



Development of Web Based Learning to Improve Science Learning Outcome of Student in Elementary School

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Abstract

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This study aims to develop web-based google sites learning media in improving student learning outcomes in the content of Natural and Social Sciences (IPAS). This research uses research and development (RnD) method with ADDIE model. This model consists of five steps, namely (1) analyze, (2) design, (3) development, (4) implementation, (5) evaluation. The tools of this research are validation sheets, student test results sheets, data collected through various methods and analysis using validity and reliability tests of material and media experts. The results of the study indicate that Google Sites-based learning media is highly feasible in terms of content and presentation, and effective in improving student learning outcomes. A significant increase in student learning outcomes was observed after the implementation of this media, with the N-Gain test results categorizing the improvement as moderate. The average pre-test score was 62.37, while the post-test score was 85.05, reflecting an increase of 22.68 points. This research can serve as a foundation for developing more complex and interactive learning media.

Keywords:

Media Development, Google Sites, Learning Outcomes

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INTRODUCTION

The era of technological disruption has brought fundamental changes in various sectors, including education. In line with the opinion of Nuraeni et al., (2024) educational institutions must have the right strategy in preparing human resources (learners) to face the era of disruption 5.0. This transformation is not only affects the way education is delivered, but also demands adjustments to the increasingly dynamic and complex learning needs of learners. In this context, education is required to adapt to learning models that are more innovative, flexible and responsive to technological developments. The ideal education in the current era is no longer just providing knowledge to students, but also equipping them with the skills to think critically, creatively, and adaptively to change (Mashudi, 2021). Students born and living in this era are more familiar with the internet, Android smartphones, digital media, social media, and various other technologies, so these habits need to be optimized by utilizing them as learning media used by students (Suprayekti et al., 2023).

Digitalization of education is one of the main approaches in answering these challenges. With the advancement of technology, the learning process can be more interactive, personalized, and based on learners' needs. Technology-based learning



media provides an opportunity to create a more interesting and relevant learning experience, which can significantly boost learners' learning motivation. Learning motivation has a very important role in the success of education. Research by (Hari et al., 2025) emphasizes that intrinsic and extrinsic motivation contribute significantly to learners' engagement in the learning process. Therefore, the presence of innovative and interactive learning media is one of the main factors that can increase learners' motivation. In this context, the selection of learning media must be aligned with students' development, as the teaching and learning process should facilitate interaction and reciprocal communication between teachers and students, in accordance with the established functions and objectives of learning (Yarmi et al., 2024).

One of the innovative solutions is the implementation of *Google Sites* as a technology-based learning media. *Google Sites* is a digital platform that allows teachers to design learning media that is interactive, interesting, and easily accessible. In the opinion conveyed by (Farahani, 2023) *Google sites* can be utilized and used as learning media, because this website can be managed for personal or shared interests. In line with this opinion, *Google Sites-based* learning media not only supports mastery of cognitive material, but also has the potential to improve students' affective and psychomotor skills. With its various features, such as video integration, documents, interactive quizzes, *Google Sites* provides a comprehensive and interesting learning experience for learners.

(Yanto et al., 2023) state that one of the main advantages of *Google Sites* is its accessibility, the platform can be accessed through various devices, such as laptops, tablets, and smart phones, which makes it an *inclusive* solution for a wide range of learner backgrounds. In addition, the simple and intuitive interface design allows teachers to easily integrate various learning content without requiring high technical expertise. In the context of online learning, *Google Sites* is also able to overcome various technical obstacles, such as unstable internet connection or limited hardware, by providing options to download or access materials *offline*.

The design of instructional materials and the methods applied by educators are crucial in creating a motivating learning environment. As technology advances in the classroom, educators need to adapt their approach to effectively engage students (Sinag, 2024). The use of *Google Sites* in learning provides teachers with the opportunity to develop a more meaningful approach to learning. This media can be used to support *project-based learning* or *problem-based* learning models, both of which have been shown to be effective in increasing learner engagement (Nuraeni et al., 2024). In the opinion of (Nurul et al., 2024) by presenting relevant, contextual, and interesting materials, teachers can create a learning environment that motivates learners to actively participate, develop critical thinking skills, and increase their confidence in exploring new ideas. Through learning innovations based on *Google Sites*, the challenges of learning motivation that have been faced can be overcome effectively (Mahalasari, 2022). This technology provides an opportunity for education to go further in creating inclusive, adaptive, and meaningful learning, so as to encourage learners to achieve their best potential in this era of technological disruption (Iskandar et al., 2023). Despite the great potential of technology-based learning media, the main challenge faced by

education, especially at the primary school level, is the low learning outcomes of students.

The low learning outcomes of elementary school students are still a major challenge in the world of education. Based on observations and preliminary data, one of the main causes of low learning outcomes is the lack of student motivation, which is also influenced by the lack of use of innovative and interactive learning media. Commonly used online learning media, such as WhatsApp Group, Google Classroom, and YouTube, have not been able to effectively improve students' understanding of the subject matter.

The survey results show that learners often have difficulties in understanding the material delivered through these online platforms. They feel bored, unmotivated and passive during the learning process. Field observations in one elementary school showed that the average cognitive score of students only reached 48.8, far below the set graduation standard (Sastromiharjo et al., 2024). This condition creates a gap in the achievement of basic competencies required by students, both from the cognitive, affective, and psychomotor aspects.

The era of technological disruption provides a great opportunity to integrate more interactive and contextual learning media, one of which is through the use of *Google Sites* as a learning medium (Napitu et al., 2023). However, the potential of *Google Sites* in improving students' learning outcomes has not been widely optimized, especially at the primary school level. This creates a knowledge gap on how this learning media can be designed and implemented to improve learners' understanding as well as their learning motivation. (Kartika Sari & Nabilla Qonita, 2024) With attractive displays and diverse learning methods using technology, learning materials can be delivered more compellingly, making it easier for students to absorb information and retain an understanding of the lesson.

Google Sites has various interactive features, such as the integration of videos, quizzes, documents, and online discussion forums, which allow learners to be more active and engaged in the learning process (Napitu et al., 2023). In addition, it also offers flexibility of access through various devices, such as laptops, tablets or smart phones. However, the effectiveness of using *Google Sites* as a learning media to improve learners' learning outcomes still requires in-depth studies, especially related to content design, implementation strategies, and their effects on various aspects of learners' learning outcomes.

According to Hari et al., (2025) interactive elements in digital learning environments can significantly increase learners' motivation to learn. *Google Sites* with its ability to integrate multimedia such as videos, documents, interactive quizzes, and online discussions, allows learners to engage more actively in the learning process. These elements not only facilitate flexible delivery of materials but also create a more personalized and meaningful learning experience (Irawan et al., 2023). As a technology-based learning medium, *Google Sites* also supports various pedagogical approaches, including *project-based* learning and *problem-based* learning, which have proven effective in encouraging active learner engagement (Wirdatul Izzah et al., 2024).

Research Jusriati et al., (2021) provides concrete evidence that the use of *Google Sites* as an *e-learning* platform can improve learners' engagement and learning outcomes, especially in learning English as a foreign language. This

research shows that the combination of interesting content design with an intuitive interface can help learners understand the material better. Meanwhile, Sastromiharjo et al., (2024) explored the application of *Google Sites* in improving learners' writing skills in language education programs. The results showed that this media not only improved learners' learning outcomes cognitively, but also had a positive influence on their affective and psychomotor aspects.

However, most previous research has focused on secondary and higher education, creating a gap in the context of primary education. At the primary school level, learners have different learning needs, especially related to the development of basic skills such as reading, writing and arithmetic, which require a more adaptive and contextual approach (Purba et al., 2021). For example, research Wirdatul Izzah et al., (2024) emphasizes the importance of relevant and interactive content design to help learners understand the subject matter. However, this research is still limited to specific subjects and materials, so the application of *Google Sites* in a broader context in basic education has not been widely explored.

The era of technological disruption has opened up great opportunities for innovation in education, especially in technology-based learning (Suratno, 2022). However, effective utilization of learning media at the primary education level is still minimal. Most previous research highlights the use of digital media in secondary and higher education, while the unique needs of primary school learners have not received adequate attention. Research conducted by Jusriati et al., (2021) shows that *Google Sites* can increase learners' engagement in online learning. However, this application is mostly used for secondary education and language materials, so its effectiveness in supporting basic skills such as reading, writing and arithmetic at the basic education level is still not thoroughly explored. Wirdatul Izzah et al., (2024) proved the importance of interactive content design to help learners understand the material, but the focus of the study was limited to certain materials. This suggests a knowledge gap regarding the optimization of *Google Sites* in broader and adaptive thematic learning. In addition, most of the commonly used online platforms, such as *Google Classroom* or *Zoom*, do not provide a personalized and contextualized learning experience for primary school learners, which ultimately results in low motivation and learning outcomes. Observations show that learners' average score at the cognitive level only reaches 48.8, far below the passing standard. This condition emphasizes the need for a new approach that not only supports cognitive mastery of the material, but also motivates learners to actively participate in the learning process.

Therefore, this research aims to fill the gap by developing *Google Sites-based* learning media specifically designed for elementary school students. The main focus is to create learning media that is not only visually appealing, but also able to support the development of cognitive, affective and psychomotor skills as a whole. For example, this learning media will utilize *Google Sites* features to present contextualized materials, such as animated videos that support learning, interactive quizzes that measure learners' understanding in real-time, and discussion forums that encourage collaboration between learners.

In addition, this research also aims to evaluate the effectiveness of *Google Sites* in improving learner learning outcomes through an experimental design that focuses on cognitive aspects, motivation and learner engagement. This is important

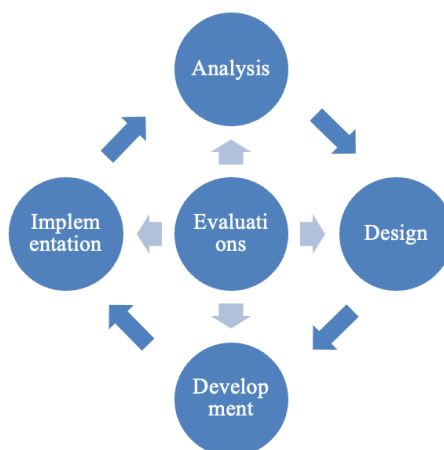
to build a stronger theoretical foundation on the role of technology-based learning media in improving the quality of basic education. Thus, this research not only provides practical contributions for teachers in developing effective learning media but also provides new insights into how technology can be optimally integrated in the basic education curriculum. Overall, this research is expected to be an innovative solution to address the challenges in learning in the digital era, particularly in the context of basic education.

This study aims to develop, test the feasibility, and test the effectiveness of interactive learning media based on Google Site on the learning outcomes of science subject content in grade III students. The results of this study are expected to provide practical guidance for teachers in effectively integrating technology into the basic education curriculum, serving as a model for optimizing technology-based learning that is relevant and inclusive. By developing and testing the effectiveness of Google Sites-based learning media, this research not only addresses the challenges of learner motivation and learning outcomes but also makes a significant contribution to the literature and practice of learning in the digital era, thereby enhancing the overall educational experience for students.

METHODS

This type of *research* is *Research and Development (R&D)* development research. According to ADDIE Sugiyono, (2019), *Research and Development (R&D)* is a process or method used to validate and develop a product. Product development, in a broad sense, includes the updating of existing products to make them more practical, effective, and efficient, as well as the creation of new products that did not previously exist. Thus, it can be concluded that research and development (R&D) is a scientific approach in investigating, designing, producing, and testing the validity of products.

This study aims to develop web-based interactive media using google sites. Researchers used the *ADDIE* development research model, in line with Robert Maribe Brach in Sugiyono, (2019) the *ADDIE* approach consists of 5 stages, namely Analysis, Design, Development, Implementation, and Evaluation.



Gambar 1. ADDIE research and development steps

In this study, qualitative and quantitative data were used to evaluate the development of learning media products. Qualitative data were collected through the distribution of validation questionnaires to material experts Fitria Dwi Prasetyaningtyas, S.Pd., M.Pd as a Lecturer in Social Sciences and media expert Dr. Deni Setiawan, S.Sn., M.Hum. who acted as a validator of learning media products. In addition, interviews were conducted with teachers and distributed questionnaires to teachers and students. Quantitative data were collected through pretests and posttests to assess the learning achievement of grade III students at SD Negeri Sadeng 2. The pretest and posttest consisted of multiple-choice questions designed to evaluate students' learning outcomes. Prior to administering the questions, the researcher conducted validity and reliability tests on the assessment items with grade IV students at SD 4 Bulungcangkring to ensure the quality of the questions. The research subjects were all thirdgrade students at SD Negeri Sadeng 2, with 19 students as a large-scale test group and 6 students as a small-scale test group. According to opinion Putri et al., (2024) elementary school students today belong to Generation Alpha, where technology-related learning media consistently captures the primary attention of children in the current era. In this study, the participants exhibit diverse backgrounds and varying levels of prior knowledge in the subject matter, reflecting the broad spectrum of experiences and learning styles present among today's young learners.

In this study, qualitative and quantitative data were used to evaluate the development of learning media products. Qualitative data was collected through distributing validation questionnaires to material experts and media experts who acted as validators of learning media products. The observation sheet was used to collect data about the initial needs of learning media product development and the characteristics of students. Interviews were conducted with teachers to collect information about product development needs. Questionnaires were used to assess the validity of product development in terms of material aspects, and media graphics made. In addition, tests were conducted to measure learners' understanding of concepts through descriptions and evaluate the effectiveness of learning media that had been made.

The data analysis technique in this study adopts the ADDIE model which involves validity test, reliability test, normality test, T-test, and *N-gain* test. According to Magdalena et al., (2023) the validity test is carried out to ensure that the data collected is relevant and represents the variable under study. The normality test is carried out to ensure that the method used is appropriate and the results obtained are valid. In this study, researchers used paired sample T-test. This method was chosen to evaluate the effectiveness of learning media, which is shown through the difference in average scores before and after the application of the learning media. In addition, the *N-gain* test was also conducted to assess the effectiveness of using learning media in the group under study, with a pretest and posttest design approach. Furthermore, qualitative descriptive data analysis was conducted to process the results of interviews with teachers, student needs questionnaires, and validation questionnaires from web-based learning media experts, especially Google Sites. This analysis process includes grouping information based on the needs of each applied tool. The results of this analysis will be used as the basis for

making further decisions related to the development of web-based learning media, namely Google Sites.

RESULTS & DISCUSSION

Results

The development research conducted produced a product in the form of web-based learning media using Google Sites for planning materials. This learning media was developed based on the material “Me and My Environment” in grade III SD Negeri Sadeng 2. The results of this study include three aspects, namely: (1) development of learning media, (2) feasibility of learning media, and (3) improvement of student learning outcomes.

Media Development

Product design is based on data obtained through interviews and questionnaires involving the needs of teachers and students. The result of media development is a website that can be accessed online. This media carries a bright and cheerful theme to attract learners' attention. The way material content is presented and visualized can significantly affect the cognitive processes involved in critical thinking and independence during learning (Munawir et al., 2024). When materials are presented in a way that is easy to understand and interesting, it can help learners to process information more easily, stimulate analytical thinking, and encourage them to be more independent in learning. In addition, effective presentation of materials can also increase learners' engagement, thus having a positive impact on their learning outcomes. In other words, the right way of visualizing materials can help learners not only understand concepts better, but also develop critical thinking skills that are essential for deeper learning and more optimal results. In line with the opinion of Mayasari, (2024), this effect can occur due to the limited capacity of sensory memory related to the process of receiving information visually and/or audio, as well as the working memory of learners in processing the information into meaningful knowledge.

The media presented has innovation and development characteristics shown in several parts, with details as follows: (1) The material contained in the Google Sites-based teaching media covers IPAS lessons with the topic of Plan for grade III SD. (2) The preparation of teaching media components based on Google Sites is designed to facilitate the delivery of material and utilize animation to convey information in learning. (3) This media is equipped with steps for use. (4) There is a stimulus designed to improve student learning outcomes. (5) This media is uploaded to the web so that it is easily accessible and does not require a lot of data. (6) This media can be used individually, in groups, or with teachers. The results of the development of web-based google sites learning media are presented in the following figure.

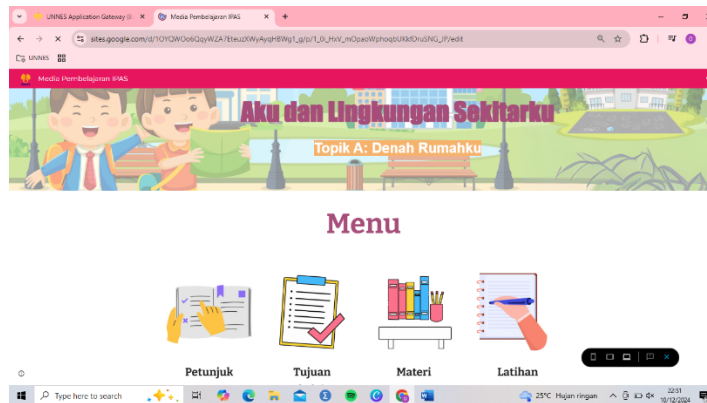


Figure 1. Menu Page

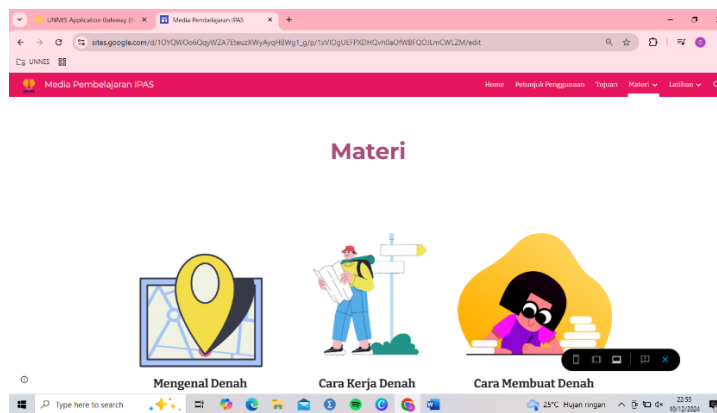


Figure 2. Material page

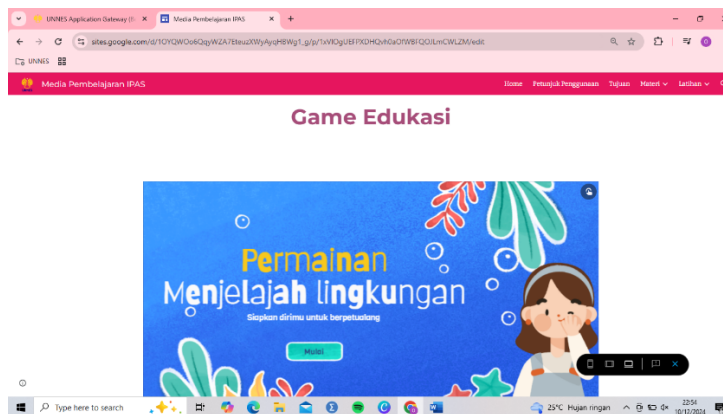


Figure 3. Games page

Media Feasibility

The feasibility assessment of Google Sites-based teaching media is carried out through a series of tests to assess product quality. This assessment process includes two main stages, namely media validation and material validation. Assessments from media experts and material experts have a very important role as a reference in the development of learning media. Media experts assess aspects such as the use, appearance, and completeness of the media, while material experts evaluate the suitability of the media with material about the Plan. In Sugiyono, (2019) the assessment was carried out using an ordinal

scale questionnaire, where experts were asked to give a score between 1 and 4 on each aspect evaluated, as well as provide comments and suggestions for improving the learning media before further trials were carried out

The validation process will be carried out continuously until the developed media is considered eligible and declared valid. The validation results from the validators can be seen in the following table:

Table 1. Media and Material Expert Validation

Validation Result	Average	Terms
Media expert validation	90%	Very valid
Material expert validation	95%	Very valid

Based on the results of validation conducted by media and material experts, the average percentage of media validity was 90% and the validity of the material reached 95%. These results indicate that the media and materials developed are considered very valid. Web-based learning media using Google Sites obtained a good assessment, although there were some suggestions for improvement from the validators.

Table 2. Media Practicality Results

Hasil Validasi	Average	Terms
Teacher Response	90%	Very practical
Small group response	95%	Very practical
Large group response	100%	Very Practical

Based on the results of the teacher and learner responses, it is intended to determine the practicality of the developed media. based on the results obtained from the analysis of trial data by the teacher, a percentage of 90% was obtained, while based on the results obtained from the analysis of small and large group trial data, 95% and 100% were obtained. These results indicate that the media and materials developed are categorized as very practical.

Effectiveness of learning media

After conducting trials to students, at this stage an evaluation is also carried out to measure the effectiveness of the learning media that has been developed. To assess the effectiveness of the media, researchers conducted a series of tests consisting of the following procedures:

Reliability Test

The results of the data reliability test for variables using SPSS can be seen in the following table:

Table 3. Reliability test results

Cronbach's Alpha	N of Items
940	42

This table shows that the reliability results on the questionnaire are in a very high category, with a high Cronbach's Alpha value and a large number of items. This shows that the questionnaire has a high level of internal consistency and can be relied upon to measure the variables under study.

Normality Test**Table 4.** Test results

		<i>Pre_test</i>	<i>Post_test</i>
<i>N</i>		19	19
<i>Normal Parameters</i>	<i>Mean</i>	62.3684	85.0526
	<i>Std. Deviation</i>	13.98893	9.76657
<i>Most Extreme Differences</i>	<i>Absolute</i>	.183	.095
	<i>Positive</i>	.156	.081
	<i>Negative</i>	-.183	-.095
<i>Test Statistic</i>		.183	.095
<i>Asymp. Sig. (2-tailed)</i>		.095	.200

Based on the results listed in the table above, it is known that the Sig. value is greater than 0.05. Thus, it can be concluded that the data is normally distributed, as the significance value exceeds the 0.05 threshold.

Homogeneity Test**Table 5.** Homogeneity Test

	<i>Levene Statistic</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
<i>Based on Mean</i>	3.713	1	36	.062
<i>Based on Median</i>	1.672	1	36	.204
<i>Based on Median and with adjusted df</i>	1.672	1	29.062	.206
<i>Based on trimmed mean</i>	3.523	1	36	.069

Based on the homogeneity test results, it can be seen that the sig. value on based on mean is greater than 0.05 ($0.06 > 0.05$). This indicates that the data is homogeneous because the variance between data groups is considered the same.

Paired T-Test**Table 6.** Paired Sample T test results

		<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>	<i>Lower</i>	<i>Upper</i>	<i>T</i>	<i>Df</i>	<i>Sig.(2-tailed)</i>
Pair 1	Pre_test- Post test	-22.68421	8.15170	13.98893	3.20928	-18.75521	-12.130	18	.000

Based on the results of the calculation of the *Paired Sample T* test, the *p value* (*Asymp. Sig 2 tailed*) is 0.00 where < 0.05 so that the hypothesis decision is to accept H_0 there is a relationship between pretest and posttest. So you can see the descriptive table.

Table 7. Deskriptive statistics

		Mean	N	Std. Deviantion	Std. Error Mean
Pair 1	Pre_test	62.3684	19	13.98893	3.20928
	Post_test	85.0526	19	9.76657	2.24061

The descriptive statistics table above presents the mean, standard deviation, and minimum and maximum values for each group of data, namely pretest and posttest. From the information presented, it can be seen that the average posttest score reached 85.05, which is clearly higher than the pretest score of only 62.37. This indicates a significant improvement in learning outcomes after conducting the posttest.

The t-test results showed a significant difference in the learning outcomes of grade III students of SDN Sadeng 2 before and after the use of the Google Sites web-based learning media that had been developed. The average pretest score of students before using the media was 62.37, while the posttest score after using the media reached 85.05. Thus, there was an increase of 22.68.

N-Gain Test

Assessment of the comparison between pretest and posttest scores is done by analyzing N gain. In this study, N gain was used to measure the improvement of students' learning outcomes on plan material after the application of Google Sites learning media. The calculation of the gain test is done by comparing the pretest and posttest scores before and after the use of Google Sites learning media.

Table 8. N-Gain Test Results

	N-Gain	Description
Small group	0.678030303	Medium
Large group	0.632779866	Medium

The table above shows the interpretation of the N-Gain value, in both cases the result is "Moderate". N-Gain is calculated by comparing participants' pre-test and post-test scores. This allows researchers to evaluate the effectiveness of the intervention in improving learning outcomes.

Discussion

The results showed a significant increase in student learning outcomes after using Google Sites-based learning media. Based on the results of the N-Gain test, the increase in student learning outcomes is included in the moderate category, with an average pre-test score of 62.37 and post-test of 85.05, showing an increase of 22.68 points. This finding is in line with a study conducted by Al-Fadhli et al. (2020), who found that web-based learning platforms can improve student understanding as they provide flexible access and learning resources that can be accessed at any time. At the global level, research by Yilmaz (2023) shows that the integration of digital technology in learning can further improve academic outcomes by facilitating personalized learning according to student needs. However, the improved results require further analysis of the influencing factors. Students' initial readiness in understanding the subject matter plays an important role; students who have a strong knowledge base may find it easier to adapt to this learning media. In addition,

the level of student engagement in the learning process is also a key factor; if students are not actively using all available features, their learning outcomes may not be optimal.

The limitations of this study need to be noted, where the sample size used may not be large enough to produce generalizable findings, and the duration of Google Sites use may not have been long enough to have a significant impact. External variables, such as students' socio-economic conditions and support from parents, may also affect learning outcomes. The effectiveness of Google Sites in learning can be explained through cognitive learning theory which emphasizes the importance of students' active involvement in processing new information (Kumar & Sharma, 2021). By providing flexible and structured access to learning materials, Google Sites allows students to develop deep understanding at their own pace. Research by Szymkowiak et al., (2021) confirms that the use of multimedia elements in online learning can strengthen students' memory and improve material absorption. In addition, constructivism theory that emphasizes the importance of experiential learning supports the effectiveness of this platform in helping students build understanding through interaction with rich and varied learning content.

Another advantage of Google Sites is the integration of interactive elements that help strengthen student engagement, such as online quizzes, learning videos and instant feedback. Research by Artati, (2019) found that learning platforms that provide immediate feedback allow students to identify and correct errors quickly, thus improving their understanding. In addition, the use of web-based media allows for more adaptive learning, where educators can customize content based on students' level of understanding. The study by Argyilan et al., (2024) mentioned that this technology is able to improve students' problem-solving skills through more independent interaction with learning materials. However, this study also found that Google Sites has limitations in the aspect of real-time collaboration. It does not provide live discussion features like Google Classroom or Microsoft Teams, which are more effective in accommodating interactive discussion-based learning (Schneider et al., 2022) Thus, this limitation can be a challenge for students who need direct interaction with educators or learning partners. A potential solution is to combine Google Sites with other platforms that can also support real-time discussions to enhance students' learning experience.

Finally, the results show that students' and teachers' responses to the use of Google Sites in learning are very positive. Based on the survey results, 90% of teachers stated that this media is very practical, while 95% of students in the small test group and 100% in the large test group gave positive responses to its use. Research by Kalogirou et al., (2022) supports these findings, stating that technology-based learning platforms can increase student motivation and create a more enjoyable learning experience. Meanwhile, the findings are consistent with the study by Latheef et al., (2021), which showed that students who engage in web-based learning tend to have a higher level of understanding and are motivated to learn independently. Overall, the findings of this study confirm that Google Sites has great potential in improving student learning outcomes and can be an effective solution in digital learning (Horváth et al., 2024; Manspeaker & Wix, 2021).

The implications of these findings suggest that further training for teachers in utilizing Google Sites effectively is needed. In addition, customization of learning content to better suit students' needs may also improve learning outcomes. For future research, it is recommended to conduct a longitudinal study to see the impact of using Google Sites over a longer period of time, as well as comparing its effectiveness with other digital learning platforms. Qualitative research can also be conducted to understand students' and teachers' experiences in using Google Sites. Thus, this more in-depth analysis can provide a more comprehensive insight into the effectiveness of Google Sites-based learning media.

CONCLUSION

Based on the results presented, it can be concluded that the development of Google Sites-based learning media for planning material, utilizing the ADDIE model, has successfully produced a quality product suitable for the learning process. The quality of this product has been evaluated through assessments from experts and students, yielding very satisfactory results. Furthermore, the use of this learning media has been shown to improve student learning outcomes, as evidenced by the increase in post-test scores. However, it is important to note that the improvement in learning outcomes was only in the moderate category. This warrants a more in-depth discussion on the factors influencing these results, such as students' prior knowledge and engagement levels, as well as the limitations of the study, including sample size and duration. These considerations highlight the need for further refinement of the learning media and instructional strategies. Additionally, the implications for educational practice suggest that while Google Sites media can be effectively implemented at the elementary school level, further research is recommended to explore additional factors that may enhance learning outcomes and to address the limitations identified in this study.

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