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Effectiveness of Pancasila Education Learning Media Using Google Sites Based on Problem-Based Learning in Fifth Grade

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A B S T R A C T

The purpose of this research was to assess the effectiveness of learning media developed using Google Sites, which is integrated with the Problem-Based Learning model, in enhancing students' learning outcomes in Pancasila Education. Following the implementation phase, the evaluation stage of the ADDIE model was conducted. The effectiveness was tested using pre-tests and post-tests aligned with relevant learning indicators. The participants were fifth-grade students from three elementary schools: SDN 12 V Koto Kampung Dalam, SDN 19 V Koto Kampung Dalam, and SDN 01 V Koto Kampung Dalam. At SDN 12, the average score improved from 59.09% to 90.00%, with an N-Gain of 0.77 (moderate). At SDN 19, scores increased from 64.07% to 95.93%, with an N-Gain of 0.89 (high). At SDN 01, results rose from 60.00% to 93.33%, with an N-Gain of 0.84 (high). All students achieved the minimum competency standard. These results demonstrate that the developed media is effective in enhancing students' understanding and mastery of Pancasila Education. The integration of technology and student-centered learning approaches contributes significantly to learning success. Therefore, this Google Sites-based media is considered feasible and recommended as an alternative instructional tool in elementary school learning environments.

1. Introduction

Education is an essential necessity for individuals throughout life. Without it, they may struggle to grow and risk being left behind in an ever-evolving society. According to John Dewey (as cited in Saraswati et al., 2022), education is a lifelong learning process that provides valuable experiences for self-development. Furthermore, education plays a crucial role in ensuring the sustainability of a nation and enhancing the quality of human resources to face future challenges (Nefillia & Reinita, 2022). In this context, schools and educational institutions serve as the foundation for nurturing critical thinking, creativity, and responsible citizenship. Therefore, the education system must be optimally designed and continuously improved to shape a competent and competitive generation. A robust education

system not only benefits individuals but also drives the progress of society as a whole.

Curriculum reform is crucial for enhancing education quality to improve the quality of education. Currently, Indonesia implements the Merdeka Curriculum, which places greater emphasis on the needs of students compared to the previous teacher-centered approach (Nugraha, 2022). This curriculum aims to create a more flexible and inclusive learning environment, where students are given the opportunity to take an active role in their own learning journey. According to Ansari (as cited in Amini, 2023), the Merdeka Curriculum encourages students' independence in learning, with teachers acting as facilitators who are free to design methods and choose learning media according to students' needs and interests. One form of this freedom is the integration and utilization of continuously developing technology in the learning process. Such an approach not only improves student engagement but also prepares them to navigate and contribute to an increasingly digital world.

Technology plays a pivotal role in overcoming educational challenges. Digitalization expands access to information and enhances students' understanding of learning material (Hasanah et al., 2020), while also fostering critical thinking skills and independence in learning (Armianti et al., 2024). However, the use of technology in education still faces challenges, particularly in strengthening character education at the elementary school level. This is due to the incomplete integration of moral values into technology-based learning systems (Ladiva et al., 2024). Therefore, character education must continue to be developed to remain relevant and effective in line with technological advancements.

Pancasila education plays a vital role in shaping character and instilling awareness of the nation's noble values, especially in the digital era (Yohamintin & Widiansyah, 2024). This education also contributes to teaching tolerance toward diversity, as emphasized in the Merdeka Curriculum (Natalia et al., 2023; Putri et al., 2024). The internalization of Pancasila values not only shapes academically intelligent individuals but also those with strong character and responsibility (Reinita, 2020). Therefore, the integration of digital technology and Pancasila education is necessary so that students can use technology wisely while staying grounded in national values.

Based on a preliminary study through observations and interviews with fifth-grade teachers in the Cluster 1 area of V Koto Kampung Dalam specifically SDN 13 (January 8, 2025), SDN 01 (January 9, 2025), SDN 19 (January 14, 2025), and SDN 12 (January 16, 2025) several challenges were found in the implementation of Pancasila education. Although teachers have tried various teaching models, limitations in method variation and the use of technology remain obstacles. Learning tends to be teacher-centered, with a dominance of direct explanations from the teacher, limiting student participation. Additionally, differences in learning styles and levels of student comprehension add complexity to the learning process. Media such as YouTube videos tend to be passive, lack interactivity, and often do not accommodate the diverse needs of individual students. Limited internet access also hinders the optimal use of digital media.

Previous studies have demonstrated the effectiveness of digital media in Pancasila education, one of which is the Google Sites platform, which is flexible and easily accessible. Fadhillah et al. (2024) showed that the use of Google Sites can increase student motivation and active participation in learning. Additionally, the Problem-Based Learning approach has been proven effective in enhancing student engagement and deepening their understanding of Pancasila values (Alfatheen et al., 2024; Hermuttaqien et al., 2022). However, there is still a lack of research specifically developing Google Sites-based learning media integrated with the Problem-Based Learning model in the context of Pancasila education in elementary schools.

Based on the aforementioned issues, this research aims to develop Google Sites-based learning media using the Problem-Based Learning approach in Pancasila education for fifth grade elementary students. This media is designed to address the need for a more active and contextual learning experience that aligns with students' learning styles and supports the implementation of the Merdeka Curriculum. The urgency of this research lies in the demand for innovative learning media that are relevant to technological developments while still focusing on student character building. The development of Google Sites-based media presents a strategic solution for providing a more engaging, interactive, and meaningful learning experience in Pancasila education.

2. Methodology

This study was conducted to investigate the effectiveness of a learning media based on Google Sites in enhancing the learning outcomes of fifth-grade students in Pancasila education. The research focused on how digital tools can support students' understanding of national values and civic responsibility. The methodology section details the procedures used for data collection, including observation, tests, and documentation techniques applied throughout the study. It also explains the process of data analysis carried out to interpret the results, as well as the instruments utilized to measure learning outcomes.

The primary instruments for this study are pre-tests and post-tests, which were designed to evaluate the students' understanding of Pancasila before and after the use of the Google Sites-based learning media. The pre-test was administered at the beginning of the learning process, while the post-test was given after the intervention, allowing for a comparison of students' progress. These tests included multiple-choice questions, short answers, and essay questions related to the learning objectives of the Pancasila curriculum. The results from these assessments provide valuable data to measure the effectiveness of the learning media in improving student comprehension. This comparison also helps identify areas where further instructional support may be needed.

Data was collected from three elementary schools: SDN 12 V Koto Kampung Dalam, SDN 19 V Koto Kampung Dalam, and SDN 01 V Koto Kampung Dalam. The study involved the administration of pre-tests before the use of the Google

Sites-based media and post-tests following the intervention. Both tests were focused on assessing students' knowledge of Pancasila, with a particular emphasis on understanding its values and their application in daily life. The data obtained were then analyzed to determine the impact of the learning media on students' comprehension and behavior. This process also helped to identify the strengths and weaknesses of the media for further improvement.

Data analysis was conducted using the N-Gain method, as described by Hake (Sabila & Isroah, 2021), to assess the effectiveness of the media. The N-Gain score was calculated using the following formula:

$$\text{N} - \text{Gain} = \frac{\text{Post-test score} - \text{pre-test score}}{\text{Ideal score} - \text{pre-test score}} \text{x}100\%$$

- Post-test score: The score obtained by the student in the post-test.
- Pre-test score: The score obtained by the student in the pre-test.
- Ideal score: The highest possible score on the test.

he utilization of the N-Gain score enables researchers to assess the extent of improvement in students' understanding of Pancasila following the implementation of Google Sites-based instructional media. This approach not only measures the difference between pre-test and post-test scores but also interprets the improvement within qualitative categories. These categories serve to determine whether the learning intervention has a high, medium, or low impact. The N-Gain score is particularly useful in educational research as it standardizes learning gains, facilitating comparisons across different groups or experimental conditions. Classifying the scores into specific categories also aids in drawing conclusions regarding the effectiveness of the applied media. These categories are presented in Table 1 below.

Table 1. N-Gain score categories

***N-Gain* Skor**	**Categories**
$g \geq 0,7$	High
$0,3 \leq g < 0,7$	Medium
$g < 0,3$	Low
$g = 0$	No Improvement
$-1 \leq g < 0$	Decline

Source: Hake (Sukarelawan et al., 2024)

To further evaluate the effectiveness of the instructional media, this study also applies interpretation criteria based on the percentage increase in learning outcomes. These criteria provide a clearer classification of the level of success in achieving the intended learning objectives. This framework allows researchers to identify whether the media is ineffective, less effective, moderately effective, or effective. The classification supports a more comprehensive understanding of the intervention's impact, beyond the mere comparison of test scores. Moreover, it serves as a useful benchmark for future implementations or improvements of similar educational tools. The complete interpretation criteria are presented in Table

2, which outlines the levels of achievement based on the percentage of improvement attained through the intervention.

Table 2. Achievement levels by percentage

Percentage (%)	Level of Achievement
$0 \leq TPS \leq 40$	Not Effective
$40 \leq TPS \leq 56$	Less Effective
$56 \leq TPS \leq 75$	Moderately Effective
$75 \leq TPS \leq 90$	Effective

Source: Hake (Sukarelawan et al., 2024)

3. Result and Discussion

Result

During the implementation phase, the learning process was conducted at three elementary schools, namely SDN 12, SDN 19, and SDN 01 V Koto Kampung Dalam, using Google Sites-based learning media. This media contained learning materials, videos, student worksheets (LKPD), quizzes, and reflection pages tailored to the fifth-grade Pancasila education curriculum. Teachers introduced the platform to students and guided them through various interactive tasks designed to encourage group collaboration, problem-solving, and critical thinking skills. Each learning session followed the Problem-Based Learning model, beginning with the presentation of a contextual problem, exploration of learning resources, discussions, and concluding with presentations and reflections.

As part of this learning process, students attentively observed the instructional videos accessed through Google Sites. These videos were projected at the front of the classroom, allowing all students to view and follow the material simultaneously without difficulty. The use of this digital media provided a more visual and interactive learning experience, greatly aiding students in developing a deeper and more contextual understanding of Pancasila concepts. This learning process can be seen in Figure 1 below.

Figure 1. Students Watching Learning Content via Google Sites Projected in Class

In addition, the use of Google Sites–based learning media enabled students to independently access learning resources and complete digital student worksheets (LKPD). After completing the tasks, students presented their work in front of the class. This activity reflects students' active engagement in the learning process and is illustrated in Figure 2.

Figure 2. Students Presenting Group Results During Google Sites-based Pancasila Learning

The improvement in learning effectiveness across the three schools is clearly depicted in Figure 3 below, which presents a comparison of N-Gain scores and the percentage of students achieving the Minimum Completeness Criteria (KKM) after utilizing the Google Sites–based learning media.

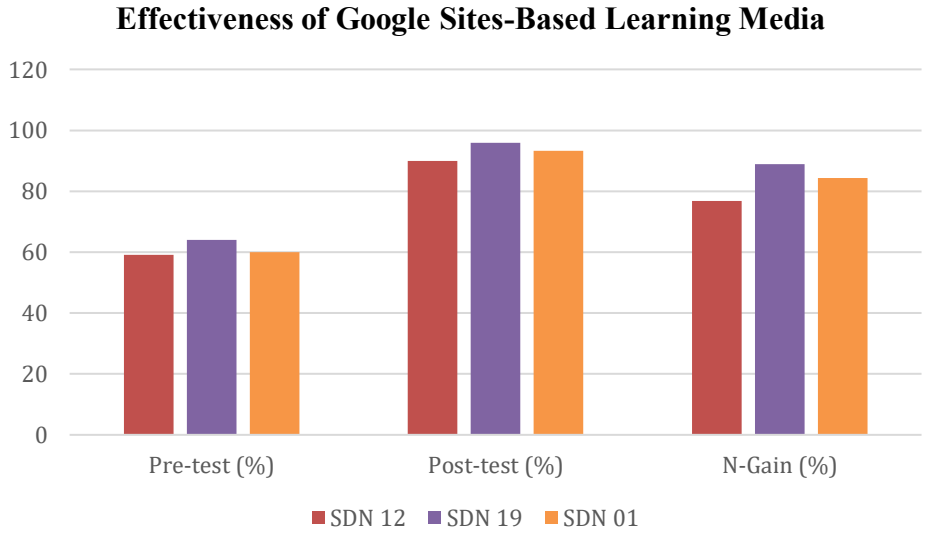

Figure 3. Comparison of Students' Pre-Test and Post-Test Scores Across 3 Elementary Schools

The implementation of Google Sites-based learning media in the Pancasila education subject across three elementary schools in the V Koto Kampung Dalam area demonstrated a significant improvement in student learning outcomes. This

improvement is evident from the increase in average scores from the pretest to the posttest, the N-Gain scores, and the percentage of students who achieved the Minimum Competency Criteria (KKM). The data collected from these three schools consistently indicate that the learning media developed is effective in enhancing students' mastery of the subject matter. Such improvement suggests that technology-based instructional media not only attract students' interest but also effectively support deeper understanding of Pancasila values.

At SDN 12 V Koto Kampung Dalam, students' average pretest score of 59.09% increased to 90.00% on the posttest. The obtained N-Gain score was 0.77 or 76.82%, classified as moderate, indicating a considerable improvement in students' comprehension. Furthermore, the effectiveness level of the learning media reached 74.54%, with all students meeting the KKM threshold. These results demonstrate that the use of Google Sites as learning media can facilitate an effective learning process and significantly enhance students' academic performance in this school.

Similarly, at SDN 19 V Koto Kampung Dalam, a remarkable improvement in student learning outcomes was observed. The average pretest score of 64.07% rose to 95.93% on the posttest, with an N-Gain score of 0.89 or 88.95%, which falls into the high category. The media effectiveness at this school was measured at 80%, and all students successfully met the KKM. These findings suggest that the Google Sites-based learning media combined with a Problem Based Learning approach can yield optimal results by actively engaging students in meaningful learning experiences.

At SDN 01 V Koto Kampung Dalam, students' average pretest score was 60.00%, which increased to 93.33% on the posttest. The N-Gain score reached 0.84 or 84.31%, categorized as high, with a media effectiveness of 76.67%. All students achieved the KKM criteria. These consistent results across all three schools reinforce the conclusion that innovative, technology-based learning media such as Google Sites contribute significantly to improving students' understanding and skills related to Pancasila education.

Discussion

The significant increase in posttest scores across the three elementary schools indicates that the implementation of Google Sites-based learning media positively contributes to students' learning outcomes in Pancasila education. The fact that all students achieved the Minimum Competency Criteria (KKM) serves as a strong indicator of successful comprehension of the instructional material. This finding aligns with Hake's theory (as cited in Sabila & Isroah, 2021), which emphasizes the N-Gain score as a valid measure of learning effectiveness. The moderate to high N-Gain scores observed in this study confirm that the learning media developed is effective in consistently improving students' conceptual understanding.

The success of this learning media can be attributed to its design, which integrates engaging multimedia content, problem-based assignments, and opportunities for students to learn independently at their own pace. Such characteristics align closely

with the principles of Problem Based Learning, emphasizing active student engagement in solving real-world problems and promoting meaningful, contextual learning. Furthermore, the flexible access to instructional materials provided by Google Sites allows students to explore content according to their individual learning needs and capabilities, thereby supporting optimal learning outcomes.

Beyond cognitive improvements, increased student engagement during the learning process plays a crucial role in enhancing learning achievements. The developed media not only serves as a tool for delivering content but also fosters critical thinking, collaboration, and reflective attitudes necessary for applying Pancasila values in daily life. Overall, these findings demonstrate that integrating information technology through Google Sites as learning media is an effective alternative to conventional teaching methods. Innovation based on the Problem Based Learning model addresses the demands of 21st-century education by providing more contextual, participatory, and meaningful learning experiences, thus encouraging further development and expansion of technology-based media in elementary education.

4. Conclusion

The development of learning media using Google Sites, based on the Problem-Based Learning model in Pancasila education for fifth-grade elementary students, has proven to be effective in achieving its intended objectives. The media successfully enhanced students' understanding of core Pancasila values, as evidenced by the consistent improvement in learning outcomes observed across the three schools involved in the study. By integrating contextualized and interactive digital content, the media was able to capture students' interest and foster greater engagement, encouraging active participation throughout the learning process. This dynamic approach not only made the abstract values of Pancasila more relatable and easier to comprehend but also supported students in developing critical thinking and problem-solving skills aligned with the principles of Problem-Based Learning. Moreover, the use of Google Sites as a learning platform provided a user-friendly and accessible tool that could be easily navigated by both teachers and students, enhancing the overall learning experience in an increasingly digital educational landscape.

Given the positive results of this study, future research is encouraged to extend the application of Google Sites-based learning media to other subject areas or educational contexts, particularly in schools facing different challenges or demographic profiles. Exploring the adaptability and effectiveness of this media in diverse learning environments would provide valuable insights into its broader potential and sustainability as an educational innovation. Additionally, longitudinal studies could investigate the long-term impact of such technology-integrated approaches on students' academic achievement and character development, further supporting the integration of digital tools in elementary education. By continuing to refine and expand this media's use, educators and policymakers can better

address the evolving needs of 21st-century learners while promoting meaningful, participatory, and contextually relevant learning experiences.

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