method. Storytelling helps students use their imagination to remember material rather than just memorizing facts. One of its advantages is its adaptability to various media, including digital platforms (Moradi & Chen, 2019). Using digital platforms can significantly amplify the impact of education by allowing students to learn independently, even before teachers can explain the material. Setiadi et al. (2016) noted that a research culture among teachers can enhance professionalism. In our busy world, where coordinating schedules is challenging, digital media platforms can ensure that education is accessible without concerns about distance and other technical matters. Effective learning strategies, which

may include various approaches, methods, techniques, or models, are crucial for developing students' problem-solving abilities (Fajrie, 2022). For instance, videos tailored to match students' psychological profiles can help them concentrate and learn effortlessly. Effective storytelling involves not only words but also managing the visual aspects of digital platforms. Fajrie et al. (2020) emphasized the importance of functional requirements in capturing and delivering knowledge. Key visual aspects include creating sympathetic and attractive characters and building stories around these characters to help students understand the material. Introducing color palettes, symbolism, and other visual elements can evoke emotional connections to historical events (Roth, 2021). This approach has proven effective and efficient because emotional experiences help students understand and remember concepts better than rote memorization.

Given the need for mass education and the scalability of the storytelling method, a digital platform is essential. To address this, researchers developed a digital platform called JELAS (Jelajah ASEAN) to teach social science independently. Through this platform, students can explore ASEAN countries and learn about their historical, cultural, and economic aspects. ASEAN studies are particularly relevant for Indonesia due to the region's geographic and economic significance. ASEAN partnerships enhance trade and regional economic cooperation, and a free trade zone facilitates labor mobility across member countries (Anwar, 2020). By studying ASEAN, students can maximize their potential and contribute to Indonesia's development. This study aims to development of instructional media *jelas* for elementary school students in understanding Asean.

2. Literature Review

Learning is a process of transferring knowledge, supported by various components that contribute to its success. One of these critical supports is learning media. According to Arsyad (2015), learning media encompasses anything that can be used to convey information during the teaching and learning process, stimulating students' attention and interest in learning. Utaminingsih et al. (2023) also emphasizes the importance of teachers' accuracy in choosing appropriate learning models when developing teaching materials. Each learning medium has distinct characteristics based on the content being studied, making the alignment of material and media crucial for effective learning.

In the context of social studies, it is essential to consider the subject's characteristics when implementing learning strategies. Suad et al. (2021) highlight that media and teaching materials are vital for helping students understand concepts more easily. Intellectual empowerment and contextualization are key features of social studies learning in elementary schools. Said Hamid Hasan (in Susanto, 2014) categorizes the objectives of social sciences learning, particularly social studies, into three main areas: developing students' intellectual abilities, fostering a sense of responsibility as community and national citizens, and promoting personal self-development.

Jelajah ASEAN, or JELAS, is a learning medium developed through an Android application, designed to facilitate students' understanding of ASEAN. This interactive and varied display makes it easier for students to concentrate and engage with the material. This study aims to identify the need for application media in teaching ASEAN awareness to sixth-grade elementary school students and to evaluate the effectiveness of the ASEAN Exploration Application (JELAS) in this context.

3. Methodology

This research follows a series of steps introduced by Sugiyono (2013) to develop a new product and analyze its use in social science instruction. The steps are as follows: 1) Identifying Opportunities and Challenges: This step explores the potential benefits and issues of creating a new product, understanding its possible outcomes, and anticipating any difficulties that might arise; 2) Collecting Information: Relevant data is gathered to inform the development process, including market research, user feedback, and technical information; 3) Creating the Product Design: The product is designed, focusing on its appearance, features, and functionality; 4) Checking the Design: The design is validated to ensure it meets the intended goals and functions as expected, involving simulations or tests; 5) Making Changes to the Design: Necessary changes are made to address any issues identified during the design validation; 6) Testing the Product: Trials or tests are conducted to evaluate the product's performance in real-world scenarios and identify any remaining issues; 7) Revising the Product: Based on the trial results, further revisions are made to enhance the product's performance and usability; 8) Testing the Product's Usage: Potential users test the product in their environments, uncovering additional challenges or areas for improvement; 9) Revising the Product Again: Additional changes are made based on feedback from real-world usage trials; and 10) Producing the Product at Scale: After completing all testing and revisions, the product is manufactured in larger quantities for public sale.

The analysis focuses on media use in social science instruction conducted on April 12th and 14th, 2023. Data was collected through interviews and observations during classroom instruction. Interviews with two sixth-grade teachers in the Kartini Cluster revealed a lack of media integration in teaching about ASEAN. The findings showed that students were primarily required to memorize facts from textbooks rather than explore information through media-based learning (Kurniawati, 2022; Yasin, 2021; Afifah, 2017). Respondents indicated that media-based learning had not been fully integrated with technological applications. Based on the feedback, the researcher analyzed responses regarding media involvement in social science teaching about ASEAN. The research was further supplemented by examining teaching

materials and equipment statistics for sixth-grade students. The findings indicate that ASEAN media-based learning primarily relies on images and lacks interactive student engagement.

4. Results and discussion

At this stage, I analyzed the subjects' core and basic competencies. Based on this analysis, the developed core competencies are as follows: 1) Core Competency 1: Understanding factual and conceptual knowledge by observing, questioning, and experimenting based on curiosity about oneself, God's creations, and activities, and objects encountered at home and school; and 2) Core Competency 2: Presenting factual and conceptual knowledge in explicit, systematic, logical, and critical language, in aesthetically pleasing work, in movements that reflect a healthy child, and in actions that reflect the behavior of a faithful and morally upright child.

To achieve these competencies, I broke them down into several aspects. For basic information, the ASEAN region has geographical, socio-cultural, economic, and political characteristics. After analyzing the core and basic competencies, the next step was formulating learning indicators. I developed the indicators by referring to theoretical approaches (Bulmer, 2021; Byrne & Callaghan, 2022; Gopalan et al., 2020). The indicators used are: 1) Explaining the history of the establishment of ASEAN; 2) Listing the ASEAN member countries; and 3) Describing the identities of countries based on their characteristics. Figure 1 shows the development process of JELAS application.

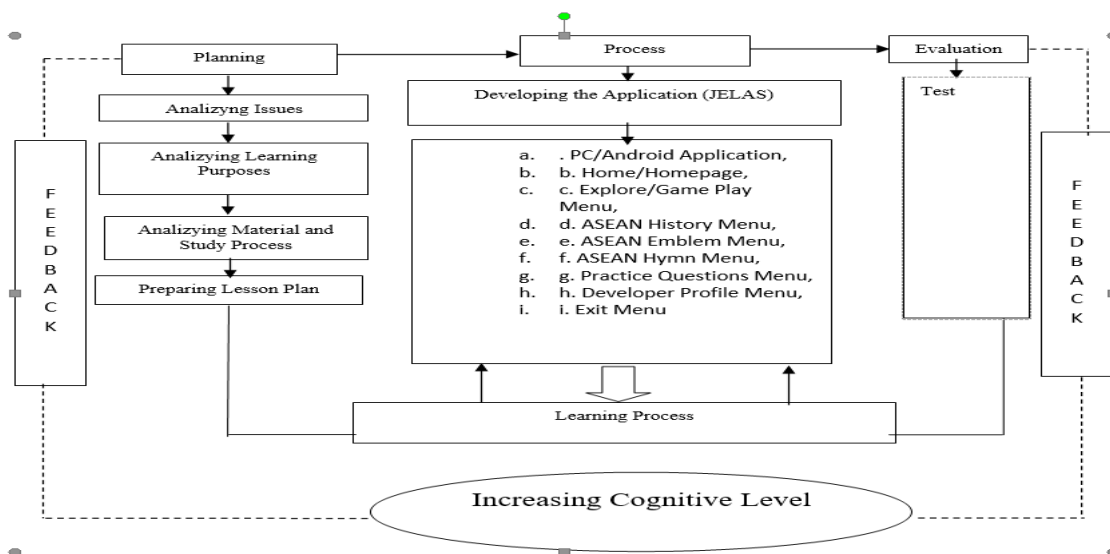


Figure 1. Development process of JELAS application

Following the formulation of indicators, the next step was to define learning objectives. The objectives are: 1) Students can explain the history of the establishment of ASEAN; 2) Students can list the ASEAN member countries; and 3) Students can describe the identities of countries based on their characteristics. To achieve these objectives, lessons covered include: 1) ASEAN history; 2) Reasons for the formation of ASEAN; 3) Objectives of establishing ASEAN; 4) ASEAN anthem; and 5) ASEAN member countries and their identities. Figure 2 shows the interface design of JELAS application.



Front page

Home page

Homepage Section



Figure 2. Interface design of JELAS application

The feasibility of the designed media was validated by media experts and refined based on field issues. The ASEAN exploration application media for 6th-grade students was validated by the experts that assessed the media guidebook for its content. After validation, the ASEAN Exploration Application media was used in social studies learning. The effectiveness of the media was assessed using the Gain test and the independent samples t-test between control and experimental groups. The control group at SDN 2 Mrayun did not use the ASEAN Exploration Application, while SDN Jinanten served as the experimental group using the application.

In the control group, the initial average score was 49.75, which increased to 71.50. The variance (s^2) was 126.5, and the standard deviation (s) was 11.25, with an N-gain of 0.42, categorized as a moderate improvement. In the experimental group, the initial average score was 39, which increased to 87. The variance (s^2) was 61.58, and the standard deviation (s) was 7.83. The N-gain calculation yielded 0.78, categorized as a high improvement.

The effectiveness of the media is determined based on the performance analysis of the control and experimental groups. For the control group, the average score was 71.50, with the highest score at 85 and the lowest at 35. The variance (s^2) was 126.58, with a standard deviation (s) of 11.25. The N-gain for the control group was 0.42, categorized as a moderate improvement. For the experimental group, the average score was 87.00, with the highest score at 95 and the lowest at 70. The variance (s^2) was 61.58, with a standard deviation (s) of 7.85. The N-gain for the experimental group was 0.78, categorized as high improvement (see Table 1).

Table 1. Comparison of Experiment Class and Control Class

Comparison	Control Class	Experiment Class
Post-test after using JELAS application	71.50	87.00
Higher Scores	85.00	95.00
Lowest Scores	35.00	70.00
Varian Values (s^2)	126.58	61.58
Deviation (s)	11.25	7.85

The t-test calculation showed a calculated t-value (t-test) of 4.84, compared to a t-table value of 1.73 at a significance level of $\alpha = 5\%$. Since the calculated t-value is greater than the t-table value, it indicates that the JELAS learning media is effectively used in the teaching process. This finding supports previous research (Saman & Ratnasari, 2022; Kuncahyono et al., 2020; Sudiarjo et al., 2015), which showed that the developed media was valid and of high quality. Questionnaire data revealed average scores from subject matter experts at 92.8% (excellent), instructional design experts at 87.5% (good), instructional media experts at 85% (good), individual testing at 91.6% (excellent), and small group testing at 92.3% (excellent).

Using visual media and the storytelling model combined with creating a "world" has proven beneficial for students in understanding lessons, especially on topics like ASEAN. Both approaches have strengths that enrich students' learning experiences. Similar findings in other research indicate that combining visual media and storytelling with world-building elements is highly effective (Wang et al., 2023; Puspitarini & Hanif, 2019; Darmuki & Hidayati, 2018; Fuady & Mutalib, 2018; Hilmi, 2017). For instance, students can view maps of ASEAN countries, watch videos about regional cultures and diversity, and engage in stories depicting cooperation and interactions within ASEAN. This approach actively engages students in learning, reinforcing their understanding and connecting concepts to the real world. Creativity and innovation in integrating visual media, storytelling, and world-building significantly enrich students' learning experiences.

5. Conclusion

JELAS' has proven to be an effective tool for enhancing learning development. It addresses the common issues of boredom and passive memorization by fostering an environment that promotes understanding and active engagement. By providing dynamic and interactive content, 'JELAS' captures users' attention and maintains their focus, transforming the learning process into an engaging and stimulating experience. The application's success lies in its ability to present information interactively, stimulating interest and curiosity. This approach prevents the monotony often associated with traditional teaching methods and encourages a deeper comprehension of the material. 'JELAS' effectively shifts the focus from rote memorization to active understanding, making learning a dynamic process that promotes exploration and practical application. In summary, 'JELAS' revolutionizes the learning experience by making it engaging, interactive, and oriented towards comprehension. By transforming the way information is presented and absorbed, it encourages students to explore, question, and apply their knowledge effectively.

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