

Teacher Empowerment through a Training Program on the Development of Google Sites–Based Educational Websites at SMAN 2 South Bengkulu, Indonesia

 Dewi Jumiarni^{1*},  Prendi Niki Halhaji²,  Yennita³,  Rendi Zulni Ekaputri⁴,  Dina Qorisah⁵

^{1,2,3,4,5}Universitas Bengkulu
Indonesia
✉ dewij@unib.ac.id*



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Abstract

Background: SMAN 2 Manna, South Bengkulu, has teachers with a high level of educational background and adequate school facilities; however, technology has not yet been optimally integrated into the teaching and learning process.

Objectives: This community service activity was conducted to improve the understanding and skills of teachers at SMAN 2 South Bengkulu in using Google Sites for teaching.

Methods: This community service activity was carried out at SMAN 2 South Bengkulu with 30 teachers as participants. The training program consisting of three stages: preparation, implementation, and evaluation.

Result: The implementation of this community service program significantly improved the knowledge and skills of teachers at SMAN 2 Manna, South Bengkulu. Based on the evaluation results obtained through the questionnaire, the score increased from 20.67 in the pretest to 92 in the posttest, with an N-gain value of 0.90, which is classified in the high category.

Conclusion: The training program was highly effective in enhancing teachers' competence in utilizing digital technology in learning. Therefore, it is expected that teachers will be able to implement website-based learning using Google Sites in their teaching practices, thereby supporting the realization of digital transformation in the school.

A. Introduction

21st-century learning emphasizes the development of skills such as critical thinking, collaboration, communication, and creativity, which are strongly supported by the digital transformation in education. This transformation enables the integration of various learning technologies, such as online learning platforms, interactive multimedia, and digital learning resources that contribute to enhancing students' learning experiences. The integration of these technologies enables a more flexible and adaptive learning process that accommodates diverse learning styles. Additionally, digital transformation fosters the creation of a collaborative and globally connected learning ecosystem, enabling students to learn not only from teachers but also from diverse sources and learning communities worldwide. This provides opportunities for students to develop higher-order thinking skills through contextual exploration, analysis, and problem-solving. Google Sites is one of the digital learning tools that can be utilized to support the learning process.

Google Sites is an online application owned by Google that is used for creating websites easily and simply; it is free to use and available to all users with a Google account. This application is flexible, user-friendly,

and compatible, making it accessible on various devices such as laptops, smartphones, and tablets (Sari et al., 2022). As a digital learning platform, Google Sites provides easily accessible interactive media that can strengthen these skills through multimedia features, interactive quizzes, and online collaboration that encourage active student engagement (Tamrin et al., 2024; Qurrata'ain et al., 2025).

Digital transformation using Google Sites enables a shift from conventional learning methods to more flexible, personalized, and technology-based learning, in line with the requirements of the Merdeka curriculum and the learning needs of the 21st century (Novfirman & Aulia, 2023). The use of Google Sites also enhances learning efficiency and real-time access to materials across various devices, thereby supporting self-directed and adaptive learning processes (Tamrin et al., 2024; Faiz et al., 2025). Additionally, the integration of Google Sites helps improve students' digital literacy while preparing them to become competent learners in the digital age (Ernest & Putra M, 2023; Halim & Halim, 2024). Nevertheless, challenges such as inadequate technological infrastructure and limited teacher competence in operating these platforms must be addressed to ensure the effective implementation of digital transformation in 21st-century learning (Fitriyah & Turmudzi, 2025; Sabariah et al., 2024).

SMA Negeri 2 Bengkulu Selatan is located in Manna City, South Bengkulu Regency, Bengkulu Province. This school plays a strategic role in improving the quality of human resources in the South Bengkulu region. The teachers possess high educational backgrounds, and the school has adequate ICT facilities to support the learning process. As a school located in a semi-urban area, SMA Negeri 2 South Bengkulu actually already has basic facilities that support technology-based learning, such as an internet network and computer laboratory. However, the limited number of devices and the fact that teachers have not yet maximized the use of technology mean that digital learning media are not yet widely used in teaching and learning activities. In fact, developments in educational technology require teachers to be able to integrate technology into the learning process so that material can be delivered in a more engaging, interactive, and easily understandable way for students. Therefore, this community service activity was conducted to improve the understanding and skills of teachers at SMAN 2 South Bengkulu in using Google Sites for teaching.

B. Methods

This community service activity was carried out at SMAN 2 South Bengkulu with 30 teachers as participants. The training program consist of three stages: preparation, implementation, and evaluation. During the preparation stage, the team coordinated with the school principal to identify the needs and characteristics of the participating teachers and to set the schedule. During the implementation stage, a training session on creating educational materials using Google Sites was conducted, featuring both theoretical instruction and hands-on practice. During the practical session, the community service team assisted participants in creating their own educational websites according to the teachers' needs. In the final stage, an evaluation was conducted to determine the success rate of the activity and assess any shortcomings during its implementation. The evaluation was carried out using a training participant feedback questionnaire.

C. Results and Discussion

1. Results

This community service activity was held on August 23, 2025, with 30 teachers participating. The activity began with a pretest to assess the participants' initial proficiency in creating educational websites using Google Sites (Table 1). This was followed by a presentation on creating educational websites based on Google Sites, and then hands-on practice in creating educational websites according to each teacher's desired content. Each teacher designed an educational website with guidance from the community service team. Following the session, three participants were invited to present the websites they had developed. An evaluation was subsequently conducted through a post-test. Documentation of the activity is shown in Figure 1.



Figure 1. Documentation of activity

Table 1. Questionnaire on Participants' Knowledge and Skills

No	Statement	Response	
		Yes	No
1	I have heard of learning websites that use Google Sites		
2	I can create a simple educational		
3	I can add text, images, and videos to Google Sites		
4	I can create new pages for different topics in Google Sites.		
5	I can embed links or additional learning resources into Google Sites.		
6	I can manage access settings in Google Sites so that it can be shared with students.		
7	I can use Google Sites to present learning materials more engagingly.		
8	I can use Google Sites to support students' independent learning.		
9	I can use Google Sites as an interactive medium in teaching activities.		
10	I am ready to use Google Sites in daily teaching practice.		

The results of the initial evaluation showed that 83.33% of the teachers had heard about learning websites using Google Sites; however, only 10% were able to create a simple educational website, and none of the participants (0%) were ready to use Google Sites in their daily teaching practice. These findings highlight the need for the training program. After the training and mentoring were implemented, participants' scores increased significantly. The score increased from 20.67 in the pretest to 92 in the posttest, with an N-gain of 0.90, indicating a great improvement. This result indicates that the training program was highly effective in improving participants' understanding and skills in using Google Sites, demonstrating the significant impact of the intervention.

2. Discussion

The results of the activity indicate that training in the development of Google Sites-based educational websites significantly enhances teachers' digital competencies. This is evident from the increase in pretest-posttest scores and high N-gain values. This suggests that the training improves teachers' digital literacy. Hands-on practice in creating Google Sites proved more effective than merely studying theory, as it provided real-world experience that significantly enhanced conceptual understanding and technical skills. In line with the statements of [Hamzah et al. \(2024\)](#), direct training and mentoring in the creation of Google Sites-based websites can improve the ability of teachers and students to operate Google Sites features, enabling them to create engaging and functional digital learning media. Furthermore, hands-on practice allows participants to overcome technical challenges in real-time, reinforces understanding through direct experience, and enhances creativity and collaboration in digital content creation ([Darso et al., 2022](#)).

Participants demonstrated a high level of enthusiasm during the training and were able to follow the activities effectively. This can be attributed to the fact that Google Sites-based learning media are relatively easy for both teachers and students to implement, as the platform is free, features a simple interface, does not require programming skills, and is particularly suitable for novice teachers ([Halimatusyadiah & Disman, 2023](#)). In addition, the use of Google Sites does not impose a significant burden on students since it is a multiplatform tool that can be accessed via laptops, tablets, and mobile phones, is available anytime and anywhere ([Suryana et al., 2023](#); [Ihsan Basyori, 2025](#)), is relatively data-efficient, and does not require application installation ([Faiz et al., 2025](#)).

Google Sites facilitates teachers in organizing learning materials through the integration of various content formats, including text, images, videos, quizzes, games, and hyperlinks. The utilization of Google Sites in conjunction with other digital tools such as Canva, Kahoot, and Google Classroom enhances interactivity and supports the implementation of formative and summative assessments ([Faiz et al., 2025](#); [Halim & Halim, 2024](#)). Furthermore, Google Sites can be seamlessly integrated with Google Drive, Google Docs, Google Slides, and Google Forms, and it can be efficiently synchronized with Google Classroom as a learning management system (LMS) ([Dewi et al., 2023](#); [Saputra & Nofrion, 2022](#)).

2.1 Implications

The implementation of a training program on developing Google Sites-based educational websites for teachers at SMAN 2 South Bengkulu has had significant implications for enhancing teachers' digital competencies in support of 21st-century learning. Teachers not only gained conceptual knowledge regarding the use of technology but also practical skills in designing interactive and accessible web-based learning materials. Another implication is evident in the shift in the learning paradigm, where teachers are beginning to transition from conventional methods toward more flexible, collaborative, and student-centered digital learning. The developed websites enable the integration of various learning resources such as videos, modules, and online assessments, thereby enriching students' learning experiences. Additionally, this initiative has the potential to enhance digital literacy for both teachers and students. Trained teachers can serve as agents of change within the school environment in the sustainable implementation of educational technology.

2.2 Research contribution

This community service initiative has contributed to the creation of a tangible product in the form of an educational website that teachers can immediately use in their classrooms. This initiative has also enhanced teachers' digital competencies in designing and developing technology-based learning materials. Furthermore, it supports digital transformation within the school environment, particularly by promoting the use of web-based learning platforms such as Google Sites as an innovative tool for a more interactive, flexible, and 21st-century-ready learning process.

2.3 Limitations

A limitation of this community service activity was the relatively short duration of the training, which constrained the mentoring process in adequately addressing participants' individual needs. Consequently, participants' proficiency in developing Google Sites-based educational websites was not achieved

uniformly. The limited time also restricted the scope of the training to basic competencies in website development, such as creating new web pages and integrating content in the form of text, images, presentation slides, and videos. More advanced competencies, including the integration of additional online learning platforms and features such as those provided by Google Classroom, Kahoot!, and Wayground were not comprehensively addressed, thereby limiting the potential for creating more comprehensive, interactive, and engaging learning environments. To mitigate this limitation, the community service team provided ongoing mentoring and online consultation for participants who continued to experience difficulties.

2.4 Suggestions

Further follow-up in the form of advanced training is necessary to enhance teachers' competencies in developing more complex and interactive website features. In addition, the implementation of similar programs is recommended to be expanded to other schools in order to promote the equitable distribution of teachers' digital competencies.

D. Conclusion

The implementation of this community service program significantly improved the knowledge and skills of teachers at SMAN 2 Manna, South Bengkulu. Based on the evaluation results obtained through the questionnaire, the score increased from 20.67 in the pretest to 92 in the posttest, with an N-gain value of 0.90, which is classified in the high category. These findings indicate that the training program was highly effective in enhancing teachers' competence in utilizing digital technology in learning. Therefore, it is expected that teachers will be able to implement website-based learning using Google Sites in their teaching practices, thereby supporting the realization of digital transformation in the school.

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F. Author Contribution Statement

DJ served as the team leader and contributed to conceptualization, methodology, development of training materials, implementation of the community service program at SMAN 2 Bengkulu Selatan, data analysis, and writing the original draft. PNH contributed to the development of the training materials, delivery of the training sessions, supervision and assistance to the participants during the implementation of the program, writing review and editing (results and discussion sections). Y contributed to the development of the evaluation instruments (questionnaires, pretest, and posttest), data collection, implementation of the training, and data analysis. RZE contributed to the academic review, validation of the manuscript content, data processing, and writing review and editing. DQ contributed to administrative management, documentation of the program, and manuscript editing. All authors have read and approved the final version of the manuscript submitted for publication.

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