Bridging Traditional and Digital Learning: The Role of Google Sites in Project-Based Learning at MI Miftahul Huda Selok Anyar Pasirian

Muhammad Sholeh[1] , Mashudi[2], Saihan[3]

[123]Pendidikan Agama Islam, Pascasarjana, UIN Kiai Haji Achmad Siddiq Jember, Indonesia

E-mail: muhammadsholehghotfan@gmail.com[1], mashudi@uinkhas.ac.id[2],
saihanelfirdaus286@gmail.com[3]

Abstract

The integration of information and communication technology (ICT) in education has become increasingly crucial in the 21st century. Project-Based Learning (PjBL) is a relevant learning model that fosters student engagement, creativity, and problem-solving skills. This study analyzes the need for developing Google Sites-based PjBL media at MI Miftahul Huda Selok Anyar Pasirian , where traditional learning methods still dominate, limiting student participation and interaction. Data were collected through observations, questionnaires, interviews, and document analysis, using a qualitative case study approach. The findings indicate that while teachers and students recognize the benefits of digital learning, major challenges such as limited infrastructure, inadequate digital literacy, and unstable internet access hinder effective implementation. The study also reveals a significant gap between national education policies advocating for digital integration and actual classroom practices. Despite these challenges, there is strong interest in adopting Google Sites for PjBL, provided adequate training and institutional support are available. This research contributes to the development of interactive digital learning media that can enhance student engagement and facilitate PjBL implementation. The findings emphasize the importance of structured teacher training, improved digital infrastructure, and stakeholder collaboration to ensure effective technology integration in education. Future research should focus on designing and implementing Google Sites-based PjBL media to optimize learning outcomes.

Keywords: *Project-Based Learning, Google Sites, Digital Learning Media, Technology Integration, Student Engagement*

INTRODUCTION

The use of information and communication technology (ICT) in education has become an urgent necessity in modern education. In the context of 21st-century education, the use of digital learning media is essential to enhance the effectiveness and efficiency of the learning process(Lang & Ceccucci, 2013). One of the learning models considered relevant to

contemporary demands is Project-Based Learning (PjBL), which emphasizes active student engagement in solving authentic projects related to real life. This model promotes the development of critical thinking, collaboration, communication, and creativity skills. Amid technological advancements, utilizing Google Sites as a PjBL-based learning medium is a potential alternative to increase student engagement in learning(Hidayat et al., 2023).

Global phenomena indicate that the integration of technology in education is a major concern in improving learning quality. Several developed countries, such as Finland, the United States, and Singapore, have implemented technology-based learning systems by providing interactive digital learning media(Hartnett & Koury, 2012). For instance, in Finland, implementing technology-based PjBL has positively impacted students' problem-solving skills and independent learning(Khumairoh et al., 2025). In Singapore, the use of technology-based Learning Management Systems (LMS) has been integrated into the curriculum to support more flexible and personalized learning.(Saputra et al., 2023)

At the national level, the Indonesian government has sought to promote digitalization in education through various policies, such as implementing the Merdeka Curriculum, which emphasizes project-based learning and technology integration in education(Amar Salahuddin et al., 2023). The Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) has also developed digital platforms like Rumah Belajar and Merdeka Mengajar to facilitate teachers and students in online learning. However, in many schools, particularly in rural areas, the utilization of digital learning media still faces various challenges, such as limited infrastructure, lack of digital literacy among teachers and students,(Sulistyawati et al., 2022) and the scarcity of interactive learning media that can optimally support the implementation of PjBL.

At MI Miftahul Huda Selok Anyar Pasirian , issues in project-based learning remain a major challenge. Based on observations and interviews with teachers and 11th-grade students, it was found that learning media usage is still dominated by conventional methods such as lectures and manual assignments. The lack of interactive digital learning media makes students less motivated to participate in learning and struggle to develop 21st-century skills, such as critical thinking and collaboration. Moreover, the limited availability of learning resources that align with the characteristics of PjBL makes the learning process less effective. Therefore, it is necessary to develop digital learning media that can better support the implementation of PjBL(Saputra et al., 2023).

Previous studies indicate that developing digital learning media can enhance learning effectiveness. For example, research conducted by (Ningsih et al., 2023) found that using digital platforms based on PjBL can increase student engagement and learning outcomes. Another study by (Cahyo Nugroho & Hendrastomo, 2021) showed that using Google Sites in learning can facilitate students in accessing materials flexibly and improving teacher-student interaction. However, research on the development of PjBL-based Google Sites in the context of high school education, particularly in regions like Kunir, remains limited. This indicates a research gap that needs to be addressed through further studies.

Based on these issues, this study aims to analyze the need for developing Google Sites-based Project-Based Learning media at MI Miftahul Huda Selok Anyar Pasirian. The findings of this research are expected to contribute to the development of digital learning media that meet the needs of students and teachers while supporting the more effective implementation of project-based learning. Thus, this study not only has theoretical value in expanding research on technology-based learning media but also has practical implications for improving learning quality in schools.

Based on these issues, this study aims to analyze the need for developing Google Sites-based Project-Based Learning media at MI Miftahul Huda Selok Anyar Pasirian. The findings of this research are expected to contribute to the development of digital learning media that meet the needs of students and teachers while supporting the more effective implementation of project-based learning. Thus, this study not only has theoretical value in expanding research on technology-based learning media but also has practical implications for improving learning quality in schools.

RESEARCH METHOD

This research employs a qualitative case study approach to explore the need for developing Google Sites-based Project-Based Learning media at MI Miftahul Huda Selok Anyar Pasirian. The qualitative method is chosen to gain an in-depth understanding of the phenomenon, focusing on real-life contexts and experiences of teachers and students(Lai & Lum, 2013). Data collection techniques include observation, questionnaires, interviews, and documentation. Observation is conducted to examine the learning process and the current use of digital media in the classroom. Questionnaires are distributed to students and teachers to gather insights regarding their needs and perceptions of PjBL-based digital learning media. Interviews with teachers provide a deeper understanding of the challenges and expectations

in implementing PjBL using digital tools. Documentation, such as lesson plans, curriculum guidelines, and school policies, is analyzed to support the data findings. Data validation is carried out using triangulation techniques by comparing data from different sources and methods to ensure credibility and accuracy. This approach allows for a comprehensive analysis of the learning media needs and provides a strong foundation for the development of Google Sites as an effective PjBL-based learning tool.

Table 1. Method Research

Component	Description
Approach	Qualitative (Case Study)
Research Location	MI Miftahul Huda Selok Anyar Pasirian
Research Subjects	Teachers and 11th-grade students
Data Collection Techniques	- **Observation:** Observing the learning process and the use of digital media.
	- **Questionnaire:** Collecting data on the needs and perceptions of students and teachers regarding digital learning media based on PjBL.
	- **Interview:** Exploring teachers' and students' perspectives on challenges and opportunities in implementing PjBL using Google Sites.
	- **Documentation:** Analyzing relevant documents, such as syllabi, lesson plans, and school policies related to project-based learning.
Data Analysis Technique	Miles & Huberman's interactive model: data reduction, data display, and conclusion drawing.
Data Validity Technique	Triangulation (source, method, and theory) to enhance data validity.

RESULT AND DISCUSSION

Result

Observations conducted in the 11th-grade classroom at MI Miftahul Huda Selok Anyar Pasirian focused on identifying the need for Google Sites-based Project-Based Learning (PjBL) media. The findings indicate that current learning methods heavily rely on conventional approaches such as lectures and written assignments, limiting student engagement and creativity. Teachers primarily use textbooks and PowerPoint presentations, while students engage in passive learning with minimal opportunities for collaboration or hands-on project work.

The lack of interactive learning media has resulted in low student motivation and difficulty in understanding complex concepts. Additionally, digital infrastructure is limited, with unstable internet access and insufficient devices. Teachers acknowledge the potential benefits of digital learning tools but highlight challenges such as limited technical skills, lack of training, and inadequate institutional support. These findings align with the research problem, emphasizing the need for an innovative learning medium to enhance engagement and facilitate PjBL implementation.

Further observations indicated that students who had access to digital learning tools demonstrated higher levels of engagement and comprehension. In contrast, students relying solely on traditional methods often struggled with abstract concepts and required additional explanations from teachers. Classroom dynamics also reflected a lack of student-centered learning, as teacher-led instruction dominated discussions, leaving little room for collaborative or exploratory activities. These factors further highlight the urgency of integrating technology-driven solutions like Google Sites-based PjBL media.

A questionnaire was distributed to teachers and students to assess their perceptions and needs regarding digital learning media based on PjBL. The results are summarized in the following table:

Table 2. Result of questionnaire

Category	Indicator	Teachers (%)	Students (%)
Current Learning Methods	Lecture-based	70%	65%
	Textbook-dependent	60%	55%
Use of Digital Media	Occasionally uses PowerPoint	50%	45%
	Never used Google Sites	90%	85%
Perceived Challenges	Limited technical skills	75%	60%
	Poor internet connection	65%	55%
Interest in Digital Learning	Willing to use Google Sites	80%	75%
	Prefers interactive media	85%	80%

The results confirm that while traditional learning dominates, both teachers and students recognize the importance of integrating digital media. However, major challenges such as lack of digital literacy, poor infrastructure, and internet instability hinder implementation. Despite these obstacles, there is a strong interest in adopting Google Sites for PjBL if adequate training and resources are provided. These findings directly support the research objective of analyzing the need for Google Sites-based PjBL media as an effective learning tool.

Additionally, further analysis of questionnaire responses indicated that students who had previously engaged in digital learning experiences, even outside the classroom,

demonstrated a greater willingness to embrace PjBL-based approaches. Teachers who had attended digital literacy workshops also showed more openness to incorporating online platforms into their teaching methodologies.

Interviews with teachers and students provided deeper insights into their experiences and challenges related to PjBL and digital learning. Teachers expressed enthusiasm for digital innovation but admitted struggling with technology due to limited training. One teacher stated,

"We want to integrate digital tools but lack the necessary skills and guidance."

Another highlighted the need for structured support, stating,

"Without proper training, it is difficult to use digital platforms effectively."

Students, on the other hand, expressed frustration with monotonous learning methods and emphasized their preference for interactive and collaborative learning. A student remarked,

"Traditional assignments feel repetitive. If we could use Google Sites for projects, it would be more engaging and practical."

However, concerns were raised regarding unequal access to devices and internet connectivity, particularly for students from lower-income backgrounds.

Further analysis of interview transcripts indicated that some students had personal experiences using online platforms for informal learning, such as watching educational videos or engaging in online discussion forums. These students expressed confidence in adapting to PjBL approaches using Google Sites. Teachers who had prior experience using basic digital tools, such as PowerPoint or WhatsApp for educational purposes, also showed greater readiness to experiment with more advanced digital platforms.

School administrators acknowledged the importance of technology in education but cited financial constraints as a barrier to infrastructure improvements. They emphasized the need for external support, such as government funding or partnerships, to enhance digital learning facilities. These findings validate the research problem by highlighting the gap

between curriculum expectations and actual classroom practices, reinforcing the necessity of developing Google Sites-based PjBL media.

An analysis of school documents, including syllabi, lesson plans, and institutional policies, revealed inconsistencies between curriculum goals and actual implementation. While national education policies advocate for ICT integration and student-centered learning, lesson plans at MI Miftahul Huda Selok Anyar Pasirian show minimal use of digital tools or project-based assessments. Traditional assessments, such as multiple-choice tests and essays, remain the primary evaluation methods.

Further review of school policies indicates that while there is a general commitment to digital learning, no concrete strategies or structured implementation plans exist. This misalignment between policy and practice reinforces the research gap, highlighting the need for structured digital learning solutions like Google Sites-based PjBL media.

Moreover, a comparative analysis of lesson plans from different teachers showed significant disparities in the extent of digital integration. While some educators attempted to incorporate multimedia elements, the lack of standardized guidelines resulted in inconsistent application of digital learning strategies. These findings further underscore the need for a structured and universally accessible platform like Google Sites to ensure uniformity and effectiveness in implementing PjBL.

Triangulation was conducted by cross-referencing observation, questionnaire, interview, and documentation data. The consistency among these sources confirms the following key findings:

- Traditional learning methods dominate, limiting student engagement and creativity.
- Both teachers and students recognize the benefits of digital learning but face significant barriers, including lack of technical skills, infrastructure limitations, and internet instability.
- School policies support digital integration in theory but lack practical implementation strategies.
- There is a strong demand for interactive, project-based digital learning tools like Google Sites, but training and resources are necessary for effective adoption.

These triangulated findings align with the study's objectives by demonstrating the pressing need for Google Sites-based PjBL media to enhance student engagement, facilitate collaboration, and address learning challenges at MI Miftahul Huda Selok Anyar Pasirian .

The research findings strongly indicate that the development of Google Sites-based Project-Based Learning media is essential to improving the learning experience at MI Miftahul Huda Selok Anyar Pasirian . The current reliance on traditional teaching methods fails to engage students effectively, while the lack of structured digital learning strategies limits opportunities for interactive and collaborative learning.

While both teachers and students express interest in using digital tools, major challenges such as lack of training, inadequate infrastructure, and internet connectivity issues need to be addressed. The findings also highlight the need for institutional support in providing professional development and technical assistance to ensure successful implementation.

Moreover, findings suggest that the successful implementation of Google Sites-based PjBL media will require a multi-faceted approach, including structured training programs for teachers, investments in digital infrastructure, and strategic partnerships with stakeholders. Addressing these concerns will not only enhance learning outcomes but also foster digital literacy among both educators and students, preparing them for future educational and professional environments.

The results support the research objective of analyzing the need for Google Sites-based PjBL media. By addressing the identified challenges and leveraging digital platforms, schools can enhance learning outcomes, foster creativity, and better prepare students for the demands of the 21st century. These findings provide a strong foundation for the next phase of research, which involves designing and implementing the proposed digital learning media.

Discussion

Project-Based Learning (PjBL) has long been recognized as an approach capable of enhancing student engagement and creativity. According (Songkhro et al., 2022), PjBL places students at the center of learning by challenging them to complete projects relevant to real-world situations. Observations conducted in the 11th-grade classroom at MI Miftahul Huda Selok Anyar Pasirian indicate that current teaching methods are still dominated by conventional approaches such as lectures and written assignments, which hinder student engagement and creativity. Teachers primarily use textbooks and PowerPoint presentations, while students tend to be passive with minimal opportunities for collaboration and hands-on project exploration.

Research findings also indicate that the lack of interactive learning media contributes to low student motivation and difficulties in understanding complex concepts. This aligns with (Oktalia & Drajati, 2018), who stated that interactive, technology-based learning

environments can enhance students' understanding of abstract material. Additionally, limited digital infrastructure, such as unstable internet access and insufficient devices, poses a major challenge in implementing digital learning media. Teachers acknowledge the benefits of using technology in education but face obstacles such as limited technical skills, insufficient training, and a lack of institutional support. These findings highlight the urgency of developing Google Sites-based learning media to support PjBL implementation.

Previous research by (West & Malatji, 2021) emphasizes that integrating technology into project-based learning can enhance student participation and facilitate a deeper understanding of concepts. Further observations revealed that students who had access to digital learning tools demonstrated higher levels of engagement and comprehension than those who relied solely on traditional methods. In classrooms still dominated by teacher-led instruction, there is limited student-centered learning, reducing opportunities for collaboration and independent idea exploration(Abdel-Reheem Amin, 2020).

Data from questionnaires distributed to teachers and students indicate that although traditional teaching methods still dominate, there is a growing awareness of the importance of integrating digital media. However, major barriers to implementation include a lack of digital literacy, infrastructure limitations, and internet instability. Despite these challenges, both teachers and students express strong interest in using Google Sites for PjBL, provided adequate training and resources are available. This aligns with research by (Prayudi & Anggriani, 2022), which states that teachers' readiness to adopt technology depends heavily on the training and support they receive.

Interviews with teachers and students provided deeper insights into the challenges and opportunities of implementing digital PjBL. Teachers showed enthusiasm for digital innovation but admitted feeling unconfident using technology without sufficient guidance. As one teacher stated, "We want to integrate digital tools but lack the necessary skills and guidance." This statement reinforces the need for systematic training to enable teachers to adopt digital learning platforms effectively. Meanwhile, students expressed frustration with monotonous teaching methods and a preference for more interactive and collaborative learning(Maqbool, 2016). One student remarked, "Traditional assignments feel repetitive. If we could use Google Sites for projects, it would be more engaging and practical." However, concerns were raised about unequal access to devices and internet connectivity, particularly among students from low-income backgrounds.

An analysis of school documents, such as syllabi and lesson plans, revealed inconsistencies between curriculum policies that advocate for technology integration and actual classroom practices. Although national education policies emphasize ICT usage in education, lesson plans at MI Miftahul Huda Selok Anyar Pasirian show minimal technology integration. Assessments still primarily rely on multiple-choice tests and essays rather than project-based evaluations. This discrepancy aligns with research by (Sevtia et al., 2022), which highlights that while educational policies often stress the importance of technology, real-world implementation remains challenging.

Findings from this research were validated through data triangulation from observations, questionnaires, interviews, and document analysis. Key findings include: (1) traditional teaching methods still dominate, limiting student engagement and creativity; (2) both teachers and students recognize the benefits of digital learning but face significant barriers such as limited technical skills, infrastructure constraints, and internet instability; (3) school policies support digital learning in theory but lack concrete implementation strategies; and (4) there is a strong demand for interactive, project-based digital learning tools like Google Sites, but proper training and resources are required for effective adoption.

These findings strongly support the necessity of developing Google Sites-based PjBL media to enhance the learning experience at MI Miftahul Huda Selok Anyar Pasirian . The heavy reliance on traditional teaching methods has proven ineffective in fostering student engagement, while the absence of structured digital learning strategies limits opportunities for interactive and collaborative learning. To ensure successful implementation, a multi-faceted approach is required, including structured teacher training programs, investments in digital infrastructure, and support from various stakeholders(Yang, 2020). Addressing these challenges will not only improve student learning outcomes but also promote digital literacy, preparing both educators and students for future educational and professional demands.

CONCLUSION

The findings of this study confirm the critical need for the development of Google Sites-based Project-Based Learning (PjBL) media at MI Miftahul Huda Selok Anyar Pasirian . Traditional teaching methods, which rely heavily on lectures and written assignments, limit student engagement, creativity, and collaborative learning opportunities. The lack of interactive digital media exacerbates student disinterest and comprehension difficulties, particularly in understanding complex concepts.

Despite these challenges, teachers and students recognize the potential benefits of digital learning tools. However, significant obstacles including inadequate technical skills, poor digital infrastructure, and unstable internet access hinder effective implementation. Institutional support in the form of training, technical assistance, and resource allocation is essential to overcome these barriers.

To ensure successful integration of Google Sites-based PjBL, a comprehensive strategy involving professional development programs for teachers, improvements in digital infrastructure, and collaboration with educational stakeholders is necessary. By addressing these factors, schools can create a more engaging, technology-enhanced learning environment that fosters creativity, digital literacy, and deeper conceptual understanding among students. This research lays the foundation for future studies on the design and implementation of Google Sites-based PjBL media to optimize learning outcomes.

REFERENCES

Abdel-Reheem Amin, E. (2020). A Review of Research into Google Apps in the Process of English Language Learning and Teaching. *Arab World English Journal*, *11*(1), 399–418. https://doi.org/10.24093/awej/vol11no1.27

Amar Salahuddin, M. Anggrayni, & Kenny Puspita Dewi. (2023). Pengembangan Media Pembelajaran Berbasis Web Google Sites Pada Pembelajaran Bahasa Indonesia Kelas Iv Sdn 07 Sitiung. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, *9*(3), 60–72. https://doi.org/10.36989/didaktik.v9i3.1533

Cahyo Nugroho, M. K., & Hendrastomo, G. (2021). Pengembangan Media Pembelajaran Berbasis Google Sites Pada Mata Pelajasan Sosiologi Kelas X. *Jurnal Pendidikan Sosiologi Dan Humaniora*, *12*(2), 59. https://doi.org/10.26418/j-psh.v12i2.48934

Hartnett, E., & Koury, R. (2012). Using Google Apps Through the Electronic Resource Life Cycle. *Collection Management*, *37*(1), 47–54. https://doi.org/10.1080/01462679.2012.629600

Hidayat, H., Hidayat, O. S., & Widiasih, W. (2023). Development of Google Sites-Based Learning Resources to Improve Mastery of Concepts and Process Skills in Electrical Circuit Materials. *Jurnal Penelitian Pendidikan IPA*, *9*(6), 4624–4631. https://doi.org/10.29303/jppipa.v9i6.3612

Khumairoh, Y., Nuha, U., Ahmad, N., & Jember, U. (2025). *Development and Validation of Google Sites Technology-Assisted Student Worksheet to Increase Students ' Collaboration Skills in Science Learning in Junior High School*. *7*(1), 41–52.

Lai, Y.-C., & Lum, E. K.-L. (2013). Enhancing teaching and learning of Home Economics in secondary schools with wikis: An action research study. *Themes in Science and Technology Education*, *5*(1–2), 45–60. http://earthlab.uoi.gr/theste/index.php/theste/article/view/106

Lang, G., & Ceccucci, W. (2013). Clone yourself: Using screencasts in the classroom to work with students one-on-one. *2013 Proceedings ISECON: Information Systems Educators Conference and CONISAR 2013, Conference on Information Systems Applied Research*, *12*(November), 4–14.

Maqbool, J. (2016). Group work and the impact, if any, of the use of google applications for education. *Proceedings of the 13th International Conference on Cognition and Exploratory Learning in the Digital Age, CELDA 2016*, *Celda*, 149–156.

Ningsih, S., Murtadlo, & Farisi, M. I. (2023). Pengembangan Media Pembelajaran Berbasis Web Google Sites Untuk Meningkatkan Hasil Belajar Siswa Sekolah Dasar. *Jambura Journal of Educational Management*, *4*(1), 108–122. https://ejournal-fip-ung.ac.id/ojs/index.php/jjem/index

Oktalia, D., & Drajati, N. A. (2018). English teachers' perceptions of text to speech software and Google site in an EFL Classroom: What English teachers really think and know. *International Journal of Education and Development Using Information and Communication Technology* , *14*(3), 183–192.

Prayudi, A., & Anggriani, A. A. (2022). Pengembangan Media Pembelajaran Interaktif Berbasis Web Menggunakan Google Sites untuk Meningkatkan Prestasi Belajar Siswa. *Jurnal Pendidikan Dan Media Pembelajaran*, *1*(1), 9–18. https://doi.org/10.59584/jundikma.v1i1.2

Saputra, R., Diandita, Y. N., & Zulfiati, H. M. (2023). Pengembangan Media Pembelajaran Berbasis Web Google Sites Pada Pembelajaran Ips Sekolah Dasar. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, *9*(2), 3327–3338. https://doi.org/10.36989/didaktik.v9i2.962

Sevtia, A. F., Taufik, M., & Doyan, A. (2022). Pengembangan Media Pembelajaran Fisika Berbasis Google Sites untuk Meningkatkan Kemampuan Penguasaan Konsep dan Berpikir Kritis Peserta Didik SMA. *Jurnal Ilmiah Profesi Pendidikan*, *7*(3), 1167–1173. https://doi.org/10.29303/jipp.v7i3.743

Songkhro, J., Dequiña, Jr., L. S., Dominguez, R. R., & Phanlapa Khathayut, P. (2022). Effectiveness of Using Animated Videos via Google Sites in Enhancing Socio-culture of Native English-Speaking Countries. *Education Quarterly Reviews*, *5*(2). https://doi.org/10.31014/aior.1993.05.02.497

Sulistyawati, N. L. G., Suarjana, I. M., & Wibawa, C. I. M. (2022). Pengembangan Media Website Berbasis Google Sites pada Materi Statistika Kelas IV Sekolah Dasar. *Jurnal Pendidikan Dan Konseling*, *4*(4), 895–905.

West, J., & Malatji, M. J. (2021). Technology Integration in Higher Education: The use of Website Design Pedagogy to Promote Quality Teaching and Learning. *Electronic Journal of E-Learning*, *19*(6), 629–641. https://doi.org/10.34190/ejel.19.6.2557

Yang, S. J. (2020). Perceived benefits of using telecollaboration for pre-service english teachers. *English Teaching(South Korea)*, *75*(3), 109–131. https://doi.org/10.15858/engtea.75.3.202009.109