

Development of Google Sites-Based Interactive Learning Media on Historical Relics Material for Fourth Grade Elementary School Students

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Abstract

This study aimed to develop interactive web-based learning media on historical relics material for fourth-grade elementary school students and to examine the feasibility and practicality of the developed media. The study employed a Research and Development (R&D) approach using the ADDIE model, consisting of Analysis, Design, Development, Implementation, and Evaluation stages. The validators involved in this study consisted of two subject matter experts, one language expert, and one media expert. The practicality test subjects included one fourth-grade teacher and eight fourth-grade students of SDN Banjarejo. The subjects were selected using purposive sampling techniques based on the needs of the study. Data were collected through observation sheets and questionnaires, while data analysis was conducted using descriptive percentage analysis based on a Likert scale. The developed learning media integrated Google Sites with Canva, Wordwall, and YouTube to support interactive learning activities. The validation results showed an average feasibility score of 95.67%, categorized as highly feasible, while the practicality test results from the teacher and students obtained an average score of 95.47%, categorized as highly practical. The developed learning media received positive responses from teachers and students and was considered highly practical to support the learning process.

Keywords: digital media, web-based learning, google sites, elementary school, interactive learning media.



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Introduction

Instructional media play a crucial role in supporting effective learning in elementary schools, particularly in science education. The appropriate use of instructional media can help students understand the material more easily and create a more active and meaningful learning experience. According to (Anwar, Jasiah, 2025), instructional media are tools that facilitate engaging communication between teachers and students during the learning process. In addition, (Wibowo, 2023) states that instructional media can enrich students' learning experiences and help make the delivery of material more effective. However, the learning process in elementary schools is still often dominated by conventional teaching methods that rely solely on textbooks and verbal explanations from teachers. As a result, students tend to be passive and lack enthusiasm during the learning process.

In social studies classes, particularly when covering historical artifacts, students often struggle to understand the material because it requires visualization and contextual learning experiences. The material on historical artifacts contains many abstract concepts and examples of past events that are difficult for students to visualize if explained solely through textbooks. Therefore, interactive digital learning media are needed to support students' understanding and increase their engagement during learning activities. (Nadia, 2025) explains that the use of learning media can create a more dynamic and conducive classroom atmosphere, encouraging students to participate more actively in the learning process.

Technological advancements in the field of education provide opportunities for teachers to create innovative and interactive learning materials. One digital platform that can be utilized in teaching is Google

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Sites. (Nugroho, Hendrastomo, 2021) state that Google Sites allows users to easily create educational websites without requiring in-depth technical skills. In addition (Said, Iriansyah, Huzaefah, 2023) explain that Google Sites is free to use and makes it easier for teachers to present various learning materials in an engaging way. Google Sites allows teachers to create web-based learning materials by integrating text, images, videos, quizzes, and interactive learning activities into a single platform. In addition, Google Sites is easy to use, accessible via both smartphones and computers, and free, making it ideal for use in elementary school education.

Based on observations conducted at SDN Banjarejo on March 20, 2026, most teachers have not yet made optimal use of technology in the learning process. Although the school has provided laptops, LCD projectors, and internet access, learning activities are still dominated by the use of textbooks and blackboards. As a result, students tend to be passive and easily get bored during class. Therefore, this study aims to develop an interactive learning tool based on Google Sites on the subject of historical artifacts for fourth-grade elementary school students and to evaluate the feasibility and practicality of the developed tool.

Educational media in the form of websites represent one way of utilizing technology in education. A website is a collection of interconnected pages that provide information accessible via the internet using a web browser (Hakiki, Fadli, 2021). In addition (Sari, Suswanto, 2017) explains that websites can present various forms of information, such as text, audio, images, and video, making them well-suited for use in interactive learning activities. In the context of elementary school education, web-based learning resources are increasingly being used to support a more engaging and flexible learning process.

Several previous studies have shown that Google Sites can be effectively used as a learning tool in elementary schools. In addition (Nugroho, Hendrastomo, 2021) state that Google Sites allows teachers to easily create educational websites without requiring complex technical skills. Additionally, (Ariyanto, Prakoso, Assidik, 2024) found that Google Sites-based learning tools can increase students' interest in learning by making the process more interactive. Previous research has also shown that Google Sites allows for the integration of various learning resources such as images, videos, and quizzes into a single learning platform.

However, most previous studies have focused on the general use of Google Sites or have been conducted at the secondary education level. Research specifically aimed at developing interactive learning media based on Google Sites integrated with Canva, Wordwall, and YouTube for fourth-grade social studies lessons on historical artifacts in elementary schools remains limited. Therefore, this study aims to bridge that gap by developing a web-based learning tool that combines several digital platforms to support a more engaging and meaningful IPAS learning experience for elementary school students.

Technological advancements in the field of education have made available various platforms that facilitate the development of web-based learning materials, one of which is Google Sites. (Firmansyah, 2023) explain that Google Sites allows users to easily create websites without requiring in-depth technical skills. In addition (Said, Iriansyah, Huzaefah, 2023) state that Google Sites is an easy-to-use platform that facilitates the delivery of educational information. Previous research has also shown that Google Sites can support interactive learning by integrating various learning resources such as text, images, videos, and quizzes into a single platform.

However, most previous studies have focused only on the general use of Google Sites as an educational website and have not specifically integrated multiple digital platforms into a single interactive learning medium. The novelty of this study lies in the integration of Google Sites with Canva, Wordwall, and YouTube to create a web-based interactive learning medium for teaching fourth-grade social studies on the topic of historical artifacts. Canva is used to design visually appealing content, Wordwall is used to provide game-based interactive exercises, and YouTube is integrated to support an audiovisual learning experience. In addition, this study specifically focuses on historical heritage materials in elementary school science education, a topic that has received limited attention in previous research on Google Sites-based learning media. Therefore, this study contributes to the development of more interactive and integrated digital learning media for the elementary school learning context.

Method

This study employs a Research and Development (R&D) approach using the ADDIE model, which consists of the Analysis, Design, Development, Implementation, and Evaluation phases. The ADDIE model was chosen because it provides a systematic and structured procedure for developing educational products and is widely used in research on the development of instructional media. According to (Siregar, Rhamayanti, 2025), the Analysis phase focuses on identifying learning problems and student needs; the

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Design phase involves planning the design of instructional media; the Development phase focuses on the process of creating and revising the product; the Implementation phase involves testing the developed media; and the Evaluation phase is conducted to assess the product's suitability and practicality.

This study is limited to assessing the feasibility and practicality of the learning media and does not include an evaluation of its effectiveness in improving student learning outcomes. Therefore, the results of this study only describe the level of feasibility and practicality of the developed learning media based on expert validation and user feedback. The validation panel consisted of two subject matter experts, one language expert, and one media expert. Meanwhile, the subjects of the practicality test included one fourth-grade teacher and eight fourth-grade students at SDN Banjarejo. The subjects were selected using purposive sampling based on the research requirements. The implementation phase was carried out through a pilot study limited to one fourth-grade class at SDN Banjarejo.

The instruments used in this study consisted of an observation sheet and questionnaires to assess feasibility and practicality. The feasibility questionnaire was used to obtain validation data from subject matter experts, language experts, and media experts, while the practicality questionnaire was used to collect feedback from teachers and students regarding the developed instructional media.

The feasibility assessment instrument covers several aspects, namely content appropriateness, language appropriateness, presentation, visual appearance, media usability, and interactivity. The subject matter expert instrument consists of 15 items covering the alignment of the material with learning objectives, conceptual accuracy, and clarity of explanation. The language expert instrument consists of 10 items related to readability, sentence effectiveness, and language appropriateness for elementary school students. Meanwhile, the media expert instrument consists of 15 items that assess interface design, navigation, visual presentation, and media functionality.

The usability questionnaire for teachers and students consists of 12 items that assess ease of use, appeal, clarity of material presentation, accessibility, and student engagement during learning activities. The instrument uses a four-point Likert scale consisting of: 4 = strongly agree, 3 = agree, 2 = disagree, and 1 = strongly disagree.

Before being used in the study, all instruments were first validated by expert validators to ensure the appropriateness of the instrument content and the clarity of the assessment indicators. Suggestions and revisions from the validators were used to refine the instruments before they were applied in a pilot study.

The data collection instruments used in this study consisted of an observation sheet and a questionnaire. The observation sheet was used during the analysis phase to identify the curriculum implemented at the school, classroom learning conditions, the use of learning media, and problems that arose during the learning process. Meanwhile, the questionnaires used in this study included a needs analysis questionnaire, a validation questionnaire, and a questionnaire on practicality.

A needs analysis questionnaire was administered to teachers and students to identify the need for interactive digital learning media in IPAS instruction. A validation questionnaire was used to obtain evaluations from a panel of validators consisting of two subject matter experts, one language expert, and one media expert. The subject matter expert questionnaire consisted of 15 items covering the aspects of content appropriateness, conceptual accuracy, alignment with learning objectives, and clarity of explanation. The language expert questionnaire consisted of 10 items related to readability, sentence effectiveness, language appropriateness, and clarity of instructions. Meanwhile, the media expert questionnaire consisted of 15 items assessing visual appearance, layout design, navigation, usability, interactivity, and media functionality.

In addition, a practicality questionnaire was administered to one fourth-grade teacher and eight fourth-grade students at SDN Banjarejo following the limited pilot test. The practicality questionnaire consisted of 12 items assessing ease of use, appeal, accessibility, clarity of material presentation, and student engagement during learning activities.

Table 1. Research Instrument Framework

Instrument	Assessment Aspects	Indicators	Number of Items
Subject Matter Expert Validation Questionnaire	Content appropriateness	Alignment with learning objectives, conceptual accuracy, and completeness of content	15

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Instrument	Assessment Aspects	Indicators	Number of Items
Language Expert Validation Questionnaire	Language appropriateness	Readability, sentence effectiveness, clarity of instructions	10
Media Expert Validation Questionnaire	Media quality	Visual design, navigation, interactivity, media functionality	15
Teacher Practicality Questionnaire	Practicality of media	Ease of use, accessibility, appeal, and usefulness in learning	12
Student Usability Survey	Student responses	Appeal, ease of use, engagement during learning	12

All questionnaires used a four-point Likert scale consisting of: 4 = strongly agree, 3 = agree, 2 = disagree, and 1 = strongly disagree. Before use, the instrument was first validated by expert validators to ensure the appropriateness of the instrument's content, the clarity of the indicators, and alignment with the research objectives. Revisions were made based on the validators' suggestions before the instrument was used in a pilot study.

The data analysis technique used in this development study was descriptive percentage analysis. The scores obtained from validators, teachers, and students were converted into percentages and then interpreted according to predetermined criteria of feasibility and practicality. The data obtained was processed using the following formula:

$$P = f/N \times 100\%$$

Explanation:

P = assessment percentage

f = Score obtained

N = Maximum possible score (Samsidar, 2022)

The percentage score can be interpreted as qualitative data to assess the suitability and practicality of the learning media using the following criteria:

Table 2. Questionnaire Percentage Criteria

Percentage Score	Criteria Interpretation
81% < x ≤ 100%	Very Feasible / Very Practical
61% < x ≤ 80%	Feasible / Practical
41% < x ≤ 60%	Fairly Feasible / Fairly Practical
21% < x ≤ 40%	Less Feasible / Less Practical
0% < x ≤ 20%	Not Feasible / Not Practical

(Source: Adapted from Samsidar, 2022)

Results and Discussion

The results of this research on the development of digital-based learning media were obtained through the five stages of the ADDIE model. The following are the results of the research conducted:

A. Analysis Phase (Analyze)

The analysis phase was conducted through classroom observations and a needs analysis questionnaire administered to a fourth-grade teacher and 26 fourth-grade students at SDN Banjarejo. The observations focused on identifying the curriculum used, classroom learning conditions, the use of learning media, student participation during learning activities, and issues arising in IPAS instruction. The results of the observation showed that SDN Banjarejo had implemented the Merdeka Curriculum in the learning process. However, classroom learning activities were still dominated by conventional teaching methods, with textbooks and blackboards serving as the primary learning media. During the learning process, students tended to be passive, lacked interaction, and easily became bored because the learning activities remained teacher-centered.

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Based on the results of the needs analysis questionnaire, teachers and students stated that the use of interactive digital learning media in IPAS instruction remains limited. Teachers explained that students often have difficulty understanding historical artifacts because the learning process lacks support from visual and interactive media. Learning outcome data obtained from fourth-grade teachers indicate that 13 out of 26 students (50%) scored below the Minimum Passing Score (MPS) of 75 in IPAS lessons on historical heritage. These findings highlight the need for more interactive and engaging learning media to support student understanding.

The results of the needs assessment survey also showed that 23 out of 26 students (88.5%) preferred digital learning materials, while 3 students (11.5%) preferred visual learning materials such as printed images and books. In addition, all fourth-grade students already own smartphones and are able to use them proficiently. The school also provides supporting facilities in the form of Chromebooks for teachers and Wi-Fi access to support technology-based learning.

Table 3. Summary of Needs Analysis Results

No	Aspects Observed	Data Source	Findings
1	Curriculum Used	Classroom observations and teacher interviews	SDN Banjarejo implements the Merdeka Curriculum
2	Teaching Materials Used	Classroom observation	Teachers rely more on textbooks and the blackboard during instruction
3	Classroom Learning Conditions	Classroom observation	Teacher-centered instruction tends to result in passive students and lacks interactivity.
4	Students' Learning Difficulties	Teacher interviews and needs assessment surveys	Students are having difficulty understanding historical heritage material
5	Student Learning Outcomes	Teacher Documentation	13 out of 26 students (50%) scored below the minimum passing grade
6	Minimum Passing Score	Teacher documentation	Minimum Passing Score for IPAS is 75
7	Students Who Enjoy Digital Media	Needs Assessment Survey	23 out of 26 students (88.5%) enjoy digital learning media
8	Students Who Enjoy Visual Media	Needs Assessment Questionnaire	3 out of 26 students (11.5%) enjoy print media
9	Technology Facilities	School observation	The school provides Chromebooks and Wi-Fi access
10	Students' Technology Skills	Needs analysis questionnaire	All fourth-grade students own smartphones and are able to use them effectively

B. Design Phase

In this phase, the researcher determines the learning objectives, prepares the platform and elements needed to develop the learning materials, designs a website in the form of a sketch, and designs the research instruments. The primary platform used is Google Sites, while the platforms supporting the creation of learning media are Canva, WordWall, and YouTube. The materials prepared include lesson content in the form of text, images, and videos, as well as practice questions. The learning media sketches represent the concept of the web pages to be created in the next phase. The research instruments are designed to test the feasibility and practicality of the developed product.

C. Development Phase

In this phase, the researcher developed a web-based interactive learning tool based on the previously established design. The resulting product is a Google Sites-based learning website for fourth-grade IPAS instruction on the topic of historical artifacts. The website is designed to be accessible via smartphones, laptops, and Chromebooks connected to the internet.

The development process began with designing visual components such as logos, icons, banners, backgrounds, and the layout of the learning materials using the Canva platform. The website's design incorporates colorful and engaging visual elements tailored to the characteristics of elementary school students. After that, interactive learning activities and quizzes were developed using the Wordwall platform.

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The Wordwall activities used include image-matching games, multiple-choice quizzes, and spinning wheel games related to historical heritage to increase student engagement during learning activities. Educational videos from YouTube were also integrated into the website to support the audio-visual learning experience.

Next, the website was developed using Google Sites by integrating all learning components into a single interactive learning platform. The website consists of five main menus, namely: (1) Profile, which contains the website's identity and user guide; (2) CP and ATP, which present the Learning Outcomes and Learning Objective Flow; (3) Videos, which contains integrated YouTube educational videos; (4) Materials, which contains explanations of historical heritage materials supported by images and illustrations; and (5) Games or Quizzes, which contains interactive games and Wordwall-based assessment activities.

The use of the instructional media in the pilot study was implemented in one fourth-grade class at SDN Banjarejo during the IPAS lessons. The duration of the media's use in the classroom pilot was approximately 2×35 minutes. The developed website link and screenshots of the instructional media interface were documented as supporting materials for the research product.



Figure 1. User Guide Page

Once the educational media product was completed, it underwent validation. The validators for this study consisted of 2 subject matter experts, 1 language expert, and 1 media expert. The following is a summary of the validation results for the educational media:

Table 4. Subject Matter Expert Validation Results

No.	Evaluation Aspect	Percentage	Criteria
Subject Matter Expert 1			
1	Content aspect	100%	Highly Acceptable
2	Question presentation aspect	100%	Highly Acceptable
	Average	100%	Highly Acceptable
Content Expert 2			
1	Content aspect	96.68%	Highly Acceptable
2	Question presentation aspect	92%	Highly Acceptable
	Average	94.34%	Highly Acceptable
	Average of Content Experts 1 & 2	97.68%	Highly Acceptable

The content validation assessment was conducted by Content Expert 1 and Content Expert 2. Based on the table above, the average score obtained from both content experts was 97.68%, which falls into the "Highly Acceptable" category.

Table 5. Results of the Language Expert Validation

No.	Assessment Aspect	Percentage	Criteria
1	Clarity	60%	Satisfactory
2	Communicative Aspects	74.33%	Acceptable
3	Compliance with Indonesian Language Rules	82%	Acceptable
	Average	72.11%	Acceptable

The initial language validation results yielded a score of 72.11%, which falls within the "acceptable" category. However, the language expert provided several suggestions for improvement regarding the clarity

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of instructions, sentence structure, and the layout of the instruction pages. Therefore, the researchers revised the learning materials based on the validator's suggestions before conducting a revalidation.

The revision focused on improving the readability and communicative aspects of the instructions in the Google Sites-based learning materials. Some of the instructional sentences, which were previously too long and lacked structure, were revised into shorter, clearer, and more sequential sentences to make them easier for elementary school students to understand. Additionally, the layout of the instruction page was improved by adjusting the spacing between text, ensuring consistent font sizes, optimizing icon placement, and organizing the sequence of information to enhance visual clarity and ease of navigation for users.

The instruction that previously read "Click the menu above and then read the material before answering the questions below" was revised into a more structured format: "First, click the 'Material' menu. Second, read the material carefully. Finally, complete the questions in the quiz section." Additionally, several terms deemed inappropriate for elementary school students were replaced with simpler, more easily understandable vocabulary. The researchers also improved punctuation usage, sentence effectiveness, and grammatical structure to conform to Indonesian language standards.

After the revisions were made, the linguists re-evaluated the revised product. The evaluation results showed a significant improvement across all assessment aspects. The clarity score increased from 60% to 86.67% because the instructions became more systematic and easier to understand. The communicative score increased from 74.33% to 94.33% due to the use of simpler and more effective sentences. Meanwhile, the aspect of compliance with Indonesian language rules improved from 82% to 90% following corrections to sentence structure, punctuation, and word choice. Consequently, the average language validation score rose from 72.11% to 90.33%, placing it in the "highly acceptable" category.

The revised material was re-evaluated for acceptability by the language expert. The following are the results of the language expert's acceptability assessment after the revision.

Table 6. Results of the language expert's validation after revision

No.	Assessment Aspect	Percentage	Criteria
1	Clarity	86.67%	Highly Suitable
2	Communicative Aspect	94.33%	Highly Suitable
3	Conformity with Indonesian Language Rules	90%	Highly Suitable
Average		90,33%	Highly Suitable

Based on the table above, the average score from the language experts was 90.33%. Therefore, the media received a "highly satisfactory" rating in the language assessment.

Table 7. Media Expert Validation Results

No.	Assessment Aspect	Percentage	Criteria
1	Visual Aspect	100%	Highly Satisfactory
2	Media Aspect	91.00%	Highly Satisfactory
Average		95.5%	Highly Satisfactory

The validation assessment of the material yielded an average score of 95.5% from media experts, falling into the "highly feasible" category.

The final validation results from subject matter experts, language experts, and media experts were used to determine the overall suitability of the developed educational media product. The average validation score obtained was 95.67%, which falls into the "highly suitable" category. Among the evaluated aspects, the highest score was in the content aspect, which received a score of 100% from Content Expert 1. This indicates that the learning content is highly aligned with the learning objectives, conceptually accurate, and appropriate for fourth-grade elementary school students. Additionally, the visual and media aspects also received high scores, particularly in interface design, navigation, and interactivity, indicating that the Google Sites-based educational media is engaging and user-friendly in the learning process.

However, some aspects still require revision before the product is considered final. The language validation initially received the lowest score, with an average of 72.11%, particularly in the area of clarity, which scored only 60%. Linguists assessed that some of the instructional sentences were still too long, lacked structure, and were difficult for elementary school students to understand. Additionally, the layout of the

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instruction pages was deemed less than neat. Therefore, revisions were made by simplifying sentence structures, organizing instructions into more coherent steps, correcting punctuation and word choice, and improving the layout of the instruction pages to make them clearer and easier to read.

After the revisions were made, the language validation score increased significantly to 90.33%, indicating that the improvements successfully enhanced the communicative quality and readability of the instructional materials. These findings suggest that although the products generally fall into the “highly suitable” category, the revision process—particularly regarding language aspects—plays a crucial role in improving the overall quality of the instructional materials developed. This finding is also supported by previous research showing that website-based learning materials that undergo a systematic revision process and expert validation tend to have higher levels of suitability and ease of use in classroom learning.

D. Implementation phase

This educational media product was pilot-tested on a limited scale with 8 fourth-grade students from SDN Banjarejo on May 16, 2026. The pilot test was conducted using the students’ own smartphones, and the researcher had previously obtained permission from the school to use smartphones in the learning process. The learning activities were conducted by the fourth-grade teacher using the website-based digital educational media that had been developed. After the lesson was over, the researcher distributed feedback questionnaires to the teacher and students to obtain input regarding the practicality and ease of use of the media.

This small-scale pilot study aimed to assess the initial practicality of the developed learning media, not to generalize its effectiveness. Feedback from teachers and students indicates that the media is accessible, engaging, and capable of supporting classroom learning activities. However, since the pilot study involved only a limited number of participants and was conducted in a single class, the results of this study only demonstrate the initial practicality of the product on a limited scale. Therefore, further research is recommended to conduct a broader implementation and test its effectiveness by involving a larger sample size.

E. Evaluation phase

The evaluation phase of this study aimed to determine the level of practicality of the product’s use following the pilot testing phase. The product’s practicality was assessed by analyzing the results of the educator and student response questionnaires. The following are the questionnaire results after the product pilot test:

Table 8. Educator Response Results

No.	Evaluation Aspect	Percentage	Criteria
1	Presentation of learning materials	95%	Very Practical
2	Appearance of learning media	88.67%	Very Practical
3	Usability	93%	Very Practical
Average		92,22%	Very Practical

The educators in this study were fifth-grade teachers at SDN Banjarejo. Based on the educators’ responses, a percentage of 92.22% was obtained, categorized as “very practical.”

Table 9. Student Response Results

No.	Evaluation Aspect	Percentage	Criteria
1	Presentation of Learning Materials	100%	Very Practical
2	Appearance of learning media	95.68%	Very Practical
3	Usability	98%	Very Practical
Average		97.89%	Very Practical

The respondents in this study consisted of 8 fourth-grade students from SDN Banjarejo who participated in a limited-scale pilot test of the developed learning media. Based on the student feedback questionnaire, the total score obtained was 376 out of a maximum score of 384, resulting in an average percentage of 97.89%, which falls into the “very practical” category. Of the 8 students involved, the majority answered “strongly agree” regarding the media’s appeal, ease of use, accessibility, and engagement during learning

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activities. These findings indicate that the developed learning media has a high initial level of practicality and is easy for students to use in classroom learning activities on a limited scale.

Teachers found that the learning materials were generally engaging and easy to use in the classroom. The attractive visual design and the integration of videos, images, and interactive quizzes via Google Sites, Canva, Wordwall, and YouTube helped create a more active and meaningful learning experience for students. The use of interactive features encourages students to participate more actively in learning activities, especially when studying historical heritage material that requires visualization and contextual understanding. Through the integration of multimedia elements, students not only receive information passively but are also engaged in observing, interacting, and responding directly to the learning material.

Game-based quizzes provided through Wordwall also support student engagement and motivation during the learning process. Students appear enthusiastic when answering questions because the activities are presented in a more enjoyable and interactive format. This indicates that the learning media developed supports student-centered learning by encouraging participation, curiosity, and independent exploration of the material. Additionally, access to the media via smartphones allows students to learn more flexibly and independently during learning activities.

These findings are consistent with a study (Jannah, Bahri, 2024) that found that engaging learning media can increase students' enthusiasm and active participation in learning activities. Similarly, a study (Seviana, Rosyida, Atmoko, 2022) showed that interactive learning media can stimulate students' imagination, interest, and learning experiences through more dynamic classroom interactions. Furthermore, the ease of access and operation provided by Google Sites supports self-directed learning and helps teachers deliver content more efficiently, as supported by research (Dondo, Nusantara, Ibrahim, 2025). Therefore, the developed learning media not only demonstrate a high level of practicality but also possess pedagogical potential in supporting active, interactive, and meaningful learning experiences for elementary school students.

Students found the media interface to be visually appealing and user-friendly, which motivated them and sparked their enthusiasm for learning. This aligns with research (NURUL, 2022) indicating that learning media featuring bright colors, engaging visuals, and a clear layout helps prevent student boredom and makes the learning experience more enjoyable, even when covering material they find challenging. Presenting questions in the form of online games made students enthusiastic about answering them. Students did not experience technical difficulties when accessing and using the provided features. This aligns with the findings of a study (Adzkiya, Suryaman, 2021), which found that learning media that is easy to use, has clear operational guidelines, and efficient navigation strengthens students' motivation to study the material in depth.

Conclusion

The development of Google Sites-based digital learning media for the IPAS subject at SDN Banjarejo resulted in an interactive learning product that integrates text, images, videos, and game-based quizzes using Canva, Wordwall, and YouTube. The main contribution of this study lies in the integration of several digital platforms into a single web-based learning medium specifically designed for fourth-grade elementary school students on the topic of historical artifacts. Validation results from subject matter experts, language experts, and media experts indicate that the developed media meets the "highly suitable" criteria following several revisions, particularly regarding language and instructional aspects. Additionally, a limited-scale practicality test revealed that teachers and students provided positive feedback regarding the media's appeal, accessibility, and ease of use during classroom learning activities.

The research findings also indicate that the use of Google Sites-based learning materials has pedagogical potential to support a more active and meaningful learning experience in science education at the elementary school level. The integration of multimedia elements and interactive quizzes encourages students to participate more actively, explore learning materials independently, and engage with contextual learning content. Additionally, access to these resources via smartphones and web browsers supports flexible learning and helps teachers deliver instructional material in a more interactive manner.

However, this study has several limitations. The feasibility test was conducted on a limited scale, involving only 8 fourth-grade students in a single class; therefore, the study's findings cannot yet be generalized to a broader educational context. Furthermore, this study focused only on feasibility and practicality and did not measure the effectiveness of the media in improving learning outcomes or interest in learning through an experimental method. Therefore, future research is recommended to conduct a broader

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implementation and effectiveness testing using a larger sample size and an experimental research design to examine the influence of Google Sites-based learning media on learning outcomes, motivation, and student engagement in elementary school learning.

References

- Adzkiya, D. S., & Suryaman, M. (2021). Penggunaan media pembelajaran Google Site dalam pembelajaran Bahasa Inggris kelas V SD. *Educate: Jurnal Teknologi Pendidikan*, 6(2), 20–31.
- Anwar, S., & Jasiah, J. (2025). Pengembangan media pembelajaran berbasis game Educaplay untuk meningkatkan keaktifan siswa pada mata pelajaran SKI. *Jurnal Budi Pekerti Agama Islam*, 3(1), 355–373.
- Ariyanto, Z. R., Prakoso, G. B., & Assidik, G. K. (2024). Pengembangan Media Pembelajaran Berbasis Google Sites pada Materi Teks Argumentasi Kelas 11 di SMK Batik 1 Surakarta. *Buletin Pengembangan Perangkat Pembelajaran*, 6(2).
- Dondo, B., Nusantara, E., & Ibrahim, M. (2025). Pengembangan Media Pembelajaran Website Berbasis Google Sites Sebagai Sumber Belajar Mandiri pada Materi Sistem Peredaran Darah di SMA Negeri 1 Telaga Biru. *Jurnal Biogenerasi*, 10(2), 1449–1455.
- Firmansyah, Y., Sudarman, S., Partha, M. N., & Rahayu, V. P. (2023). Pengembangan media pembelajaran berbasis web Google Sites pada mata pelajaran ekonomi. *Jurnal Prospek: Pendidikan Ilmu Sosial Dan Ekonomi*, 5(1), 11–20.
- Hakiki, M., & Fadli, R. (2021). Pengembangan Media Pembelajaran E-Learning Berbasis Web Pada Matakuliah Profesi Kependidikan Stkip Muhammadiyah Muara Bungo. *Jurnal Muara Pendidikan*, 6(2), 182–189.
- Jannah, A. M., & Bahri, A. (2024). Penerapan Media Pembelajaran Digital Berbasis Website Sebagai Upaya Peningkatan Minat Belajar Peserta Didik Kelas VI SD Inpres Minasa Upa Makassar. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 10(3), 310–319.
- Nadia, P., Mardiyah, S., Ramadhani, A., & Sembiring, L. A. P. (2025). Peran Guru Dalam Mmenciptakan Lingkungan Kelas yang Kondusif. *Jurnal Inovasi Pendidikan PEDAGOGI*, 1(2), 54–63.
- Nugroho, M. K. C., & Hendrastomo, G. (2021). Pengembangan Media Pembelajaran Berbasis Google Sites Pada Mata Pelajaran Sosiologi Kelas X. *Jurnal Pendidikan Sosiologi Dan Humaniora*, 12(2), 59–70.
- NURUL, K. (2022). Penggunaan Media Balok Iqra Berwarna Warni untuk Meningkatkan Minat Belajar Peserta Didik Kelas 1 Di SD Roudlatul Quran 04 Jati Agung Lampung Selatan. UIN Raden Iintan Lampung.
- Said, A. R., Iriansyah, H. S., & Huzaefah, O. (2023). Pengembangan media pembelajaran multimedia interaktif berbasis WEB Google Sites untuk meningkatkan motivasi belajar siswa SMPN I Teluknaga Tangerang. *Jurnal Citizenship Virtues*, 3(2), 544–558.
- Sari, H. V., & Suswanto, H. (2017). Pengembangan media pembelajaran Berbasis Web Untuk mengukur hasil Belajar siswa pada mata pelajaran Komputer Jaringan Dasar program Keahlian teknik komputer dan jaringan. State University of Malang.
- Seviana, R., Rosyida, F., & Atmoko, R. A. (2022). Pengembangan media pembelajaran augmented reality pada pembelajaran geografi materi planet di tata surya. *Geodika: Jurnal Kajian Ilmu dan Pendidikan Geografi*, 6(2), 198–208.
- Siregar, T., & Rhamayanti, Y. (2025). Implementasi pengembangan model ADDIE pada dunia pendidikan. *Jurnal Hasil Penelitian dan Pengembangan (JHPP)*, 3(2), 85–100.
- Wibowo, H. S. (2023). *Pengembangan teknologi media pembelajaran: Merancang pengalaman pembelajaran yang inovatif dan efektif*. Tiram Media.